

**Before the**  
**MAHARASHTRA ELECTRICITY REGULATORY COMMISSION**  
**World Trade Centre, Centre No.1, 13th Floor, Cuffe Parade, Mumbai – 400 005**  
**Email: mercindia@mercindia.org.in**  
**Website: www.mercindia.org.in**  
**Case No. 107 of 2011**

**In the matter of**  
**Petition filed by The Maharashtra State Power Generation Company Limited**  
**(MSPGCL) for approval of Truing up for FY 2009-10, and Annual Performance**  
**Review for FY 2010-11**

Maharashtra State Power Generation Company Limited.....Petitioner

**Shri V. P. Raja, Chairman**  
**Shri Vijay L. Sonavane, Member**

**ORDER**

**Dated: December 30, 2011**

In accordance with MERC (Terms and Conditions of Tariff) Regulations, 2005 and upon directions from the Maharashtra Electricity Regulatory Commission (hereinafter referred as “MERC” or “the Commission”), Maharashtra State Power Generation Company Limited (MSPGCL), submitted its Petition on affidavit for approval of final Truing up for FY 2009-10 and Annual Performance Review (APR) for FY 2010-11. The Commission, in exercise of the powers vested in it under Section 61 and Section 62 of the Electricity Act, 2003 (EA 2003) and all other powers enabling it in this behalf, and after taking into consideration all the submissions made by MSPGCL, all the suggestions and objections of the public, responses of MSPGCL, issues raised during the Public Hearing, and all other relevant material, determines the final Truing up for FY 2009-10 and Annual Performance Review for FY 2010-11 as under.

# **Table of Contents**

<b>1</b>	<b>BACKGROUND AND BRIEF HISTORY .....</b>	<b>14</b>
1.1	Background.....	14
1.2	Commission’s Order on ARR and Tariff Petition for FY 2005-06 and FY 2006-07 .....	14
1.3	Review Petition on Tariff Order for FY 2006-07 .....	14
1.4	Commission’s Order on MYT Petition of MSPGCL for FY 2007-08 To FY 2009-10.....	15
1.5	Commission’s Order on Truing up for FY 2005-06, FY 2006-07 and FY 2007-08 and Provisional Truing up for FY 2008-09 .....	15
1.6	Commission’s Order on Truing up for FY 2008-09, Annual Performance Review for FY 2009-10 and determination of Tariff for FY 2010-11 .....	15
1.7	Petition for Final True up For FY 2009-10 and Annual Performance Review for FY 2010-11 15	
1.8	Admission of the Current Petition and Public Hearing Process .....	16
1.9	Organization of this Order .....	18
<b>2</b>	<b>BRIEF OUTLINE OF SUGGESTION/ OBJECTIONS RAISED, RESPONSE FROM MSPGCL AND THE COMMISSION’S VIEW.....</b>	<b>20</b>
2.1	Reactive energy charge.....	20
2.2	Power Purchase Agreement.....	20
2.3	Uninterrupted Power Supply .....	21
2.4	Theft, Pilferage, Damage of coal supply and Increase in Coal Prices.....	22
2.5	Controllable and Uncontrollable expenses .....	24
2.6	Plant Load Factor and Availability.....	24
2.7	Auxiliary Consumption and Specific Oil Consumption .....	27
2.8	Difference in PLF of Nasik and Bhusawal Power Plants .....	28
2.9	Lack of Adherence to CPRI Recommendations:.....	30
2.10	Appeals before the Hon’ble ATE by MSPGCL .....	31
2.11	Lack of Uniformity in fixing Tariffs for Hydro Power Plants.....	33
2.12	Closure of Old Units.....	33
2.13	Unsatisfactory Performance by Paras Unit 3 and Parli Unit 6.....	35
2.14	Increase in Cost of Generation.....	35

<b>3</b>	<b>IMPLEMENTATION OF THE HON'BLE ATE'S DIRECTION IN APPEAL NO 199 OF 2010:</b> .....	<b>37</b>
3.1	Background.....	37
3.2	Ruling of the Hon'ble ATE .....	38
3.3	Impact of Judgment of the Hon'ble Appellate Tribunal for Electricity (ATE) .....	40
<b>4</b>	<b>FINAL TRUING UP FOR FY 2009-10 (OLD STATIONS)</b> .....	<b>43</b>
4.2	Performance Parameters and Fuel Cost .....	43
4.3	Availability and Net Generation .....	46
4.4	Auxiliary Consumption .....	48
4.5	Station Heat Rate (SHR).....	49
4.6	Secondary Fuel Oil Consumption.....	50
4.7	Transit Loss .....	51
4.8	Fuel Price, Fuel Mix and Calorific Value.....	52
4.9	Fuel Cost of different Stations in FY 2009-10 .....	52
4.10	Other Variable Charges .....	65
4.11	Operation and Maintenance expenses.....	66
4.12	Capital Expenditure (Capex) and Capitalisation.....	68
4.13	Depreciation and Advance Against Depreciation (AAD) .....	69
4.14	Interest Expenses and Other Finance Charges.....	71
4.15	Interest on Working Capital.....	73
4.16	Return on Equity.....	74
4.17	Other Debits.....	75
4.18	Prior Period Items .....	76
4.19	Income tax .....	78
4.20	Reduction in Annual Fixed Charges on account of Reduction in Availability.....	78
4.21	Revenue side Truing-up computation.....	79
4.22	Sharing of Gains and Losses.....	80
<b>5</b>	<b>ANNUAL PERFORMANCE REVIEW FOR FY 2010-11</b> .....	<b>84</b>
5.1	Performance Parameters .....	84
5.2	Station-Wise Performance Parameters .....	84

1.	Uran Gas Power Station.....	84
i.	Availability and PLF.....	84
ii.	Station Heat Rate .....	85
iii.	Auxiliary Consumption .....	85
iv.	Fuel Price and Calorific Value.....	85
2.	Bhusawal Thermal Power Station.....	85
i.	Availability and PLF.....	85
ii.	Station Heat Rate .....	86
iii.	Specific Oil Consumption.....	86
iv.	Auxiliary Consumption .....	86
3.	Chandrapur Super Thermal Power Station .....	86
i.	Availability and PLF.....	86
ii.	Station Heat Rate .....	86
iii.	Specific Oil Consumption.....	87
iv.	Auxiliary Consumption .....	87
v.	Fuel Price and Calorific Value.....	87
4.	Nasik Thermal Power Station .....	87
i.	Availability and PLF.....	87
ii.	Station Heat Rate .....	87
iii.	Specific Oil Consumption.....	87
iv.	Auxiliary Consumption .....	88
5.	Khaperkheda Thermal Power Station.....	88
i.	Availability and PLF.....	88
ii.	Station Heat Rate (SHR).....	88
iii.	Specific Oil Consumption.....	88
iv.	Auxiliary Consumption .....	88
6.	Paras Thermal Power Station.....	89
7.	Parli Thermal Power Station.....	89
i.	Availability and PLF.....	89
ii.	Station Heat Rate .....	89
iii.	Specific Oil Consumption.....	89
iv.	Auxiliary Consumption .....	89

8.	Koradi Thermal power Station .....	90
i.	Availability and PLF.....	90
ii.	Station Heat Rate .....	90
iii.	Specific Oil Consumption.....	90
iv.	Auxiliary Consumption .....	90
5.3	Availability and PLF: .....	90
5.4	Auxiliary Consumption: .....	91
5.5	Station Heat Rate (SHR).....	92
5.6	Transit Loss .....	93
5.7	Secondary Fuel Oil Consumption.....	93
5.8	Energy Availability for FY 2010-11.....	94
5.9	Fuel cost of generating Stations for FY 2010-11 .....	94
5.10	Other Variable Costs of Thermal Generating Stations .....	111
5.11	Capital Expenditure and Capitalization .....	111
5.12	Lease rent for Hydro Stations .....	112
5.13	Annual Performance Review: (Fixed charges).....	112
5.14	Operation and Maintenance (O&M) expenses .....	112
5.15	Depreciation including Advance Against Depreciation .....	114
5.16	Interest on Working Capital (IoWC) .....	116
5.17	Interest on Loan Capital and Finance Charges .....	118
5.18	Commission's Analysis and Ruling.....	119
5.19	Return on Equity (RoE).....	119
5.20	Non Tariff Incomes.....	121
5.21	Income Tax .....	121
5.22	Summary of ARR for FY 2010-11 .....	122
5.23	Tariff for Hydro Power Generating Stations .....	122
<b>6</b>	<b>TRUING UP FOR PARAS UNIT 3 AND PARLI UNIT 6.....</b>	<b>125</b>
6.1	Background and Brief History.....	125
6.2	Summary of the Commission's Ruling in Case No. 74 of 2011 and for Case No. 75 of 2011 126	
6.3	TRUING UP FOR PARAS UNIT 3 AND PARLI UNIT 6 .....	126

6.4	Fuel Cost.....	126
6.5	Interest expense .....	136
6.6	Depreciation and Advance Against Depreciation.....	137
6.7	Return on Equity (RoE).....	139
6.8	Interest on Working Capital.....	140
6.9	Reduction in Annual Fixed Charges on account of Reduction in Availability.....	141
6.10	Revenue side True-up for FY 2009-10 .....	141
6.11	Truing up summary for Parli Unit 6 and Paras Unit 3.....	142
<b>7</b>	<b>ANNUAL PERFORMANCE REVIEW FOR FY 2010-11.....</b>	<b>145</b>
7.1	Availability and PLF of Parli Unit 6 and Paras Unit 3 Parli Unit 6.....	145
7.2	Auxiliary Consumption .....	147
7.3	Station Heat Rate (SHR).....	147
7.4	Specific Oil Consumption.....	149
7.5	Gross and Net Generation.....	150
7.6	Variable Cost for Parli Unit 6 and Paras Unit 3.....	151
7.7	Operation and Maintenance expenses.....	154
7.8	Capital Expenditure and Capitalization .....	155
7.9	Depreciation and Advance Against Depreciation.....	155
7.10	Interest on Long term Loans and Finance Charges .....	157
7.11	Interest on Working Capital.....	157
7.12	Return on Equity.....	158
7.13	Income Tax .....	159
7.14	Non-tariff Income .....	159
7.15	Applicability of the Order.....	161

## List of Tables

Table 1 : Venue of Public Hearings .....	17
Table 2: Increase in Tariff due to increase in Coal Price .....	23
Table 3: Loss in PLF .....	26
Table 4: Availability and PLF of Bhusawal TPS .....	28
Table 5: Availability and PLF of Nasik TPS.....	29
Table 6: PLF of Bhusawal and Nasik TPS from FY 2006 to FY 2010.....	29
Table 7: Percentage of Imported Coal used in Bhusawal and Nasik.....	29
Table 8: Classification of CPRI recommended immediate Measures .....	30
Table 9: Tariff for Hydro Power Stations.....	33
Table 10: De-rated Capacity and Plant life of Old Units .....	34
Table 11: Depreciation and AAD for FY 2008-09 (Rs. Crore).....	40
Table 12: AFC to be disallowed in FY 2008-09 .....	41
Table 13: Net Entitlement as per Hon'ble ATE Judgment (Rs. Crore) .....	42
Table 14: Other Variable Charges as submitted by MSPGCL for FY 2009-10.....	43
Table 15: Availability for FY 2009-10 (Old Stations) .....	47
Table 16: Plant Load Factor for FY 2009-10 (Old Stations).....	48
Table 17: Auxiliary Consumption for FY 2009-10 (Old Stations) (%).....	49
Table 18: Station Heat Rate for FY 2009-10 (Old Stations) (kcal/kWh).....	50
Table 19: Secondary Fuel Oil Consumption for FY 2009-10 (Old Stations).....	51
Table 20: Transit Loss for FY 2009-10 (old Stations) (%) .....	51
Table 21: Fuel Cost of Bhusawal Thermal Power Station for FY 2009-10 (Rs. Crore) .....	52
Table 22: Fuel Cost of Chandarpur Thermal Power Station for FY 2009-10 (Rs. Crore) .....	54
Table 23: Fuel Cost of Koradi Thermal Power Station for FY 2009-10 (Rs. Crore).....	55
Table 24: Fuel Cost of Parli Thermal Power Station for FY 2009-10 (Rs. Crore).....	57
Table 25: Fuel Cost of Paras Thermal Power Station for FY 2009-10 (Rs. Crore) .....	58

Table 26: Fuel Cost of Nasik Thermal Power Station for FY 2009-10 (Rs. Crore).....	60
Table 27: Fuel Cost of Uran Power Station for FY 2009-10 (Rs. Crore).....	62
Table 28: Fuel Cost of Khaparkheda Thermal Power Station for FY 2009-10 (Rs. Crore).....	63
Table 29: Other Variable Charges for FY 2009-10 (Rs. Crore).....	65
Table 30: MSPGCL's submission on O&M expense for FY 2009-10.....	68
Table 31: Capitalization for FY 2009-10 (Rs. Crore) .....	69
Table 32: Depreciation and AAD for FY 2009-10 (Rs. Crore).....	70
Table 33: Net interest expense for Old stations in FY 2009-10 .....	71
Table 34: MSPGCL submission regarding Other Finance Charges for FY 2009-10 (Rs. Crore).....	71
Table 35: Interest and finance Charges for FY 2009-10 (Rs. Crore) .....	72
Table 36: Interest on Working Capital for FY 2009-10 (Rs Crore) .....	73
Table 37: Approved Interest on Working Capital for FY 2009-10 (Rs. Crore) .....	74
Table 38: MSPGCL's submission regarding RoE for FY 2009-10 (Rs. Crore).....	75
Table 39: MSPGCL's submission regarding Other Debits for FY 2009-10 (Rs. Crore) .....	75
Table 40: Prior period items for FY 2009-10 (Rs. Crore).....	77
Table 41: Reduction in AFC for FY 2009-10 (Rs Crore).....	78
Table 42: Revenue Considered by MSPGCL in FY 2009-10 (Rs. Crore) .....	79
Table 43: Revenue side True-up for FY 2009-10 (Rs. Crore).....	79
Table 44: Approved Revenue side True up for FY 2009-10 (Rs. Crore).....	80
Table 45: Controllable and Uncontrollable factors proposed by MSPGCL.....	80
Table 46: Sharing of gains and losses for FY 2009-10 (Rs. Crore) .....	82
Table 47: Summary of Gas price and Calorific Value for FY 2010-11 .....	85
Table 48: Availability for FY 2010-11 (Old Stations) (%) .....	90
Table 49: Plant Load Factor for FY 2010-11 (%) (Old Stations).....	91
Table 50: Auxiliary Consumption for FY 2010-11 (%) (Old Stations).....	91
Table 51: Station Heat rate for FY 2010-11 (Old Units).....	92



Table 52: Transit Loss for FY 2010-11 (Old Units).....	93
Table 53: Secondary Fuel Oil Consumption for FY 2010-11(Old Units).....	93
Table 54: Gross generation for FY 2010-11 (Old Units) (MU) .....	94
Table 55: Fuel Cost of Bhusawal Thermal Power Station for FY 2010-11 (Rs. Crore) .....	94
Table 56: Fuel Cost of Chandarpur Thermal Power Station for FY 2010-11 (Rs. Crore) .....	98
Table 57: Fuel Cost of Koradi Thermal Power Station for FY 2010-11 (Rs. Crore).....	100
Table 58: Fuel Cost of Parli Thermal Power Station for FY 2010-11 (Rs. Crore).....	103
Table 59: Fuel Cost of Paras Thermal Power Station for FY 2010-11 (Rs. Crore) .....	105
Table 60: Fuel Cost of Nasik Thermal Power Station for FY 2010-11 (Rs. Crore).....	106
Table 61: Fuel Cost of Uran Thermal Power Station for FY 2010-11 (Rs. Crore) .....	108
Table 62: Fuel Cost of Khaparkheda Thermal Power Station for FY 2010-11 (Rs. Crore).....	109
Table 63: Capitalization for FY 2010-11 (Rs. Crore) .....	112
Table 64: O&M Expense for FY 2010-11 .....	113
Table 65: Depreciation and AAD as submitted by MSPGCL for FY 2010-11 (Rs. Crore).....	114
Table 66: Depreciation and ADD for FY 2010-11 (Old Units) (Rs. Crore).....	116
Table 67: Interest on working Capital as submitted by MSPGCL.....	116
Table 68: Station wise IoWC for FY 2010-11 (Rs. Crore) .....	117
Table 69: Interest and Finance Charges as submitted by MSPGCL for FY 2010-11 (Rs. Crore) .....	118
Table 70: Interest and Finance Charges for FY 2010-11 (Rs. Crore) .....	119
Table 71; Equity Contribution due to Vintage Units (Rs. Crore).....	120
Table 72: RoE for Existing Stations (Rs. Crore).....	120
Table 73: RoE for FY 2010-11 (Rs. Crore).....	120
Table 74: Tax payable by MSPGCL (Rs. Crore) for FY 2010-11 .....	121
Table 75: Summary for ARR for FY 2010-11 .....	122
Table 76: Technical Parameters for Koyna Complex .....	122
Table 77: Technical Parameters for Small Hydro Stations .....	123

Table 78: Differential Tariff for Hydro Stations .....	124
Table 79: Revised Project Cost of Paras Unit 3 and Parli Unit 6 (Rs. Crore).....	126
Table 80: Capital Cost of Paras Unit 3 and Parli Unit 6 (Rs. Crore).....	126
Table 81: Performance Parameters submitted by MSPGCL and approved by Commission for FY 2009-10.....	129
Table 82: Fuel Price Approved for FY 2009-10 .....	130
Table 83: Fuel cost of Paras Unit 3 for FY 2009-10 .....	130
Table 84: Fuel cost of Parli Unit 6 for FY 2009-10 .....	131
Table 85: Other Variable Charges for FY 2009-10 for Paras Unit 3 and Parli Unit 6 (Rs. Crore) ....	133
Table 86: Total Variable Charges as Approved by the Commission (Rs. Crore) .....	134
Table 87: O&M cost submitted by MSPGCL .....	135
Table 88: O&M expenses Trued-up for FY 2009-10 (Rs. Crore).....	136
Table 89: Actual Capital Cost (Rs. Crore) as on March 31, 2009.....	136
Table 90: Trued-up Interest Cost and Finance Charges (Rs. Crore) .....	137
Table 91: MSPGCL's submission on Depreciation and Advance against Depreciation (Rs. Crore). 138	
Table 92: Depreciation and Advance against depreciation Trued up for FY 2009-10 (Rs. Crore)....	139
Table 93: Return on Equity (Rs. Crore) .....	140
Table 94: Interest on Working Capital Trued up (Rs. Crore).....	140
Table 95: Reduction in Annual Fixed Charges of Parli Unit 6 and Paras Unit 3 for FY 2009-10 (Rs. Crore) .....	141
Table 96: Revenue considered by MSPGCL in FY 2009-10 (Rs. Crore) .....	141
Table 97: Revenue side True up for FY 2009-10 (Rs. Crore).....	141
Table 98: Summary of Truing up of Paras Unit 3 for FY 2009-10 (Rs Crore) .....	142
Table 99: Summary of Truing up of Parli Unit 6 for FY 2009-10 (Rs Crore) .....	143
Table 100: Performance Parameters for MSPGCL for FY 2010-11 .....	146
Table 101: Auxiliary Consumption for FY 2010-11 .....	147
Table 102: Station Heat Rate (kCal/kWh) for FY 2010-11.....	149

Table 103: Specific Oil Consumption (ml/kWh) for FY 2010-11 .....	149
Table 104: Approved Gross and Net Generation (MU) for Paras Unit 3 and Parli Unit No. 6.....	150
Table 105: Fuel Cost of Paras Unit 3 for FY 2010-11 .....	151
Table 106: Fuel cost of Parli Unit 6 for FY 2010-11 .....	152
Table 107: Fuel cost Approved for Parli Unit 6 and Paras Unit 3 for FY 2010-11 (Rs. Crore).....	154
Table 108: O&M expenses as submitted by MSPGCL for Paras Unit 3 & Parli Unit 6 for FY 2010-11 (Rs. Crore).....	154
Table 109: O&M expenses approved by Commission for FY 2010-11(Rs. Crore).....	155
Table 110: Depreciation and AAD approved by Commission for FY 2010-11 .....	156
Table 111: Interest on Long Term Loans and Finance Charges (Rs. Crore).....	157
Table 112: Interest on Working Capital for FY 2010-11 (Rs. Crore) .....	158
Table 113: Return on Equity as submitted by MSPGCL (Rs. Crore) .....	158
Table 114: Return on Equity for FY 2010-11 (Rs. Crore) .....	159
Table 115: Income Tax as submitted by MSPGCL for FY 2010-11 (Rs. Crore).....	159
Table 116: Income Tax approved by Commission for FY 2010-11 (Rs. Crore).....	159
Table 117: Summary of Annual Performance Review of Paras Unit 3 for FY 2010-11 (Rs. Crore). 160	
Table 118: Summary of Annual Performance Review of Parli Unit 3 for FY 2010-11 (Rs. Crore).. 160	

## **List of Abbreviations**

AAD	Advance Against Depreciation
AOH	Annual Overhaul
APR	Annual Performance Review
ATE	Appellate Tribunal for Electricity
A&G	Administrative and General
ARR	Aggregate Revenue Requirement
APH	Air Pre Heater
BHEL	Bharat Heavy Electrical Ltd.
Capex	Capital Expenditure
CPI	Consumer Price Index
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
Cu.m	Cubic meter
CV	Calorific Value
COD	Commercial Operation Date
CPRI	Central Power Research Institute
DPR	Detailed Project Report
EA 2003	Electricity Act, 2003
FAC	Fuel Adjustment Cost
FY	Financial Year
GAAP	Generally Accepted Accounting Principles
GCV	Gross Calorific Value
GFA	Gross Fixed Assets
GOM	Government of Maharashtra
GOMWRD	Government of Maharashtra-Water Resource Department
ID	Induced draft
ITAT	Income Tax Appellate Tribunal
ICAI	Institute of Chartered Accountants of India
IWC	Interest on Working Capital

Kcal	kilo calories
kW	kilo Watt
kWh	kilowatt hour
LD	Liquidity Damages
MCM	Million Cubic Meter
MMSCMD	Million Metric Standard Cubic Meters per Day
MERC	Maharashtra Electricity Regulatory Commission
MSEB	Maharashtra State Electricity Board
MSETCL	Maharashtra State Electricity Transmission Company Limited
MSLDC	Maharashtra State Load Dispatch Centre
MSPGCL	Maharashtra State Power Generation Company Limited
MT	Metric Tonnes
MU	Million Units
MW	Mega Watt
MYT	Multi Year Tariff
OEM	Original Equipment Manufacturer
O&M	Operations and Maintenance
PLF	Plant Load Factor
PLR	Prime Lending Rate
PPA	Power Purchase Agreement
R&M	Repair and Maintenance
RH	Re-heater
RLNG	Re-gasified Liquefied Natural Gas
SFOC	Secondary Fuel Oil Consumption
SH	Super Heater
SHPs	Small Hydro Plants
SHR	Station Heat Rate
TPS	Thermal Power Station
TVS	Technical Validation Session
WPI	Wholesale Price Index

## **1 BACKGROUND AND BRIEF HISTORY**

### **1.1 Background**

1.1.1 Maharashtra State Power Generation Company Limited (“MSPGCL” or “Mahagenco”) is a Company formed under the Government of Maharashtra General Resolution No. ELA-1003/P.K.8588/Bhag-2/Urja-5 dated January 24, 2005 with effect from June 6, 2005 according to the provisions envisaged in Part XIII of the Electricity Act, 2003 (“EA 2003”). MSPGCL is a registered Company under the Companies Act, 1956.

1.1.2 The Provisional Transfer Scheme was notified under Section 131(5)(g) of the EA 2003 on June 6, 2005 to give effect to the re-organisation of the Maharashtra State Electricity Board (MSEB) into the following four successor companies, namely,

- MSEB Holding Company Ltd.,
- Maharashtra State Power Generation Company Ltd.,
- Maharashtra State Electricity Transmission Company Ltd., and
- Maharashtra State Electricity Distribution Company Ltd.

1.1.3 The present Petition has been filed by MSPGCL to seek approval of Truing up for FY 2009-10 and APR for FY 2010-11. The Petition has been filed under the MERC (Terms and Conditions of Tariff) Regulations, 2005. The background leading to the filing of the present Petition is discussed below.

### **1.2 Commission’s Order on ARR and Tariff Petition for FY 2005-06 and FY 2006-07**

1.2.1 The Commission issued the Order on the ARR Petition of MSPGCL for FY 2005-06 and ARR and Tariff Petition of MSPGCL for FY 2006-07 in Case No. 48 of 2005 on September 7, 2006.

### **1.3 Review Petition on Tariff Order for FY 2006-07**

1.3.1 MSPGCL filed a Review Petition (numbered as Case No. 34 of 2006) against the above said Commission’s Order. The Commission disposed of the Review Petition vide Order dated December 7, 2006.

**1.4 Commission's Order on MYT Petition of MSPGCL for FY 2007-08 To FY 2009-10**

1.4.1 The Commission issued the MYT Order (Case No. 68 of 2006) for MSPGCL for the first Control Period, i.e., FY 2007-08 to FY 2009-10, on April 25, 2007, which came into effect from April 25, 2007.

**1.5 Commission's Order on Truing up for FY 2005-06, FY 2006-07 and FY 2007-08 and Provisional Truing up for FY 2008-09**

1.5.1 The Commission issued an Order on Truing up for FY 2005-06, FY 2006-07 and FY 2007-08 based upon Hon'ble Appellate Tribunal's Judgment in Appeal No. 86 and 87 of 2007 and CPRI Report and Provisional Truing up for FY 2008-09 on March 05, 2010.

**1.6 Commission's Order on Truing up for FY 2008-09, Annual Performance Review for FY 2009-10 and determination of Tariff for FY 2010-11**

1.6.1 The Commission issued an Order (Case No. 102 of 2009) for MSPGCL for Truing up for FY 2008-09, Annual Performance Review for FY 2009-10 and determination of Tariff for FY 2010-11 which came into effect from September 01, 2010.

**1.7 Petition for Final True up For FY 2009-10 and Annual Performance Review for FY 2010-11**

1.7.1 MSPGCL submitted a Petition for True up for FY 2009-10 and Annual Performance Review (APR) for FY 2010-11 on July 25, 2011, based on actual audited expenditure for FY 2009-10 and actual expenditure for FY 2010-11. The prayers made are as follows:

"

- a) *Admit this Petition.*
- b) *Grant an expeditious hearing of this petition.*

- c) *Allow true-up of old stations for 2009-10 based on the audited accounts and normative parameters as applicable for various heads of expenditures without prejudice to the appeals preferred by this Appellant in the previous APR Order including passing any interim Order in these regards.*
- d) *Allow final true-up for 2009-10 for Paras Unit 3 and Parli Unit 6 based on the capital cost to be finally approved by the Hon'ble Commission as per the directives of the ATE in case 72 of 2010 and 99 of 2010.*
- e) *Approve the APR for 2010-11 to the extent claimed by MSPGCL in accordance with the submissions and rationale given in the Petition.*
- f) *Allow the Petitioner to recover the true-up amount on the date of the Order.*
- g) *Condone any shortcomings/deficiencies and allow MSPGCL to submit additional information/data at a later stage as may be required*
- h) *Provide the workable excel model used by the Hon'ble Commission for approval of tariff of the Petitioner.”*

## **1.8 Admission of the Current Petition and Public Hearing Process**

- 1.8.1 The Commission held the first Technical Validation Session (TVS) on August 16, 2011 in regard to the said Petition for Truing up for FY 2009-10 and Annual Performance Review for FY 2010-11. The data gaps and information requirements in regard to the Petition were discussed in the TVS. Certain further queries were raised by the Commission and MSPGCL was directed to respond to the said queries.
- 1.8.2 The Commission held the second Technical Validation Session (TVS) on September 2, 2011 in regard to the said Petition. During the second TVS, the Commission directed the Petitioner to submit the revised Petition based on the data gaps and information sought by the Commission. The Commission also provided the draft template of the Public Notices for issuance in the newspaper. On September 6, 2011, the Commission received the Revised Petition from MSPGCL and the same was admitted on September 07, 2011.



- 1.8.3 On September 10, 2011, Public Notice detailing out the summary of the Petition was published in the daily newspapers viz Business Standard (English), Free Press Journal (English) Pudhari Newspaper (Marathi) and Punyanagari (Marathi) inviting suggestions and objections from the stakeholders.
- 1.8.4 The copies of MSPGCL's Petition and its Executive Summary were made available for inspection/purchase by members of the public at MSPGCL's offices and on MSPGCL's website (www.mahagenco.in). The copy of the Public Notice and the Executive Summary of the Petition were also uploaded on the website of the Commission (www.mercindia.org.in) in downloadable format. It was instructed in the Public Notice that the suggestions and objections, either in English or Marathi, may be filed in the form of affidavit along with proof of service on MSPGCL.
- 1.8.5 The Commission received written suggestions and objections from the Consumer Representatives. The Commission held Public Hearings at Amravati, Nagpur, Nashik, Pune, Navi Mumbai and Aurangabad during the period from October 7 to October 25, 2011, as per the following schedule: List of people attending the Public Hearing is given at Appendix 1.

**Table 1 : Venue of Public Hearings**

<b>Sr.No.</b>	<b>Place /Venue of Public Hearing</b>	<b>Date of Hearing</b>
1	Amravati Hall No.1,Divisional Commissioner's Office Camp, Amravati, District – Amravati	Friday, October 7, 2011
2	Nagpur Vanamati Hall, V.I.P. Road, Dharampeth, Nagpur, District-Nagpur	Saturday, October 8, 2011
3	Nashik Niyojan Bhavan, Collector Office Campus, Old Agra Road, Nasik	Saturday, October 15, 2011
4	Pune Council Hall, Office of The Divisional Commissioner, Pune District- Pune	Wednesday, October 19, 2011
5	Navi Mumbai, Conference Hall, 7th Floor, CIDCO Bhavan, CBD, Belapur, Navi Mumbai	Sunday, October 23, 2011
6	Aurangabad Meeting Hall, Office of the Divisional Commissioner, Aurangabad, District- Aurangabad	Tuesday, October 25, 2011

1.8.6 The Commission has ensured that due process as stipulated by the EA 2003 to ensure transparency and public participation have been followed and adequate opportunity has been given to all the persons concerned to file their say in the matter.

1.8.7 This Order deals with the Petition submitted by MSPGCL for Truing up for FY 2009-10 and APR for FY 2010-11. Various suggestions and objections that were raised on the said petition by MSPGCL after issuing the Public Notice, both in writing as well as during the Public Hearing, along with MSPGCL's response and the Commission's rulings have been detailed in Section 2 of this Order.

## **1.9 Organization of this Order**

1.9.1 This Order is organized in the following Seven Sections:

- **Section 1** of the Order provides a brief background of the process undertaken by the Commission. For the sake of convenience, a list of abbreviations with their expanded forms has been included.
- **Section 2** of the Order lists out various suggestions/ objections raised by the objectors in writing as well as during the Public Hearing before the Commission. These suggestions and objections have been summarized therein, followed by response of MSPGCL and rulings of the Commission on each of the issues.
- **Section 3** of the Order provides details of implementation of Hon'ble ATE's Judgment dated August 04, 2011 in Appeal No 199 of 2010.
- **Section 4** of the Order provides details of the Commission's analysis and ruling on MSPGCL's proposal for Truing up of expenses and revenue for FY 2009-10 for the old Units.
- **Section 5** of the Order provides details of the Commission's analysis and ruling on MSPGCL's proposal for Annual Performance Review of expenses for FY 2010-11 for the old Units.
- **Section 6** of the Order provides details of the True up for FY 2009-10 for Paras Unit 3 and Parli Unit 6.

- **Section 7** of the Order provides details of the Annual Performance Review for FY 2010-11 for Paras Unit 3 and Parli Unit 6.

## **2 BRIEF OUTLINE OF SUGGESTION/ OBJECTIONS RAISED, RESPONSE FROM MSPGCL AND THE COMMISSION'S VIEW**

### **2.1 Reactive energy charge**

#### **Suggestions/ Objections**

- 2.1.1 Shri. Ponrathnam, the Consumer Representative, highlighted the Commission's ruling in Order dated September 12, 2010, in Case No 102 of 2009 and the Hon'ble ATE's ruling in judgment dated April 27, 2011 in Appeal No. 191 of 2009 on the issue of Reactive Energy Charge and requested the Commission not to approve extra amount for reactive energy.

#### **MSPGCL's Response**

- 2.1.2 MSPGCL requested the Commission to structure a mechanism to provide adequate compensation to the utility for providing reactive energy.

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

- 2.1.3 In this regard, the Commission rules that there is no additional expenditure incurred by MSPGCL towards injection of reactive energy and hence it is not entitled to be compensated. The Commission views that all the expenses prudently incurred by MSPGCL are recovered through the tariffs, irrespective of whether or not MSPGCL is generating any active energy at the time of injecting reactive energy into the grid.

### **2.2 Power Purchase Agreement**

#### **Suggestions/ Objections**

- 2.2.1 Shri. Ponrathnam expressed that Power Purchase Agreement (PPA) should be made compulsory in the time of shortage. The terms and conditions in the PPA should be in favour of Distribution companies so that the benefits, if any, are passed on to the consumers. The PPA should clearly specify that the price of fuel adjustment charges will be passed on to the consumers. Therefore, the process of levying the Fuel Adjustment Charges (FAC) needs to be transparent to the consumers.

### **MSPGCL's Response**

- 2.2.2 MSPGCL submitted that it had already entered into a PPA for sale of the units considered in this Petition. The commercial terms have been agreed upon between the Distribution Company and MSPGCL as per the standard industry practices.

### **Commission's Ruling**

- 2.2.3 As regards the issue of FAC computations, the Commission observes that the FAC computations are being carried out by Utilities and these are vetted on post-facto basis by the Commission in accordance with the MERC (Terms and Conditions of Tariff) Regulations, 2005. It is also observed that the PPA between MSPGCL and MSEDCL has been approved by the Commission.

## **2.3 Uninterrupted Power Supply**

### **Suggestions/ Objections**

- 2.3.1 Shri. Ponrathnam highlighted that it is mandatory for the Distribution Companies to provide uninterrupted power supply as per EA, 2003. Uninterrupted power supply could be achieved only with proper planning. Unscheduled outages which occur due to plant break downs are indicative of deficiencies in operation by the generating Company. The incapability of the generating company to provide the committed power output is also a deficiency of the generator for which the concerned personnel need to be penalized. It is the prime duty of the generating company to ensure adequacy of resources (men, material and service) to run the plant at its maximum capacity. Non-availability of coal/gas neither comes under natural calamity nor does it come under force majeure conditions.

### **MSPGCL's Response**

2.3.2 MSPGCL submitted that it has always endeavored to maximize its generation output irrespective of the fact that every unit of energy generated at a higher Station Heat Rate than the specified norms results into loss and thereby reduces the effective Return on Equity (ROE). So far as penalization for frequent unplanned outages is concerned, MSPGCL is already getting disallowances in the fuel cost incurred and recovery of fixed costs under the MERC (Terms and Conditions of Tariff) Regulations, 2005.

### **Commission's Ruling**

2.3.3 The Commission observes that it has specified target Availability for recovery of the Fixed Charges. Any shortfall from the target Availability results in proportionate decrease in the Fixed Charges of MSPGCL. Therefore, unplanned outage is a condition which needs to be addressed appropriately and impact/disallowance of inefficiency on such matters is taken care through Regulatory provisions of disallowance of Fixed Charge as explained above.

## **2.4 Theft, Pilferage, Damage of coal supply and Increase in Coal Prices**

### **Suggestions/ Objections**

2.4.1 Maharashtra Veej Grahak Sangathana, Shri. Ponrathnam and Shri. Shrikrishna Shinde highlighted that the issue regarding Transit Losses/ loss in calorific value / increase in moisture of coal is the responsibility of MSPGCL and it can prevent this problem with due care rather than penalizing innocent consumers.

2.4.2 Dr. Ashok Pendse highlighted the urgent need to find out a permanent solution for wet, muddy and poor quality of coal.

2.4.3 Shri. Kawish Dange stated that the coal prices are being repeatedly increased by domestic coal companies. The procurement of imported coal quantities to MSPGCL has also been increasing every year. In the absence of any regulatory or pooling mechanism to moderate the effect of such increases, the consumers of Maharashtra are facing steep tariff rise. Therefore it is necessary to devise a mechanism to pool the costs of the domestic and imported coal and moderate the effects of distance of Thermal Power Plants from coal mines through a regulatory mechanism, so that tariff in Maharashtra does not rise in a lop-sided manner. The following table indicates the increase in tariff due to hike in prices of coal.

**Table 2: Increase in Tariff due to increase in Coal Price**

<b>Sr. No.</b>	<b>Particulars</b>	<b>FY 2005-06</b>	<b>FY 2006-07</b>	<b>FY 2007-08</b>	<b>FY 2008-09</b>	<b>FY 2009-10</b>	<b>FY 2010-11</b>
1	Tariff Rs/kWh	1.43	1.58	1.65	1.71	1.96	2.48
2	% Increase	base	10.22	4.49	4.02	14.47	26.23

**MSPGCL's Response**

2.4.4 With reference to Transit Losses, MSPGCL submitted that it has little control over the Transit Losses. Although steps are being taken to control such losses, it is however difficult to have complete control over the actions of the non-regulated entities such as Railways. However, MSPGCL is doing all possible efforts within its purview to contain such losses.

2.4.5 With reference to rising coal prices, MSPGCL submitted that it utilizes the imported coal based on capability of the machines and overall perception of possible improvements in the technical parameters. On the issue of the price of coal, MSPGCL submitted that the same are fixed by M/s Coal India Limited in case of domestic coal and are indexed in case of imported coal.

**Commission's Ruling**

2.4.6 The Commission has addressed the issue of coal prices in Section 4 of the Order while determining the Energy Charges.

## **2.5 Controllable and Uncontrollable expenses**

### **Suggestions/ Objections**

2.5.1 Shri. Ponrathnam highlighted that MSPGCL has considered fuel cost, fuel quality (calorific value), interest, depreciation and advance against depreciation as “uncontrollable”. These items should be under the control of MSPGCL.

### **MSPGCL’s Response**

2.5.2 The calorific value of fuel is “uncontrollable”. The same is considered by the Commission which allows the utility to recover the resulting change in the variable cost of energy due to change in calorific value and price of coal fuel.

2.5.3 Interest rate depends on the market factors and checks and balances imposed by RBI to control inflation. The same are not under control of the utility and are classified as “uncontrollable” by the Commission in the MERC (Terms and Conditions of Tariff) Regulations, 2005.

2.5.4 Depreciation and AAD are “uncontrollable” since the amount of depreciation is determined using the normative percentages. In case of large capital expenditure carried out in a particular year, the amount of depreciation may vary as per the norms.

### **Commission’s Ruling**

2.5.5 The Commission has addressed the issue of “controllable and uncontrollable” expenses in Section 4 of the Order while calculating the gains and losses for the FY 2009-10 as per Regulation 19 of the MERC (Terms and Conditions of Tariff) Regulations, 2005.

## **2.6 Plant Load Factor and Availability**

### **Suggestions/ Objections**



- 2.6.1 Shri. Kawish Dange (SEA) stated that the Commission has considered 80% PLF for the purpose of projecting the gross generation, however, the actual PLF is significantly lower than the normative PLF due to various reasons. The factors responsible for the low PLF are shortage in supply of coal, deferred maintenance due to adverse demand-supply position, forced backing-down of the Units on account of SLDC's directives and/or non-availability of transmission lines due to technical issues. M/s Tata Motors Limited also highlighted the poor performance of MSPGCL's stations in terms of lower PLF than NTPC.
- 2.6.2 Maharashtra Rajya Veej Tantrik Kamgar Sanghatna and Shri. Ponrathnam highlighted that MSPGCL's low plant load factor is a serious issue and requires infrastructure improvement on priority basis. Dr. Ashok Pendse highlighted that the Availability of MSPGCL's stations has deteriorated significantly in the last two years as compared to that of previous 5 years, i.e. from 2004 to 2009.

#### **MSPGCL's Response**

- 2.6.3 MSPGCL stated that as far as the implementation of R&M measures is concerned; It is already in the process of expediting implementation of CPRI recommended schemes. A considerate view by the Commission may result into setting up of realistic PLF targets, thereby ensuring better management of power by the Discom.
- 2.6.4 With reference to Availability, MSPGCL submitted that in FY 2005-06 and FY 2006-07, the representation of Availability was done as per CEA definition. The said definition did not account for the loadability of the Units. Therefore, in those years, there were differences in availability and PLF of the Units with the former being higher than the PLF by the loadability factor. On the contrary, from FY 2007-08 onwards, the representation was changed as per MERC (Terms and Conditions of Tariff) Regulations, 2005. In the said Regulations, the Availability factor was inclusive of the loadability factor since the Regulations require the generating company to quote the availability based on the capacity to deliver power. Due to the said change, the "Availability" and "PLF" of the Units have become identical since FY 2007-08.

2.6.5 So far as the Availability in the last two years is concerned, MSPGCL submitted that reduction in PLF/Availability and consequential increase in SHR is largely dependent on two important parameters viz. quantity and quality of coal. Apart from that, water shortage in case of Chandrapur in FY 2010-11 had been an unusual phenomenon leading to shortfall in PLF/generation. The overall station wise impact of reduction in PLF on account of the aforesaid parameters in FY 2010-11 is provided in the table below:

**Table 3: Loss in PLF**

Stations	Parameter	Water Shortage	Coal Shortage	Poor Quality Coal	Wet Coal Problem	Total MUs Lost
Bhusawal	MU Lost	-	2	391	219	612
	%	0%	0%	10%	5%	
Chandrapur	MU Lost	3,682	-	1,975	1,187	6,844
	%	18%	0%	10%	6%	
Khaperkheda	MU Lost	-	25.00	440	33	498
	%	0%	0%	6%	0%	
Koradi	MU Lost	-	11	1,111	457	1,579
	%	0%	0%	14%	6%	
Nasik	MU Lost	-	-	732	494	1,226
	%	0%	0%	10%	6%	
Paras	MU Lost	-	2	-	18	20
	%	0%	0%	3%	6%	
Parli	MU Lost	-	-	476	220	696
	%	0%	0%	7%	4%	
<b>Total Loss in Generation</b>						<b>11,475</b>

2.6.6 MSPGCL submitted that its coal requirements are met primarily through WCL (50%), MCL (20%), SECL (13%), SCCL (5%), imported coal (7%) and others (5%). Coal is received by MSPGCL as per the notified grade declared by coal companies. However, impurity gets mixed in coal in opencast mining leading to degradation of coal and hence resulting into loss of generation. The Boilers had been designed for average calorific value (CV) of 4400 kCal/Kg 20 years ago; however, the CV of the coal presently received by the stations is barely 3000-3200 kCal/kg.

- 2.6.7 MSPGCL submitted that it has taken up the issues of shortfall in supply of coal as compared to the quantity agreed to the Fuel Supply Agreement (FSA) as well as the issue of the quality of coal. The relevant clause in FSA with regard to sampling method suggests that only 10% quantity of coal would be sampled. Also the samples are taken from only 25 cm area from top of the wagon. On account of such issues noticed by MSPGCL, joint sampling through Augur machines at the loading end of the raw coal lifted from mines by washery operators has been insisted upon by MSPGCL.
- 2.6.8 In order to bridge the gap between Boiler design GCV and raw coal GCV and to increase PLF, MSPGCL used beneficiated (washed) coal (40% of raw coal). But recently 70% washed coal rakes got rejected on account of the coal carried by the rakes not meeting the required parameters (Expected CV of 4200 CV). Further, to improve loadability above 70%, high grade imported coal is required to be blended with raw coal. At present MSPGCL has put up orders to purchase 3.35 MMT of imported coal.
- 2.6.9 MSPGCL submitted that it is making all possible efforts to get the desired quality of coal from the domestic collieries.

### **Commission's Ruling**

- 2.6.10 The Commission feels that in case the Commercial terms of any contracts such as Coal supply contract are not as per Technical, Commercial or Legal requirement, the Petitioner is duty bound to set matters right by taking proactive actions against the agencies responsible for the same. The Commission has addressed the issue of Availability and Plant Load Factor (PLF) in Section 4 of the Order while finalizing the technical performance of the MSPGCL for the FY 2009-10.

## **2.7 Auxiliary Consumption and Specific Oil Consumption**

### **Suggestions/ Objections**

- 2.7.1 Shri. Ponrathnam highlighted that MSPGCL should be held responsible for ensuring Auxiliary Consumption as well for specific oil consumption as per set norms.

### **MSPGCL's Response**

2.7.2 MSPGCL submitted that the tariff of the generating stations is determined as per the norms itself.

### **Commission's Ruling**

2.7.3 The Commission observes from CPRI reports that obsolescence and defects in critical instrumentation systems and degeneration of various equipments are responsible for increase in secondary fuel oil consumption and auxiliary consumption at the thermal stations of MSPGCL. The Commission observes that the "immediate" and intermediate stage measures required to be taken by the Petitioner have already been identified by CPRI in its reports. Delays in implementation of these measures may have caused further deterioration.

2.7.4 The Commission has addressed the issues related to Auxiliary Consumption and Specific Oil Consumption in Section 4 of the Order while finalizing the technical performance of the MSPGCL for the FY 2009-10.

### **2.8 Difference in PLF of Nasik and Bhusawal Power Plants**

#### **Suggestions/ Objections**

2.8.1 Dr. Ashok Pendse highlighted that both Bhusawal and Nasik Power plants, being 33 years old, have huge difference in PLF i.e. 62% and 71 % respectively.

### **MSPGCL's Response**

2.8.2 MSPGCL submitted that the comparison made by the consumer is not representative of the overall scenario for both the stations. In FY 2009-10, the PLF of Bhusawal TPS had been marginally higher than that of Nasik TPS. On the contrary, in the FY 2010-11, PLF of Nasik TPS was higher in comparison to that of Bhusawal TPS.

**Table 4: Availability and PLF of Bhusawal TPS**

Particulars	Units	FY 2009-10	FY 2010-11
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(Bhusawal)		Approved	Actuals	Approved	Apr-15July (Actual)	16July-March (Actual)	Apr-Mar
Availability	%	80	77.22	80	66.1	61.25	62.7
PLF	%	80	77.22	80	66.1	61.25	62.7

**Table 5: Availability and PLF of Nasik TPS**

Particulars (Nasik)	Units	FY 2009-10		FY 2010-11	
		Approved	Actuals	Approved	Apr-March (Actual)
Installed Capacity	MW	880	880	880	880
Availability	%	78.58%	72.82	78.58%	71.03
PLF	%	78.58%	72.82	78.58%	71.03

2.8.3 Apart from the above examples, a comparison of the PLF trend of both the stations also indicates similar results. The same is illustrated in the table below for reference:

**Table 6: PLF of Bhusawal and Nasik TPS from FY 2006 to FY 2010**

Station	FY 2005-06	FY 2006-07	FY 2007-08	FY 2008-09	FY 2009-10
Bhusawal	80.75%	76.34%	75.84%	73.78%	77.72%
Nasik	72.17%	81.83%	82.40%	73.92%	72.82%

2.8.4 MSPGCL submitted that performance of stations depends on the quality of domestic coal received by the stations and the period of usage of imported coal. In the FY 2010-11, the overall consumption of imported coal in Nasik TPS was significantly higher than that of Bhusawal TPS. The same is also depicted in the table below:

2.8.5 Usage of imported coal in the station in FY 2010-11

**Table 7: Percentage of Imported Coal used in Bhusawal and Nasik**

Stations	FY 2010-11	
	Imported coal (MT)	Imported coal as % of total coal
Bhusawal	223991	10.2%
Nasik	582680	14.2%

### Commission's Ruling

2.8.6 The Commission has addressed the issue of Availability and Plant Load Factor (PLF) for the station Bhusawal and Nasik in Section 4 and Section 5 of the Order while approving the technical performance of the MSPGCL for the FY 2009-10 and FY 2010-11.

**2.9 Lack of Adherence to CPRI Recommendations:**

**Suggestions/ Objections**

2.9.1 Dr. Ashok Pendse stated that one of the CPRI recommendations pertaining to manpower training, work place improvement, changes in methods etc., was not implemented by MSPGCL despite the fact that it needed no major capital expenditure. Prayas Energy Group and Maharashtra Veej Grahak Sanghatana also highlighted that the performance norms of Station Heat Rate and PLF in FY 2009-10 and FY 2010-11, which were based on CPRI study, were not adhered to.

**MSPGCL’s Response**

2.9.2 MSPGCL submitted that the CPRI recommendations comprise a mix of monitoring, measurement and performance related schemes bringing in overall transparency and operational improvement in the plant operations.

2.9.3 The CPRI recommendations were classified by MSPGCL as financial and non-financial schemes. MSPGCL had further segregated the financial schemes into O&M schemes and Capital Expenditure Schemes as shown in the table below:

**Table 8: Classification of CPRI recommended immediate Measures**

Station No	No of Non-Financial schemes	No of Financial Schemes			Fund requirement for immediate measures (Rs. Crore)
		O&M Schemes	Capex Schemes	Total	
Koradi	102	147	48	195	26.62
Khaparkheda	61	105	81	186	10.99

Chandrapur	168	26	49	75	84.04
Nasik	153	62	55	117	60.23
Bhusawal	196	12	97	109	36.09
Paras	128	72	53	125	9.15
Parli	126	8	43	51	64.53
Total	934	432	426	858	291.65

2.9.4 So far as the implementation of the aforesaid recommendations is concerned, MSPGCL submitted that it had already implemented bulk of the non-financial recommendations. However, the real improvement in technical performance can only be expected once the capital expenditure schemes are implemented. This point was appreciated by the Commission in the first MYT Order wherein degradation factor of 0.2% in SHR on a year to year basis was considered.

2.9.5 MSPGCL submitted that speedy implementation of schemes is hindered by the factors like lead time required for procurement of spare parts, availability of “shut down” of the Unit and repair and replacement of some equipment which are in service.

2.9.6 MSPGCL further submitted that it is desirable to undertake due-diligence in incurring the capital expenditure based on the price bids received from the market. Therefore, the extent of capital expenditure already implemented during the financial year and the reasons for delay in implementing the remaining capex need to be considered by the Commission during the True-up process rather than disallowing the cost.

### **Commission’s Ruling**

2.9.7 The Commission has addressed the issue related to implementation of CPRI recommendation in Section 4 of the Order while finalizing the technical performance of the MSPGCL for FY 2009-10.

## **2.10 Appeals before the Hon’ble ATE by MSPGCL**

### **Suggestions/ Objections**

2.10.1 Shri Kawish Dange, Representative of Subordinate Engineers' Association(SEA), Amravati stated that most of the Orders for Annual Revenue Requirement issued by the Commission are challenged before the Hon'ble ATE and consequently the decisions in the Orders of the Commission are required to be altered as per the Judgments/directions of the Hon'ble ATE. Frequent appeals by MSPGCL before the Hon'ble ATE are not desirable and appropriate remedy is requested by the Objector to reduce the chances/ opportunities of appeal.

### **MSPGCL's Response**

2.10.2 MSPGCL submitted that the Electricity Act, 2003 provides for the following:

*"Section 110 (Establishment of Appellate Tribunal):*

*The Central Government shall, by notification, establish an Appellate Tribunal to be known as the Appellate Tribunal for Electricity to hear appeals against the Orders of the adjudicating officer or the Appropriate Commission under this Act.*

*Section 111. (Appeal to Appellate Tribunal)*

*(1) Any person aggrieved by an Order made by an adjudicating officer under this Act (except under section 127) or an Order made by the Appropriate Commission under this Act may prefer an appeal to the Appellate Tribunal for Electricity:"*

2.10.3 MSPGCL submitted that it has been approaching the Hon'ble ATE as per the provisions of the EA 2003 on being aggrieved by the Tariff Orders. Due to the time delays in the hearings, some of the issues often remain sub-judice even while subsequent tariff determination is under process. However, it needs to be appreciated that the Hon'ble ATE has considered the rationale for technical parameters and various expenses and has therefore ruled on a majority of issues in favour of MSPGCL. Due-consideration of such submissions made by MSPGCL during the tariff filing process may reduce the preference of appeals by MSPGCL. However, at the same time, it also needs to be appreciated that consideration of allowance of expenses is a prerogative of the Commission under the prudence check mechanism.

### **Commission's Ruling**



2.10.4 The point raised is of no relevance to the present proceedings. Right of appeal in any case is available to MSPGCL under Section 111 of the 2003 Act.

## **2.11 Lack of Uniformity in fixing Tariffs for Hydro Power Plants**

### **Suggestions/ Objections**

2.11.1 Shri. Kawish Dange (SEA) stated that the Tariff of Hydro Power Station's of MSPGCL is very low as compared to Hydro Power Stations maintained by Dodson which is Rs.3 per unit. Therefore, a revised norm should be applied for fixing tariff of Hydro Power Station's of MSPGCL so that there will be no inequality in fixation of tariff.

**Table 9: Tariff for Hydro Power Stations**

<b>Differential Energy charges for Peak and Non Peak hours for Hydro Power Stations</b>	<b>Rs/kWh</b>
Peak Hours (0900 to 1200 hrs and 1800 to 2200 hrs)	2.00
Non Peak Hours (other than peak hours)	1.65

### **MSPGCL's Response**

2.11.2 MSPGCL requested the Commission to consider the above submissions and allow a higher tariff to the hydro stations operated by the company.

### **Commission's Ruling**

2.11.3 The Commission has addressed the issue related to Tariff of Hydro Power Plant in Section 5 of the Order.

## **2.12 Closure of Old Units**

### **Suggestions/ Objections**

2.12.1 Shri. Kawish Dange (SEA) stated that MSPGCL has closed down the old Units from December, 2010. Considering the gap in demand and supply, it is not desirable to close down any of the generating Units. It is therefore necessary to undertake a review and obtain directives to sell power from the following old power stations on merchant basis to MSEDCL as decided and implemented earlier. Details of the old power stations are given in the table below:

**Table 10: De-rated Capacity and Plant life of Old Units**

<b>Name of Power Station</b>	<b>Date of Commissioning</b>	<b>Total Years</b>	<b>Rated Capacity</b>	<b>PLF</b>
Bhusawal Unit 1	July 17, 1968	41 Years	62.5 MW	67.2 %
Paras Unit 2	October 25, 1967	43 Years	62.5 MW	42.3 %
Parli Unit 1	November 15, 1971	38 Years	30 MW	73.8 %
Parli Unit 2	May 17, 1972	38 Years	30 MW	74.5 %
Koradi Unit 1	June 13, 1974	36 Years	120 MW	39.5 %
Koradi Unit 2	March 24, 1975	35 Years	120 MW	42 %
Koradi Unit 3	March 03, 1976	34 Years	120 MW	31.7 %
Koradi Unit 4	July 22, 1976	33 Years	120 MW	40 %

### **MSPGCL's Response**

2.12.2 MSPGCL submitted that as observed by the Objector, all the Units are quite old and have outlived their useful life of 25 years. Operating such Units within the technical norms prescribed by the Commission had resulted into serious consequences on the financial health of the company. Subsequently, MSPGCL had to close down the said Units.

### **Commission's Ruling**

2.12.3 The decision regarding the closure of old Units lies with the Board of the MSPGCL.

## **2.13 Unsatisfactory Performance by Paras Unit 3 and Parli Unit 6**

### **Suggestions/ Objections**

2.13.1 Shri. Kawish Dange highlighted that the Paras Unit 3 (250 MW) and Parli Unit 6 (250 MW) had been commissioned on March 31, 2008 and November 01, 2007 at the capital cost of Rs.1596.61 Crore and Rs.1511.50 Crore respectively. However on perusal of the paragraph 7.2 and 7.1 of the petition, it was observed that the performance of these power stations was not satisfactory. The veracity must be judged by appointing a committee to assess the reasons canvassed by MSPGCL.

### **MSPGCL's Response**

2.13.2 MSPGCL submitted that the overall performance of the Units is deviating from the normative parameters on account of poor quality of coal. MSPGCL is considering the proposal for laying alternate CHP stream in the Units to mitigate the risks arising out of the failure of a single stream supply. Subsequent to implementation of the said scheme, the availability of the Units will increase substantially and resulting parameters will be within close proximity to the normative parameters.

### **Commission's Ruling**

2.13.3 The Commission has addressed the issue of performance of Paras Unit 3 and Parli Unit 6 in Section 6 and Section 7 of the Order respectively while finalizing the technical performance of the Paras Unit 3 and Parli Unit 6 for FY 2009-10 and FY 2010-11.

## **2.14 Increase in Cost of Generation**

### **Suggestions/ Objections**

2.14.1 Prayas Energy Group stated that the cost of generation is rising due to reduced generation, poor/inadequate planning and non- adherence to performance norms.

### **MSPGCL's Response**

2.14.2 MSPGCL submitted that the tariff of stations is always approved on the basis of normative parameters. In case of increase in actual SHR, the Commission examines the rationale for the same and approves appropriately. So far as the fixed charge is concerned, the Commission has reduced the recovery of fixed charges based on the normative availability of the Stations. MSPGCL submitted that the real cause for increase in generation cost is largely on account of usage of imported coal over the years and the same phenomenon is true for other generators in the State.

### **Commission's Ruling**

2.14.3 The Commission has addressed the issue of increase of cost of generation in Section 4 and Section 5 of this Order.

### **3 IMPLEMENTATION OF THE HON'BLE ATE'S DIRECTION IN APPEAL NO 199 OF 2010:**

#### **3.1 Background**

3.1.1 MSPGCL preferred an Appeal (Appeal No 199 of 2010) before the Hon'ble ATE (Appellate Tribunal for Electricity) challenging the Commission's Order dated September 12, 2010 on Truing up for FY 2008-09, Annual Performance Review (APR) for FY 2009-10 and Annual Revenue Requirement (ARR) and tariff for FY 2010-11.

3.1.2 In the Appeal, MSPGCL had contended on the following issues.

##### **I. Truing up for FY 2008-09:**

- Cost of fuel incorrectly computed
- Disallowance of O&M expenses
- Disapproval of capital expenses for FY 2008-09
- Disallowance of depreciation and AAD in FY 2008-09
- Erroneous disapproval of interest expenses and finance charges in FY 2008-09
- Erroneous disapproval of interest on working capital
- Reduction in annual fixed charges on account of reduction in availability
- Erroneous revenue side Truing up

##### **II. APR FY 2009-10 and Tariff for FY 2010-11**

- Non-consideration of technical performance parameters for 2009-10 and 2010-11
- Error in computation of other variable charges for FY 2010-11
- Computational issue in relation to fuel cost for FY 2010-11
- Erroneous approval of O&M expenses for FY 2009-10 and 2010-11
- Erroneous computation of prior period items
- Improper disallowance of capital expenditure and capitalization
- Error in computing income tax.

## **3.2 Ruling of the Hon'ble ATE**

3.2.1 The Hon'ble ATE's rulings on various aspects raised in MSPGCL's Appeals have been summarized below:

### **3.2.2 Cost of fuel Trued up for FY 2008-09 and computation of fuel cost for FY 2010-11:**

The Hon'ble ATE has ruled that the Commission had correctly taken the Station Heat Rate (SHR) as per the CPRI (Central Power Research Institute) recommendations for FY 2008-09 and FY 2009-10. However, the Hon'ble ATE directed the Commission to reconsider the Station Heat Rate for FY 2010-11, taking into account the reasonable time period required for carrying out the medium term measures for improvement of SHR at the various power plants and re-determine the fuel cost for FY 2010-11

### **3.2.3 Disallowance of O&M expenses in True up of FY 2008-09 and ARR for FY 2010-11:**

On the issue regarding O&M expenses for base year O&M, i.e., FY 2006-07, the Hon'ble ATE observed that the matter had been decided in its judgment dated April 04, 2011 in Appeal no. 191 of 2009 in the matter between MSPGCL and the Commission. For other enhancements in O&M expenses claimed by the appellant due to pay revision, employees benefit, lease rent of office and residential buildings, levy of civil O&M and water Royalty charges etc., the Hon'ble ATE remanded the matter back to the Commission for re-consideration.

### **3.2.4 Capital expenses for FY 2008-09 and for FY 2010-11:**

Regarding disapproval of capital expenses, the Hon'ble ATE held that, the Order of the Commission dated August 17, 2009 cannot be applied retrospectively to FY 2008-09 and FY 2009-10. Accordingly, the Hon'ble ATE directed the Commission to reconsider the expenditure incurred on the non-DPR schemes for FY 2008-09 and FY 2009-10 and allow the capital expenditure after prudence check. Regarding the capitalization for FY 2010-11, the Hon'ble ATE ruled that the MSPGCL was bound by the directions of the Commission to club similar non-DPR schemes and convert into DPR schemes for approval.

- 3.2.5 **Advance against Depreciation (AAD) for FY 2008-09:** Regarding Advance against Depreciation, the Hon'ble ATE ruled that the matter had already been decided by the Hon'ble Tribunal in its judgment dated April 27, 2011 in Appeal no. 191 of 2009 to determine AAD station-wise. Accordingly, this issue was decided in favour of MSPGCL.
- 3.2.6 **Interest expenses and finance charges for FY 2008-09:** In regard to interest expenses, the Hon'ble ATE upheld that the Commission had correctly disallowed the interest expenses on loans for assets not capitalized or works in progress. Accordingly, this issue was decided against MSPGCL.
- 3.2.7 **Non-consideration of technical performance parameters for FY 2009-10 and 2010-11:** With regard to the Availability and Plant Load Factor (PLF) the Hon'ble ATE upheld the decision of the Commission and did not find any infirmity with the Order of the Commission. Accordingly, this issue was decided against MSPGCL.
- 3.2.8 **Reduction in Annual Fixed Charges on account of reduction in Availability for FY 2008-09:** With regard to the reduction of Annual Fixed Charges (AFC) for FY 2008-09, the Hon'ble ATE observed that Income Tax is a part of Annual Fixed Charges according to the Regulations and therefore, in case of actual Plant Availability Factor being lower than the normative Plant Availability Factor, the AFC payable including the income tax will reduce proportionately. Regarding the true up amount for previous years, the same cannot be included in the AFC for the FY 2008-09 and has to be allowed as pass through.
- 3.2.9 **Disapproval of interest on working capital in True up for FY 2008-09:** In regard to the last issue of re-determination of interest on working capital, the Hon'ble ATE upheld that the impact on interest on working capital as a consequence of findings in the said judgment, if any, has to be given effect to by the Commission.

### **3.3 Impact of Judgment of the Hon'ble Appellate Tribunal for Electricity (ATE)**

- 3.3.1 Cost of fuel trued up for FY 2008-09 and computation of fuel cost for FY 2010-11:** With regard to Station Heat Rate (SHR) for FY 2010-11, the Commission has already appointed CPRI to undertake a detailed analysis of the Station Heat Rate, which can be achieved considering the non implementation of short term and mid-term improvement schemes by MSPGCL. The Commission will reconsider the SHR of different Stations as and when the CPRI study report is submitted and accepted by the Commission.
- 3.3.2 Disallowance of O&M expenses in True up of FY 2008-09 and ARR for FY 2010-11:** With regard to the change of the base level O&M expense for the FY 2006-07, the Commission finds no justification for doing so as the base level and the subsequent O&M trajectory was approved by the Commission after considering all the facts placed before the Commission. However, regarding the impact of the pay revision on the Employee expenses the Commission has considered them for the FY 2009-10 and for FY 2010-11 the same will be approved after prudence check based on the Audited Account.
- 3.3.3 Capital expenses for FY 2008-09 and for FY 2010-11:** As per the direction of the Hon'ble ATE the Commission approves the remaining 50% of the Capital Expenditure which was deducted on adhoc basis.
- 3.3.4 Advance Against Depreciation for FY 2008-09:** As per the direction of the Hon'ble ATE the Commission has recomputed the Advance Against Depreciation for the FY 2008-09 and the detail is provided in the table below. The Commission has separately dealt with the Advance Against Depreciation for FY 2009-10 and FY 2010-11 in the final True up for FY 2009-10 (Section 4 of the Order) and Annual Performance Review for FY 2010-11 (Section 5 of the Order).

**Table 11: Depreciation and AAD for FY 2008-09 (Rs. Crore)**

<b>Station</b>	<b>Depreciation and ADD</b>
Bhusawal	13.37
Chandarpur	116.92



Nashik	22.42
Koradi	46.45
Paras	1.33
Parli	12.78
Uran	57.06
Khaparkheda	82.42
Hydro	11.11
Total	363.87

**3.3.5 Disapproval of interest on working capital in True up for FY 2008-09:** With regards to the Interest on Working Capital (IoWC), the Commission has recomputed IoWC based on the direction given by the Hon'ble ATE. The same has been incorporated in the final calculation.

**3.3.6 Reduction in Annual Fixed Charges on account of reduction in availability for FY 2008-09:** With regards to the reduction of Annual Fixed Charges for FY 2008-09, the Commission has recomputed the Annual Fixed Charges based on the direction given by the Hon'ble ATE and the revised Availability report given by the SLDC, the details of which are provided below.

**Table 12: AFC to be disallowed in FY 2008-09**

Particulars	New AFC for FY 2009-10	Actual Availability	New Availability	Normative Availability	New Reduced AFC	New AFC to be disallowed
	Rs. Crore	(%)	(%)	(%)	Rs. Crore	Rs. Crore
Khaparkheda	386.32	87.50%	86.53%	80%	386.32	-
Paras	32.25	72.70%	73.39%	80%	29.59	2.66
Bhusawal	149.40	74.29%	74.59%	80%	139.30	10.10
Nasik	255.74	72.15%	74.53%	78.58%	242.56	13.18
Parli	197.57	66.83%	68.22%	80%	168.48	29.09
Koradi	313.97	62.42%	63.71%	73.94%	270.52	43.45
Chandrapur	603.03	73.25%	73.92%	80%	557.20	45.83
Uran	189.73	60.33%	59.46%	59.46%	189.72	0.01

Particulars	New AFC for FY 2009-10	Actual Availability	New Availability	Normative Availability	New Reduced AFC	New AFC to be disallowed
<b>Total</b>	<b>2128.00</b>				<b>1983.67</b>	<b>144.33</b>

**Table 13: Net Entitlement as per Hon'ble ATE Judgment (Rs. Crore)**

Particulars	Net Entitlement
Fuel Related Expenses/Lease Rentals	6790.24
Operation and Maintenance Expenses	1093.35
Depreciation, including advance against depreciation	363.87
Interest on Long-term Loan Capital	106.45
Interest on Working Capital	219.66
Other Expenses (pls provide details)	112.31
Income Tax	37.53
Amortisation of Bad Debts pertaining to FY 05-06	8.37
Total Revenue Expenditure	8731.78
Return on Equity Capital	358.88
Aggregate Revenue Requirement	9090.66
Revenue from sale of Power	8549.58
Gap	541.08
Fixed cost reduction	144.33
Net Gap	396.75
Gap as per FY 2008-09 True up	358.88
Net Impact	43.16
Carrying cost	5.61
Total impact of FY 08-09	48.78

3.3.7 The net impact of this judgment including carrying cost has been considered during the final True up for the FY 2009-10 which is described in Section 4 of this Order.

#### **4 FINAL TRUING UP FOR FY 2009-10 (OLD STATIONS)**

4.1.1 MSPGCL, in its Petition, had included a Section on the final Truing up of expenditure and revenue for FY 2009-10 based on Audited Annual Accounts. MSPGCL provided the comparison of actual expenditure with the expenditure approved by the Commission in the APR Order along with the reasons for deviations.

#### **4.2 Performance Parameters and Fuel Cost**

##### **MSPGCL's Submission**

4.2.1 MSPGCL submitted that as per the APR Order for FY 2009-10, the Commission had approved the fuel expenses of Rs 7744.73 Crore. On the contrary, the actual fuel expense as per the Audited Annual Accounts of FY 2009-10 for the old stations (excluding Paras Unit-3 and Parli Unit-6) was Rs. 8064.37 Crore including other fuel related costs of Rs. 354.27 Crore.

4.2.2 MSPGCL submitted following reasons for the deviation in the fuel expense:

- Expenditure on Other Variable Charges (including water, chemicals, lubricants etc.)
- Fuel expenses

4.2.3 **Other Variable Charges:** MSPGCL submitted that the increase in cost of water was the key reason for the increase in Other Variable Charges. The cost of water for all the MSPGCL stations (including newly commissioned/upcoming projects) in FY 2008-09 was Rs 119.40 Crore. However, the same was Rs 177.97 Crore in FY 2009-10.

4.2.4 MSPGCL further submitted that the other factors contributing towards the increase in Other Variable Charges had been the demurrage charges on account of coal related issues especially during the rainy season and the charges toward stock shortages which was on account of loss in moisture, adjustment for weight of stones, etc.

4.2.5 Station wise Other Variable Charges provided by MSPGCL are given in the table below:

**Table 14: Other Variable Charges as submitted by MSPGCL for FY 2009-10**

Station	Actuals for FY 2009-10 (Rs. Crore)
Khaperkheda	20.68
Paras	6.18
Bhusawal	31.9
Nasik	59.79
Parli	99.64
Koradi	66.98
Chandrapur	67.60
Uran	1.05
Hydro	0.47
<b>Total</b>	<b>354.27</b>

4.2.6 **Fuel expenses:** MSPGCL submitted that as per the APR Order for FY 2009-10, the Commission had approved a total fuel cost of Rs 7744.73 Crore (including Other Variable Charges) whereas the actual fuel cost as per the Audited Annual Accounts was Rs. 7710.10 Crore excluding Other Variable Charges.

4.2.7 MSPGCL cited the following reasons for deviation from the approved fuel cost:

A. **Timeline for completion of CPRI study and approval of SHR for FY 2009-10 after consideration of immediate measures:** MSPGCL submitted that any consideration in the technical performance of the Units, as per the study report of the CPRI, needs to be considered after the suggested time periods for immediate, medium and long term investments (duly taking into account the practical difficulties if any).

- B. Inconsistent approach during true-up of fuel expense from FY 2005-06 to FY 2007-08 Vs the approach of the True-up for FY 2008-09 and FY 2009-10:** MSPGCL submitted that the approach taken by the Commission for considering the SHR for FY 2008-09 is inconsistent with the approach taken by the Commission for considering the SHR for the period from FY 2005-06 to FY 2007-08. The Commission approved the fuel cost on actual basis for FY 2005-06 to FY 2007-08, but for FY 2008-09 the Commission approved the fuel cost as per the CPRI recommendations.
- C. Inconsistent approach in approval of Capex vis-à-vis the realization of benefits from such investments:** MSPGCL submitted that as per the study report of CPRI the improvement in performance is directly linked to the implementation of the Capex schemes. But the Commission disallowed the actual expenditure made by MSPGCL in FY 2008-09 due to non submission of the cost benefit analysis report. MSPGCL emphasized that as the Capex program was planned as per the recommendation of CPRI, it was assumed that the cost benefit analysis would not be required for the Capex programs.
- D. Issues of coal shortage in FY 2009-10:**
- i. MSPGCL submitted that the overall generation loss due to non-availability of adequate coal supply had been around 1216 MU during the period April, 2009 to November, 2009.
  - ii. Besides the loss in generation, the major impact of such shortages was observed in the increase in secondary oil consumption especially during the first half of FY 2009-10 on account of partial loading of Units.
- E. Increase in Transit Losses during the year FY 2009-10:** With regards to Transit Loss MSPGCL submitted the following points before the Commission.
- i. The Transit Losses in FY 2009-10 have exceeded the normative limit of 0.8%. The same was on account of Judgment of the Hon'ble Supreme Court of India against Contempt Petition No. 245 of 2007 dated December 19, 2008.

F. **Impact of forced backing down on account of non availability of transmission lines/ SLDC instructions:** MSPGCL submitted that its stations had been asked to back down on account of either the less of demand or due to non-availability of transmission lines. Such unscheduled backing down of Units impacts the Petitioner as follows:

- Tripping of Units;
- Increase in Auxiliary Consumption;
- Increase in secondary oil consumption thereby increasing the overall SHR.

#### **Commission's Analysis and Ruling**

### **4.3 Availability and Net Generation**

4.3.1 The Commission, vide Order dated March 5, 2010 in Case No. 16 of 2008, considered the actual Availability and PLF from FY 2005-06 to FY 2007-08 and did not disallow any amount pertaining to Annual Fixed Charges for existing stations on account of lower availability. Further the Commission in the said Order stated that

*“From FY 2008-09 onwards, the Commission would consider the targets for Unit-wise availability and PLF based on CPRI recommendations”. As regards the availability and PLF, the recommendations made by CPRI in its reports are as follows:*

- *“Koradi Units (1-4) have never exceeded 80 % PLF in their lifetime in spite of de-rating.*
- *As per steady trends in Figure 3, the Units the achievable PLFs are around 65 %.*
- *As per the trends Nasik Units (1-2) are capable of achieving PLFs of around 75 % after de-rating.*
- *Bhusawal (Unit 1), Paras (Unit 2) and Parli Units (1 & 2) are capable of achieving PLF of 80 %.*

*Units of 210 MW and above can easily achieve the PLF of 80 % with focused attention on coal quality, R & M programs, adherence to planned maintenance schedule, leakage control, operational optimization, etc.”*

- 4.3.2 It may be observed from the above recommendations of CPRI that except for some of the Units of generating stations, all other Units are capable of achieving 80% Availability and PLF. For Koradi and Nasik Units for which CPRI has recommended lower PLF, the Commission has considered the recommended values to derive the station wise Availability and PLF.
- 4.3.3 The Commission, vide Order dated March 5, 2010 in Case No. 16 of 2008, had approved the Availability and PLF for FY 2009-10 based on the CPRI recommendations for all Stations except Koradi and Nasik TPS. For Koradi and Nasik Stations where CPRI had given lower Availability and PLF, the Commission had approved based on the submission made by MSPGCL. For the purpose of Truing up, the Commission has approved availability and PLF for FY 2009-10 considering the Availability and PLF approved in the APR as given in the table below. As the actual Availability of Stations is substantially lower than the approved Availability, except for the Station of Khaparkheda, the Annual Fixed Charges for those Stations shall be proportionately reduced as per Regulation 33.11 of MERC (Terms and conditions of Tariff) Regulations, 2005.

**Table 15: Availability for FY 2009-10 (Old Stations)**

Stations	Availability (%)		
	APR Order	Actual	Approved after Truing Up
Bhusawal	80.00%	77.22%	80.00%
Chandrapur	80.00%	76.66%	80.00%
Khaparkheda	80.92%	81.84%	80.92%
Koradi	73.94%	57.88%	73.94%
Nashik	78.58%	72.82%	78.58%
Paras	80.00%	47.83%	80.00%
Parli	80.00%	70.77%	80.00%
Uran	78.87%	69.50%	78.87%

**Table 16: Plant Load Factor for FY 2009-10 (Old Stations)**

Stations	Plant Load Factor (%)		
	APR Order	Actual	Approved after Truing Up
Bhusawal	80.00%	77.22%	80.00%
Chandrapur	80.00%	76.66%	80.00%
Khaparkheda	80.92%	81.84%	80.92%
Koradi	73.94%	57.88%	73.94%
Nashik	78.58%	72.82%	78.58%
Paras	80.00%	47.83%	80.00%
Parli	80.00%	70.77%	80.00%
Uran	78.87%	69.50%	78.87%

4.3.4 Regarding approval of Capex schemes, the Commission disagrees with MSPGCL's contention that the DPRs should be summarily approved even if these are not accompanied by cost benefit analysis. The Commission would like to draw the attention to the Capex approval process of the Commission where the necessity to undertake cost benefit analysis is clearly specified. The Commission observes that the Petitioner as the Owner of the power plant is accountable to its stake holders for achieving operational and maintenance efficiencies. Hence it should not incur capital expenditure unless there is clarity regarding the benefits coming out of it. Hence the Commission feels the Petitioner should weigh the recommendations in the right perspective and make projections of immediate benefits to be accrued through the said expenditure.

#### **4.4 Auxiliary Consumption**

4.4.1 The Commission in its Order dated September 12, 2010 in Case No. 102 of 2009 had approved the Auxiliary Consumption for FY 2009-10 based on the CPRI recommendations. The same Auxiliary Consumption norms have been considered for final Truing up purpose by the Commission. The summary of Auxiliary Consumption as approved in MYT Order, proposed by MSPGCL in the APR Petition and values approved by the Commission for FY 2009-10 is given in the Table below.



**Table 17: Auxiliary Consumption for FY 2009-10 (Old Stations) (%)**

<b>Stations</b>	<b>APR Order</b>	<b>MSPGCL</b>	<b>Commission Approved</b>
Bhusawal	10.74%	10.63%	10.74%
Chandrapur	8.18%	8.47%	8.18%
Khaparkheda	9.17%	9.50%	9.17%
Koradi	10.74%	12.50%	10.74%
Nashik	9.74%	9.86%	9.74%
Paras	12.18%	14.89%	12.18%
Parli	10.93%	11.16%	10.93%
Uran	2.40%	1.94%	2.40%

#### **4.5 Station Heat Rate (SHR)**

4.5.1 The Commission, vide Order dated September 12, 2010 in Case No. 102 of 2009 had approved the Station Heat Rate (SHR) for FY 2009-10 as per CPRI recommendations for carrying out the provisional Truing up of fuel expenses.

4.5.2 The Hon'ble ATE, in the Judgment in Appeal no. 199 of 2010, has upheld the approach taken by the Commission for fixing the Station Heat Rate for FY 2009-10 based on the CPRI recommendation. The relevant extract of the Hon'ble ATE is given below.

*“For 2009-10 some improvements have been made in the Station Heat Rate norms approved for FY 2008-09 which would reflect the impact of improvements expected due to better operational/management practices. However, for further improvements in Station Heat Rate a reasonable time schedule may have to be given for implementation of the medium term measures. Accordingly, while we do not interfere with the findings of the State Commission for FY 2008-09 and 2009-10,”*

4.5.3 Accordingly, the Commission, for carrying out the final Truing up of fuel expenses in this Order, has considered the Station Heat Rate as approved by the Commission for FY 2009-10 based on the Order dated September 12, 2010 in Case No. 102 of 2009. The summary of Station Heat Rate approved in the APR Order, actual heat rate for FY 2009-10 and heat rate approved by the Commission for Truing up is given in the following Table:

**Table 18: Station Heat Rate for FY 2009-10 (Old Stations) (kcal/kWh)**

Stations	Station Heat Rate (kcal/kWh)		
	APR order	Actual/Audited	Approved after Truing Up
Bhusawal	2784.3	3013.00	2784.30
Chandrapur	2764	2760.00	2664.00
Khaparkheda	2612.2	2811.00	2612.2
Koradi	3014.9	3344.00	3014.90
Nashik	2774.30	3069.62	2774.30
Paras	3223.8	3890	3223.80
Parli	2796.1	3136	2796.10
Uran	1980	2035.14	1980

#### 4.6 Secondary Fuel Oil Consumption

4.6.1 The Commission, vide Order dated September 12, 2010 in Case No. 102 of 2009 has approved the Secondary Fuel Oil Consumption for FY 2009-10 as per CPRI recommendations, for carrying out the provisional Truing up of fuel expenses. Accordingly, the Commission, for carrying out the final Truing up of fuel expenses in this Order, has considered the station-wise secondary fuel oil consumption as approved by the Commission for FY 2009-10. The summary of Station-wise Secondary Fuel Oil consumption approved in the APR Order, actual secondary fuel oil consumption for FY 2009-10 and secondary fuel oil consumption approved by the Commission for Truing up is given in the following Table:

**Table 19: Secondary Fuel Oil Consumption for FY 2009-10 (Old Stations)**

Stations	Secondary Fuel Oil Consumption (ml/kWh)		
	APR	Actual	Approved after Truing Up
Bhusawal	2.00	3.61	2.00
Chandrapur	2.00	1.33	2.00
Khaparkheda	2.00	1.11	2.00
Koradi	2.81	11.06	2.81
Nashik	3.00	3.90	3.00
Paras	2.00	8.79	2.00
Parli	2.00	3.99	2.00

**4.7 Transit Loss**

4.7.1 The Commission observed that the Transit Loss for MSPGCL Stations, except Chandrapur and Parli, are substantially high from the normative parameters. For Chandrapur and Parli stations, MSPGCL has submitted lower Transit Loss than the normative parameters. The Commission in its Order dated September 12, 2010 in Case No. 102 of 2009 has approved the Transit Loss for FY 2009-10 as 0.8% for carrying out the provisional Truing up of fuel expenses. Accordingly, the Commission, for carrying out the final Truing up of fuel expenses in this Order, has considered the normative Transit Loss of 0.8%. The gain made due to lower Transit Loss for the Chandrapur and Parli Station will be shared with MSEDCL as per the Regulation 19 of the MERC (Terms and Conditions of Tariff) Regulations, 2005. Similarly, the loss made in other stations shall be shared with MSEDCL as per the Regulation 19 of the MERC (Terms and Conditions of Tariff) Regulations, 2005. The Commission appreciates the efforts put up by the Petitioner towards reduction of Transit Loss and hopes that further efforts as required will bring the loss within normative limits.

**Table 20: Transit Loss for FY 2009-10 (old Stations) (%)**

Stations	APR Order	MSPGCL	Commission Approved
Bhusawal	0.80%	3.44%	0.80%

Stations	APR Order	MSPGCL	Commission Approved
Chandrapur	0.80%	0.63%	0.80%
Khaparkhedda	0.80%	4.12%	0.80%
Koradi	0.80%	0.85%	0.80%
Nashik	0.80%	1.79%	0.80%
Paras	0.80%	2.31%	0.80%
Parli	0.80%	0.00%	0.80%

#### 4.8 Fuel Price, Fuel Mix and Calorific Value

4.8.1 The Commission, for carrying out the Truing up of fuel expenses for FY 2009-10, has considered the actual fuel price, actual calorific value and actual proportion of domestic, washed and imported coal for each station as submitted by MSPGCL.

#### 4.9 Fuel Cost of different Stations in FY 2009-10

4.9.1 Fuel cost for different Stations as computed by the Commission is provided below

**Table 21: Fuel Cost of Bhusawal Thermal Power Station for FY 2009-10 (Rs. Crore)**

Bhusawal TPS	Units	April-March (Audited) FY 2009-10	Trued-up for FY 2009-10
<b>Operational Parameters</b>			
Total Capacity	MW	475.00	475.00
Gross Generation	MU	3084.61	3084.61
Auxiliary Energy Consumption	%	10.63%	10.74%
Auxiliary Energy Consumption	MU	327.89	331.29
Net Generation	MU	2756.71	2753.32
Heat Rate	kcal/kWh	3013.00	2784.30
<b>Fuel Parameters (for each primary and secondary fuel)</b>			
<b>Calorific Value</b>			
Fuel 1 (Indian Coal)	Kcal/Kg	3192.00	3192.00
Fuel 1 (Imported Coal)	Kcal/Kg	6245.00	6245.00
Fuel 1 (Washed Coal)	Kcal/Kg	3996.00	3996.00
Fuel 2 (F. O.)	Kcal/Kg	9513.00	9513.00
Fuel 3 (L. D. O.)	Kcal/Kg	9243.00	9243.00
Fuel 4 (LSHS)	Kcal/Kg		
Fuel 3 (HSD)	Kcal/Kg		
<b>Landed Fuel Price per unit</b>			
Fuel 1 (Indian Coal)	Rs/MT	1921.96	1870.87
Fuel 1 (Imported Coal)	Rs/MT	6643.04	6643.04

Bhusawal TPS	Units	April-March (Audited) FY 2009-10	Trued-up for FY 2009-10
Fuel 1 (Washed Coal)	Rs/MT	2058.64	2058.64
Fuel 2 (F. O.)	Rs/KL	24960.33	24960.33
Fuel 3 (L. D. O.)	Rs/KL	37608.48	37608.48
Fuel 4 (LSHS)	Rs/KL		
Fuel 3 (HSD)	Rs/KL		
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>			
<b>Specific Fuel Consumption</b>			
Fuel 1 (Indian Coal)	Kg/kWh	0.55	0.54
Fuel 1 (Imported Coal)	Kg/kWh	0.10	0.05
Fuel 1 (Washed Coal)	Kg/kWh	0.24	0.18
Fuel 2 (F. O.)	ml/kWh	3.33	1.85
Fuel 3 (L. D. O.)	ml/kWh	0.28	0.15
Fuel 4 (LSHS)	ml/kWh		
<b>Total Fuel Consumption</b>			
Fuel 1 (Indian Coal)	MT	1,704,393	1,653,800
Fuel 1 (Imported Coal)	MT	321,208	159,305
Fuel 1 (Washed Coal)	MT	729,806	565,664
Fuel 2 (F. O.)	KL	10,279	5,696
Fuel 3 (L. D. O.)	KL	853	473
<b>Heat Content (each fuel separately)</b>			
Fuel 1 (Indian Coal)	Million kcal	5,689,264	5,278,931
Fuel 1 (Imported Coal)	Million kcal	1,072,192	994,861
Fuel 1 (Washed Coal)	Million kcal	2,436,092	2,260,392
Fuel 2 (F. O.)	Million kcal	91,233	50,560
Fuel 3 (L. D. O.)	Million kcal	6,725	3,727
Fuel 4 (LSHS)	Million kcal		
Fuel 3 (HSD)	Million kcal		
<b>Total Heat Content</b>		<b>9,295,506</b>	<b>8,588,471</b>
<b>Total Fuel Cost</b>			
Fuel 1 (Indian Coal)	Rs Crore	327.58	309.40
Fuel 1 (Imported Coal)	Rs Crore	213.38	105.83
Fuel 1 (Washed Coal)	Rs Crore	150.24	116.45
Fuel 2 (F. O.)	Rs Crore	25.66	14.22
Fuel 3 (L. D. O.)	Rs Crore	3.21	1.78
Fuel 4 (LSHS)	Rs Crore		
<b>Total Fuel Cost</b>	Rs Crore	<b>720.06</b>	<b>547.68</b>
<b>Other Charges and Adjustments</b>			
Other Variable Charges	Rs Crore	31.90	31.90
Other Adjustments (Pl. specify details)	Rs Crore		
<b>Total Other Charges and Adjustments</b>	Rs Crore	<b>31.90</b>	<b>31.90</b>
<b>Total Cost (4+5)</b>	Rs Crore	<b>751.96</b>	<b>579.58</b>

**Table 22: Fuel Cost of Chandarpur Thermal Power Station for FY 2009-10 (Rs. Crore)**

<b>Chandarpur TPS</b>	<b>Units</b>	<b>April-March (Audited) FY 2009-10</b>	<b>Trued-up for FY 2009-10</b>
<b>Operational Parameters</b>			
Total Capacity	MW	2340	2340
Gross Generation	MU	14622.74	14622.74
Auxiliary Energy Consumption	%	8.47%	8.18%
Auxiliary Energy Consumption	MU	1238.85	1196.14
Net Generation	MU	13383.89	13426.60
Heat Rate	kcal/kWh	2760.00	2664.40
<b>Fuel Parameters (for each primary and secondary fuel)</b>			
<b>Calorific Value</b>	Bunkered CV	3341.30	
Fuel 1 (Indian Coal)	Kcal/Kg	3188.00	3188.00
Fuel 1 (Imported Coal)	Kcal/Kg	6104.00	6104.00
Fuel 1 (Washed Coal)	Kcal/Kg	3998.00	3998.00
Fuel 2 (F. O.)	Kcal/Kg	10047.00	10047.00
Fuel 3 (L. D. O.)	Kcal/Kg	10547.00	10547.00
Fuel 4 (LSHS)	Kcal/Kg		
Fuel 3 (HSD)	Kcal/Kg		
<b>Landed Fuel Price per unit</b>			
Fuel 1 (Indian Coal)	Rs/MT	1378.24	1380.61
Fuel 1 (Imported Coal)	Rs/MT	6388.35	6388.35
Fuel 1 (Washed Coal)	Rs/MT	1726.15	1726.15
Fuel 2 (F. O.)	Rs/KL	26328.31	26328.31
Fuel 3 (L. D. O.)	Rs/KL	36808.89	36808.89
Fuel 4 (LSHS)	Rs/KL	-	
Fuel 3 (HSD)	Rs/KL	-	
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>			
<b>Specific Fuel Consumption</b>			
Fuel 1 (Indian Coal)	Kg/kWh	0.63	0.63
Fuel 1 (Imported Coal)	Kg/kWh	0.04	0.02
Fuel 1 (Washed Coal)	Kg/kWh	0.16	0.13
Fuel 2 (F. O.)	ml/kWh	1.07	1.62
Fuel 3 (L. D. O.)	ml/kWh	0.25	0.38
Fuel 4 (LSHS)	ml/kWh		
<b>Total Fuel Consumption</b>			
Fuel 1 (Indian Coal)	MT	9,170,323	9,241,793

Chandarpur TPS	Units	April-March (Audited) FY 2009-10	Trued-up for FY 2009-10
Fuel 1 (Imported Coal)	MT	569,603	299,811
Fuel 1 (Washed Coal)	MT	2,301,979	1,849,901
Fuel 2 (F. O.)	KL	15,683	23,670
Fuel 3 (L. D. O.)	KL	3,694	5,575
Fuel 4 (LSHS)	KL		
<b>Heat Content (each fuel separately)</b>			
Fuel 1 (Indian Coal)	Million kcal	30,640,828	29,462,838
Fuel 1 (Imported Coal)	Million kcal	1,903,216	1,830,047
Fuel 1 (Washed Coal)	Million kcal	7,691,609	7,395,905
Fuel 2 (F. O.)	Million kcal	147,010	221,881
Fuel 3 (L. D. O.)	Million kcal	33,233	50,159
Fuel 4 (LSHS)	Million kcal		
Fuel 3 (HSD)	Million kcal		
<b>Total Heat Content</b>		<b>40,415,898</b>	<b>38,960,828</b>
<b>Total Fuel Cost</b>			
Fuel 1 (Indian Coal)	Rs Crore	1,263.89	1,275.93
Fuel 1 (Imported Coal)	Rs Crore	363.88	191.53
Fuel 1 (Washed Coal)	Rs Crore	397.36	319.32
Fuel 2 (F. O.)	Rs Crore	41.29	62.32
Fuel 3 (L. D. O.)	Rs Crore	13.60	20.52
Fuel 4 (LSHS)	Rs Crore		
Fuel 3 (HSD)	Rs Crore		
<b>Total Fuel Cost</b>	Rs Crore	<b>2,080.02</b>	<b>1,869.62</b>

**Table 23: Fuel Cost of Koradi Thermal Power Station for FY 2009-10 (Rs. Crore)**

Koradi TPS	Units	April-March (Audited) FY 2009-10	Trued-up for FY 2009-10
<b>Operational Parameters</b>			
Total Capacity	MW	1040	1040
Gross Generation	MU	5087.43	5087.43
Auxiliary Energy Consumption	%	12.50%	10.74%
Auxiliary Energy Consumption	MU	635.83	546.39
Net Generation	MU	4451.60	4541.04
Heat Rate	kcal/kWh	3,344	3014.90
<b>Fuel Parameters (for each primary and secondary fuel)</b>			
<b>Calorific Value</b>			

Koradi TPS	Units	April-March (Audited) FY 2009-10	Trued-up for FY 2009-10
Fuel 1 (Indian Coal)	Kcal/Kg	3,815	3815.00
Fuel 1 (Imported Coal)	Kcal/Kg	6,123	6123.00
Fuel 1 (Washed Coal)	Kcal/Kg	4,496	4496.00
Fuel 2 (F. O.)	Kcal/Kg	10,256	10256.00
Fuel 3 (L. D. O.)	Kcal/Kg	10,581	10581.00
Fuel 4 (LSHS)	Kcal/Kg		
<b>Landed Fuel Price per unit</b>			
Fuel 1 (Indian Coal)	Rs/MT	1,637	1636.51
Fuel 1 (Imported Coal)	Rs/MT	6,761	6760.83
Fuel 1 (Washed Coal)	Rs/MT	1,584	1584.50
Fuel 2 (F. O.)	Rs/KL	25,878	25878.18
Fuel 3 (L. D. O.)	Rs/KL	36,497	36497.48
Fuel 4 (LSHS)	Rs/KL	-	
Fuel 3 (HSD)	Rs/KL	-	
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>			
<b>Specific Fuel Consumption</b>			
Fuel 1 (Indian Coal)	Kg/kWh	0.52	0.48
Fuel 1 (Imported Coal)	Kg/kWh	0.05	0.03
Fuel 1 (Washed Coal)	Kg/kWh	0.27	0.22
Fuel 2 (F. O.)	ml/kWh	9.93	2.52
Fuel 3 (L. D. O.)	ml/kWh	1.12	0.29
Fuel 4 (LSHS)	ml/kWh		
<b>Total Fuel Consumption</b>			
Fuel 1 (Indian Coal)	MT	2,664,640	2,463,868
Fuel 1 (Imported Coal)	MT	247,121	142,370
Fuel 1 (Washed Coal)	MT	1,397,767	1,096,685
Fuel 2 (F. O.)	KL	50,538	12,845
Fuel 3 (L. D. O.)	KL	5,706	1,450
Fuel 4 (LSHS)	KL		
<b>Heat Content (each fuel separately)</b>			
Fuel 1 (Indian Coal)	Million kcal	10,160,272	9,399,658
Fuel 1 (Imported Coal)	Million kcal	942,272	871,732
Fuel 1 (Washed Coal)	Million kcal	5,329,686	4,930,697
Fuel 2 (F. O.)	Million kcal	483,590	122,915
Fuel 3 (L. D. O.)	Million kcal	51,500	13,090
Fuel 4 (LSHS)	Million kcal		
<b>Total Heat Content</b>		<b>16,967,321</b>	<b>15,338,093</b>
<b>Total Fuel Cost</b>			
Fuel 1 (Indian Coal)	Rs Crore	436	403.21
Fuel 1 (Imported Coal)	Rs Crore	167	96.25



Koradi TPS	Units	April-March (Audited) FY 2009-10	Trued-up for FY 2009-10
Fuel 1 (Washed Coal)	Rs Crore	221	173.77
Fuel 2 (F. O.)	Rs Crore	131	33.24
Fuel 3 (L. D. O.)	Rs Crore	21	5.29
Fuel 4 (LSHS)	Rs Crore		
<b>Total Fuel Cost</b>	Rs Crore	<b>976.45</b>	<b>711.77</b>

**Table 24: Fuel Cost of Parli Thermal Power Station for FY 2009-10 (Rs. Crore)**

Parli TPS	Units	April-March (Audited) FY 2009-10	Trued-up for FY 2009-10
<b>Operational Parameters</b>			
Total Capacity	MW	670.00	670
Gross Generation	MU	4096.70	4096.70
Auxiliary Energy Consumption	%	11.16%	10.93%
Auxiliary Energy Consumption	MU	457.19	447.77
Net Generation	MU	3639.51	3648.93
Heat Rate	kcal/kWh	3,136	2796.10
<b>Fuel Parameters (for each primary and secondary fuel)</b>			
<b>Calorific Value</b>			
Fuel 1 (Indian Coal)	Kcal/Kg	2981.00	2981.00
Fuel 1 (Imported Coal)	Kcal/Kg	5889.00	5889.00
Fuel 1 (Washed Coal)	Kcal/Kg	4332.00	4332.00
Fuel 2 (F. O.)	Kcal/Kg	10154.00	10154.00
Fuel 3 (L. D. O.)	Kcal/Kg	10490.00	10490.00
Fuel 4 (LSHS)	Kcal/Kg	0.00	
<b>Landed Fuel Price per unit</b>			
Fuel 1 (Indian Coal)	Rs/MT	1948.67	1964.38
Fuel 1 (Imported Coal)	Rs/MT	6866.79	6866.79
Fuel 1 (Washed Coal)	Rs/MT	2224.69	2224.69
Fuel 2 (F. O.)	Rs/KL	23433.39	23433.39
Fuel 3 (L. D. O.)	Rs/KL	35716.80	35716.80
Fuel 4 (LSHS)	Rs/KL	0.00	
Fuel 3 (HSD)	Rs/KL	0.00	
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>			
<b>Specific Fuel Consumption</b>			
Fuel 1 (Indian Coal)	Kg/kWh	0.47	0.53
Fuel 1 (Imported Coal)	Kg/kWh	0.09	0.05
Fuel 1 (Washed Coal)	Kg/kWh	0.27	0.21

Parli TPS	Units	April-March (Audited) FY 2009-10	Trued-up for FY 2009-10
Fuel 2 (F. O.)	ml/kWh	3.46	1.74
Fuel 3 (L. D. O.)	ml/kWh	0.53	0.26
Fuel 4 (LSHS)	ml/kWh		
<b>Total Fuel Consumption</b>			
Fuel 1 (Indian Coal)	MT	1,926,089	2,160,314
Fuel 1 (Imported Coal)	MT	356,533	202,423
Fuel 1 (Washed Coal)	MT	1,120,311	864,674
Fuel 2 (F. O.)	KL	14,168	7,110
Fuel 3 (L. D. O.)	KL	2,160	1,084
Fuel 4 (LSHS)	KL		
<b>Heat Content (each fuel separately)</b>			
Fuel 1 (Indian Coal)	Million kcal	7,184,312	6,439,895
Fuel 1 (Imported Coal)	Million kcal	1,329,868	1,192,071
Fuel 1 (Washed Coal)	Million kcal	4,178,760	3,745,769
Fuel 2 (F. O.)	Million kcal	134,223	67,353
Fuel 3 (L. D. O.)	Million kcal	19,328	9,699
Fuel 4 (LSHS)	Million kcal		
<b>Total Heat Content</b>		<b>12,846,491</b>	<b>11,454,787</b>
<b>Total Fuel Cost</b>			
Fuel 1 (Indian Coal)	Rs Crore	375.33	424.37
Fuel 1 (Imported Coal)	Rs Crore	244.82	139.00
Fuel 1 (Washed Coal)	Rs Crore	249.23	192.36
Fuel 2 (F. O.)	Rs Crore	33.20	16.66
Fuel 3 (L. D. O.)	Rs Crore	7.71	3.87
Fuel 4 (LSHS)	Rs Crore		
<b>Total Fuel Cost</b>	Rs Crore	<b>910.30</b>	<b>776.26</b>

**Table 25: Fuel Cost of Paras Thermal Power Station for FY 2009-10 (Rs. Crore)**

Paras TPS	Units	April-March (Audited) FY 2009-10	Approved for FY 2009-10
<b>Operational Parameters</b>			
Total Capacity	MW	55.00	55
Gross Generation	MU	231.34	231.34
Auxiliary Energy Consumption	%	14.89%	12.18%
Auxiliary Energy Consumption	MU	34.45	28.18
Net Generation	MU	196.89	203.16
Heat Rate	kcal/kWh	3890.00	3223.80
<b>Fuel Parameters (for each</b>			

Paras TPS	Units		April-March (Audited) FY 2009-10	Approved for FY 2009-10
<b>primary and secondary fuel)</b>				
<b>Calorific Value</b>				
Fuel 1 (Indian Coal)	Kcal/Kg		3376.07	3376.07
Fuel 1 (Imported Coal)	Kcal/Kg		0.00	0.00
Fuel 1 (Washed Coal)	Kcal/Kg		0.00	0.00
Fuel 2 (F. O.)	Kcal/Kg		10320.71	10320.71
Fuel 3 (L. D. O.)	Kcal/Kg		10748.96	10748.96
Fuel 4 (LSHS)	Kcal/Kg		0.00	
Fuel 3 (HSD)	Kcal/Kg		0.00	
<b>Landed Fuel Price per unit</b>				
Fuel 1 (Indian Coal)	Rs/MT		1864.72	1864.72
Fuel 1 (Imported Coal)	Rs/MT		0.00	0.00
Fuel 1 (Washed Coal)	Rs/MT		0.00	0.00
Fuel 2 (F. O.)	Rs/KL		21014.06	21014.06
Fuel 3 (L. D. O.)	Rs/KL		33266.11	33266.11
Fuel 4 (LSHS)	Rs/KL		0.00	
Fuel 3 (HSD)	Rs/KL		0.00	
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>				
<b>Specific Fuel Consumption</b>				
Fuel 1 (Indian Coal)	Kg/kWh		1.13	0.95
Fuel 1 (Imported Coal)	Kg/kWh		-	
Fuel 1 (Washed Coal)	Kg/kWh		-	
Fuel 2 (F. O.)	ml/kWh		8.23	1.87
Fuel 3 (L. D. O.)	ml/kWh		0.56	0.13
Fuel 4 (LSHS)	ml/kWh			
Fuel 3 (HSD)	ml/kWh			
<b>Total Fuel Consumption</b>				
Fuel 1 (Indian Coal)	MT		260,742	219,586
Fuel 1 (Imported Coal)	MT			
Fuel 1 (Washed Coal)	MT			
Fuel 2 (F. O.)	KL		1,904	433
Fuel 3 (L. D. O.)	KL		129	29
Fuel 4 (LSHS)	KL			
Fuel 3 (HSD)	KL		-	
<b>Heat Content (each fuel separately)</b>				
Fuel 1 (Indian Coal)	Million kcal		880,283	741,336
Fuel 1 (Imported Coal)	Million kcal		-	-
Fuel 1 (Washed Coal)	Million kcal		-	-

Paras TPS	Units		April-March (Audited) FY 2009-10	Approved for FY 2009-10
Fuel 2 (F. O.)	Million kcal		18,334	4,173
Fuel 3 (L. D. O.)	Million kcal		1,183	269
Fuel 4 (LSHS)	Million kcal			
Fuel 3 (HSD)	Million kcal			
<b>Total Heat Content</b>			<b>899,799</b>	<b>745,778</b>
<b>Total Fuel Cost</b>			0.0%	
Fuel 1 (Indian Coal)	Rs Crore		48.62	40.95
Fuel 1 (Imported Coal)	Rs Crore		-	
Fuel 1 (Washed Coal)	Rs Crore		-	
Fuel 2 (F. O.)	Rs Crore		4.00	0.91
Fuel 3 (L. D. O.)	Rs Crore		0.43	0.10
Fuel 4 (LSHS)	Rs Crore			
Fuel 3 (HSD)	Rs Crore		-	
<b>Total Fuel Cost</b>	Rs Crore		<b>53.05</b>	<b>41.95</b>

**Table 26: Fuel Cost of Nasik Thermal Power Station for FY 2009-10 (Rs. Crore)**

Nasik TPS	Units	April-March (Audited) FY 2009-10	Trued-Up for FY 2009-10
<b>Operational Parameters</b>			
Total Capacity	MW	880	880
Gross Generation	MU	5484.89	5484.89
Auxiliary Energy Consumption	%	9.86%	9.74%
Auxiliary Energy Consumption	MU	540.81	534.23
Net Generation	MU	4944.08	4950.66
Heat Rate	kcal/kWh	3,070	2,774
<b>Fuel Parameters (for each primary and secondary fuel)</b>			
<b>Calorific Value</b>		3757.63	
Fuel 1 (Indian Coal)	Kcal/Kg	3,158	3,158
Fuel 1 (Imported Coal)	Kcal/Kg	5,616	5,616
Fuel 1 (Washed Coal)	Kcal/Kg	4,332	4,332
Fuel 2 (F. O.)	Kcal/Kg	10,122	10,122
Fuel 3 (L. D. O.)	Kcal/Kg	10,504	10,504
Fuel 4 (LSHS)	Kcal/Kg		
Fuel 3 (HSD)	Kcal/Kg		
<b>Landed Fuel Price per unit</b>			
Fuel 1 (Indian Coal)	Rs/MT	2,414	2,390
Fuel 1 (Imported Coal)	Rs/MT	6,340	6,340
Fuel 1 (Washed Coal)	Rs/MT	2,236	2,236

Nasik TPS	Units	April-March (Audited) FY 2009-10	Trued-Up for FY 2009-10
Fuel 2 (F. O.)	Rs/KL	25,107	25,107
Fuel 3 (L. D. O.)	Rs/KL	37,072	37,072
Fuel 4 (LSHS)	Rs/KL		
Fuel 3 (HSD)	Rs/KL		
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>			
<b>Specific Fuel Consumption</b>			
Fuel 1 (Indian Coal)	Kg/kWh	0.54	0.58
Fuel 1 (Imported Coal)	Kg/kWh	0.13	0.08
Fuel 1 (Washed Coal)	Kg/kWh	0.14	0.11
Fuel 2 (F. O.)	ml/kWh	3.20	2.46
Fuel 3 (L. D. O.)	ml/kWh	0.70	0.54
Fuel 4 (LSHS)	ml/kWh		
<b>Total Fuel Consumption</b>			
Fuel 1 (Indian Coal)	MT	2,944,238	3,171,942
Fuel 1 (Imported Coal)	MT	711,551	431,066
Fuel 1 (Washed Coal)	MT	771,519	605,930
Fuel 2 (F. O.)	KL	17,575	13,508
Fuel 3 (L. D. O.)	KL	3,834	2,947
Fuel 4 (LSHS)	KL		
<b>Heat Content (each fuel separately)</b>			
Fuel 1 (Indian Coal)	Million kcal	11,063,362	10,016,993
Fuel 1 (Imported Coal)	Million kcal	2,673,747	2,420,865
Fuel 1 (Washed Coal)	Million kcal	2,899,085	2,624,890
Fuel 2 (F. O.)	Million kcal	166,032	127,567
Fuel 3 (L. D. O.)	Million kcal	34,352	26,402
Fuel 4 (LSHS)	Million kcal		
<b>Total Heat Content</b>		<b>16,836,578</b>	<b>15,216,716</b>
<b>Total Fuel Cost</b>		3,070	
Fuel 1 (Indian Coal)	Rs Crore	710.77	758.13
Fuel 1 (Imported Coal)	Rs Crore	451.15	273.31
Fuel 1 (Washed Coal)	Rs Crore	172.51	135.49
Fuel 2 (F. O.)	Rs Crore	44.13	33.91
Fuel 3 (L. D. O.)	Rs Crore	14.21	10.92
Fuel 4 (LSHS)	Rs Crore		
Fuel 3 (HSD)	Rs Crore		
<b>Total Fuel Cost</b>	Rs Crore	<b>1,392.78</b>	<b>1,211.77</b>

**Table 27: Fuel Cost of Uran Power Station for FY 2009-10 (Rs. Crore)**

Uran	Units	April-March (Audited) FY 2009-10	Trued-up for FY 2009-10
<b>Operational Parameters</b>			
Total Capacity	MW	852	852
Gross Generation	MU	5,109	5,109
Auxiliary Energy Consumption	%	1.94%	2.40%
Auxiliary Energy Consumption	MU	99.06	122.62
Net Generation	MU	5,010	4,987
Heat Rate	kcal/kWh	2,035	1,980
<b>Fuel Parameters (for each primary and secondary fuel)</b>			
<b>Calorific Value</b>			
Fuel 1 - APM Gas	Kcal/SM3	8,310	8,310
Fuel 1 (BPCL+IOCL)	Kcal/SM3	9,673	9,673
Fuel 1 (RIL)	Kcal/SM3	9,347	9,347
Fuel 2 (F. O.)	Kcal/Kg		
Fuel 3 (L. D. O.)	Kcal/Kg		
Fuel 4 (LSHS)	Kcal/Kg		
<b>Landed Fuel Price per unit</b>			
Fuel 1 - APM Gas	Rs./1000SM3	3,110	3,110
Fuel 1 IOCL / BPCL	\$ / MMBTU	13,420	13,420
Fuel 1 - RIL Gas	\$ / MMBTU	10,506	10,506
Fuel 2 (F. O.)	Rs/KL		
Fuel 3 (L. D. O.)	Rs/KL		
Fuel 4 (LSHS)	Rs/KL		
Fuel 3 (HSD)	Rs/KL		
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>			
<b>Specific Fuel Consumption</b>			
Fuel 1 - APM Gas	SM3/kWh	0.17	0.17
Fuel 1 - RLNG Gas - HLPL / IOCL / BPCL	SM3/kWh	0.01	0.01
Fuel 1 - RIL Gas	SM3/kWh	0.06	0.06
Fuel 2 (F. O.)	SM3/kWh	-	
Fuel 3 (L. D. O.)	SM3/kWh	-	
Fuel 4 (LSHS)	SM3/kWh	-	
<b>Total Fuel Consumption</b>			
Fuel 1 - APM Gas	m3/kWh	848	825
Fuel 1 - RLNG Gas - HLPL / IOCL / BPCL	m3/kWh	29	27.7
Fuel 1 - RIL Gas	m3/kWh	329	320.2
Fuel 2 (F. O.)	KL		

Uran	Units	April-March (Audited) FY 2009-10	Trued-up for FY 2009-10
Fuel 3 (L. D. O.)	KL		
Fuel 4 (LSHS)	KL		
<b>Heat Content (each fuel separately)</b>			
Fuel 1 - APM Gas	Million kcal	7,046,231	6,855,316
Fuel 1 - RLNG Gas - HLPL / IOCL / BPCL	Million kcal	275,673	268,203
Fuel 1 - RIL Gas	Million kcal	3,076,334	2,992,982
Fuel 2 (F. O.)	Million kcal	-	
Fuel 3 (L. D. O.)	Million kcal	-	
Fuel 4 (LSHS)	Million kcal	-	
<b>Total Heat Content</b>		<b>10,398,238</b>	<b>10,116,501</b>
<b>Total Fuel Cost</b>			
		2,035	
Fuel 1 - APM Gas	Rs Crore	264	257
Fuel 1 - RLNG Gas - HLPL / IOCL / BPCL	Rs Crore	38	37
Fuel 1 - RIL Gas	Rs Crore	346	336
Fuel 2 (F. O.)	Rs Crore	-	
Fuel 3 (L. D. O.)	Rs Crore	-	
Fuel 4 (LSHS)	Rs Crore	-	
Other Adjustments (FEV)		0.61	0.61
<b>Total Fuel Cost</b>	Rs Crore	<b>648.35</b>	<b>630.80</b>

**Table 28: Fuel Cost of Khaparkheda Thermal Power Station for FY 2009-10 (Rs. Crore)**

Khaparkheda TPS	Units	April-March (Audited) FY 2009-10	Approved for FY 2009-10
<b>Operational Parameters</b>			
Total Capacity	MW	840.00	840.00
Gross Generation	MU	6006.26	6006.26
Auxiliary Energy Consumption	%	9.50%	9.17%
Auxiliary Energy Consumption	MU	570.74	550.77
Net Generation	MU	5435.53	5455.49
Heat Rate	kcal/kWh	2811.00	2612.20
<b>Fuel Parameters (for each primary and secondary fuel)</b>			
<b>Calorific Value</b>			
		3489.00	
Fuel 1 (Indian Coal)	Kcal/Kg	3194.00	3194.00
Fuel 1 (Imported Coal)	Kcal/Kg	5579.00	5579.00
Fuel 1 (Washed Coal)	Kcal/Kg	4198.00	4198.00

<b>Khaparkheda TPS</b>	<b>Units</b>	<b>April-March (Audited) FY 2009-10</b>	<b>Approved for FY 2009-10</b>
Fuel 2 (F. O.)	Kcal/Kg	10154.00	10154.00
Fuel 3 (L. D. O.)	Kcal/Kg	10722.00	10722.00
Fuel 4 (LSHS)	Kcal/Kg		
<b>Landed Fuel Price per unit</b>			
Fuel 1 (Indian Coal)	Rs/MT	1412.04	1364.78
Fuel 1 (Imported Coal)	Rs/MT	6773.06	6773.06
Fuel 1 (Washed Coal)	Rs/MT	1629.86	1629.86
Fuel 2 (F. O.)	Rs/KL	27090.35	27090.35
Fuel 3 (L. D. O.)	Rs/KL	35589.95	35589.95
Fuel 4 (LSHS)	Rs/KL	0.00	0.00
Fuel 3 (HSD)	Rs/KL	36670.69	36670.69
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>			
<b>Specific Fuel Consumption</b>			
Fuel 1 (Indian Coal)	Kg/kWh	0.55	0.55
Fuel 1 (Imported Coal)	Kg/kWh	0.06	0.04
Fuel 1 (Washed Coal)	Kg/kWh	0.19	0.15
Fuel 2 (F. O.)	ml/kWh	0.87	1.57
Fuel 3 (L. D. O.)	ml/kWh	0.24	0.43
Fuel 4 (LSHS)	ml/kWh		
<b>Total Fuel Consumption</b>			
Fuel 1 (Indian Coal)	MT	3,294,097	3,332,588
Fuel 1 (Imported Coal)	MT	380,841	220,581
Fuel 1 (Washed Coal)	MT	1,145,568	881,777
Fuel 2 (F. O.)	KL	5,237	9,436
Fuel 3 (L. D. O.)	KL	1,430	2,577
Fuel 4 (LSHS)	KL	-	
<b>Heat Content (each fuel separately)</b>			
Fuel 1 (Indian Coal)	Million kcal	11,493,106	10,644,285
Fuel 1 (Imported Coal)	Million kcal	1,328,754	1,230,619
Fuel 1 (Washed Coal)	Million kcal	3,996,888	3,701,698
Fuel 2 (F. O.)	Million kcal	49,614	89,393
Fuel 3 (L. D. O.)	Million kcal	13,079	23,565
Fuel 4 (LSHS)	Million kcal		
<b>Total Heat Content</b>		<b>16,881,440</b>	<b>15,689,560</b>
<b>Total Fuel Cost</b>		2810.64	
Fuel 1 (Indian Coal)	Rs Crore	465.14	454.82
Fuel 1 (Imported Coal)	Rs Crore	257.95	149.40
Fuel 1 (Washed Coal)	Rs Crore	186.71	143.72
Fuel 2 (F. O.)	Rs Crore	14.19	25.56



<b>Khaparkheda TPS</b>	<b>Units</b>	<b>April-March (Audited) FY 2009-10</b>	<b>Approved for FY 2009-10</b>
Fuel 3 (L. D. O.)	Rs Crore	5.09	9.17
Fuel 4 (LSHS)	Rs Crore		
<b>Total Fuel Cost</b>	Rs Crore	<b>929.07</b>	<b>782.67</b>

#### 4.10 Other Variable Charges

4.10.1 As regards the Other Variable Charges for FY 2009-10, the Commission has undertaken the Truing up and has considered the actual charges of Rs. 354.27 Crore for Truing up purposes.

**Table 29: Other Variable Charges for FY 2009-10 (Rs. Crore)**

<b>Stations</b>	<b>Bhusawal</b>	<b>Chandrapur</b>	<b>Khaparkheda</b>	<b>Koradi</b>	<b>Nashik</b>	<b>Paras</b>	<b>Parli</b>	<b>Uran</b>
Other variable charges								
Coal Handling Contract Charges	4.79	12.74	2.45	6.02	5.33	0.88	2.76	-
Demurrage on Coal Wagons	1.43	6.17	7.28	26.48	2.27	2.06	1.70	-
Siding charges	-	-	-	0.00	0.39	0.03	-	-
Penalties for Overloading	-	-	-	-	-	-	-	-
Commission to agents	0.18	2.07	0.70	1.41	-	0.03	0.64	-
Payments to Rly Staff Posted at TPS	0.15	0.17	-	0.15	0.19	-	0.03	-
Coal Stock Maintenance Cost	-	-	-	-	-	-	-	-
Other Coal Related Cost	0.78	1.10	0.49	16.70	2.43	1.12	3.15	-
Oil Handling Contract Charges	-	0.04	-	-	-	-	0.09	-
Demurrage on Oil Tankers	-	0.07	0.04	0.85	0.06	0.13	-	-
Stock shortages on Physical Verification of Coal Stock	9.74	21.53	1.66	1.30	0.07	0.68	15.37	-
Stock shortages on Physical Verification of Oil Stock	-	0.33	-	-	-	-	-	-
<b>OPERATING EXPENSES</b>	-	-	-	-	-	-	-	-
Cost of Water	13.70	17.71	2.69	5.26	37.84	0.30	71.85	0.83
Lubricants and Consumable Stores	1.14	5.67	5.37	4.09	11.21	0.95	4.04	0.22
Stations supplies	-	-	-	4.71	-	-	-	-
<b>Total Other Variable Charges</b>	<b>31.90</b>	<b>67.60</b>	<b>20.68</b>	<b>66.98</b>	<b>59.79</b>	<b>6.18</b>	<b>99.63</b>	<b>1.05</b>

## **4.11 Operation and Maintenance expenses**

### **MSPGCL's Submission**

4.11.1 MSPGCL submitted that in the APR Order for FY 2009-10, the Commission had approved O&M expenses of Rs 1000.01 Crore. Against the same, the actual O&M expenses have been Rs. 1119.19 Crore. With regards to the deviation between approved and actual O&M expenses, MSPGCL submitted following points before the Commission:

**A. Non-consideration of Gross expenses in the base year**

MSPGCL submitted that the gross O&M expenses as per the books of accounts for FY 2006-07 for the company as a whole had been Rs 948.12 Crore. The Commission had considered the net O&M expenses of Rs. 854.45 Crore as base O&M expenses for working out the allowed normative expenses for future years.

**B. Non-consideration of impact of Pay Revision in FY 2009-10**

In the APR Order for FY 2009-10, the Commission had not considered the impact of pay revision in FY 2009-10.

**C. True-up of O&M expenses for previous years (FY 2007-08 and FY 2008-09)**

MSPGCL submitted that in the Judgment dated April 27, 2011 in Appeal 191 of 2009 the Hon'ble ATE has given the liberty to MSPGCL to approach the Hon'ble Commission for consideration of gross O&M expenses. The excerpt from the judgment is provided below:

*"...we give liberty to the Appellant to place the issue of gross/ net O&M expenses raised in this Appeal before the State Commission for consideration in subsequent True Up or Tariff petition and in that event the State Commission may consider the same to ensure that the Appellant is not denied of the legitimate O&M expenses on account of booking of O&M expenses to Capital Works."*

MSPGCL requested the Commission to consider the submissions and allow MSPGCL to recover the expenses on gross basis.

### **Commission's Analysis and Ruling**

4.11.2 The Commission, vide Order dated March 5, 2010 in Case 16 of 2008 approved the O&M expenses by revising the base O&M figures for FY 2006-07. In the said Order the Commission ruled as under,

*“MSPGCL has proposed to consider the capitalisation of O&M expenses to the extent of Rs. 61.25 Crore towards the upcoming stations as against the gross O&M expenses of Rs. 28.99 Crore allocated to the upcoming stations. The capitalisation of O&M expenses means that the expenses incurred on Projects under development/construction are capitalised as part of capital cost of the Project and not booked as revenue expenditure. In case of Generating Company with some existing stations and some upcoming stations, the total O&M expenses are allocated between the existing stations and upcoming stations. The expenses allocated to existing stations are considered as revenue expenses and expenses allocated to stations under development are considered as expenses to be capitalised as part of Project Cost. The gross expenses allocated to the upcoming stations cannot be lower than the expenses capitalised as the entire expenses allocated to upcoming stations have to be capitalised. Therefore, the Commission has considered the total gross O&M expenses of FY 2006-07 as Rs 948.11 Crore and after deducting the capitalised O&M expenses of Rs. 93.66 Crore, the net actual O&M expenses works out to Rs 854.45 Crore”*

4.11.3 Based on the above observation, the O&M expense for FY 2006-07 was fixed as Rs. 854.45 Crore. The Commission approved the escalation rate of 5.38% and 5.29%, based on the CPI and WPI index, to arrive at the O&M expenses for the FY 2007-08 and FY 2008-09 respectively.

4.11.4 Further, the Commission in its Order dated September 12, 2010, in Case No 102 of 2009 had considered the impact of Pay revision of Rs. 90.05 Crore and Earned Leave Encashment of Rs. 35.47 Crore for Truing up of the O&M expense for FY 2008-09.

4.11.5 The Commission did not consider any impact of the pay revision for FY 2009-10 as MSPGCL failed to furnish any report in support of actual impact of pay revision for the FY 2009-10. However, the Commission holds that it will consider the impact of pay revision during the final true up process when the Audited Account is available before the Commission.

4.11.6 MSPGCL has submitted O&M expenses under the following heads.

**Table 30: MSPGCL’s submission on O&M expense for FY 2009-10**

	<b>Employee Costs</b>	<b>A&amp;G Expenses</b>	<b>Repair and Maintenance Expenses</b>	<b>Total O&amp;M Expense</b>
FY 2009-10	534.09	81.32	503.78	1119.19

4.11.7 The Commission in its previous Order dated September 12, 2010, had approved the escalation rate of 5.48% to be applied on the normative O&M expenses of FY 2008-09 to arrive at the normative O&M expense for the FY 2009-10. Accordingly the O&M expenses for FY 2009-10 are Rs.1001.01 Crore.

4.11.8 The Commission has considered the normative O&M expenses for the FY 2009-10 as approved in the previous APR Order. Apart from the normative O&M expense, the Commission has considered Rs.95.51 Crore towards the impact of the pay revision. The total O&M expenses approved for FY 2009-10 are Rs 1095.52 Crore. The Commission has considered the variation in actual and approved O&M expenses as efficiency loss and has carried out the sharing of losses as provided in detail in Section 4.

#### **4.12 Capital Expenditure (Capex) and Capitalisation**

##### **MSPGCL Submission**

4.12.1 MSPGCL had submitted the details of the Capital Expenditure for FY 2009-10 in the relevant format of the Petition.

##### **Commission’s Analysis and Ruling**

4.12.2 The Commission, vide Order dated September 12, 2010 in Case No. 102 of 2009 had approved the Capitalization for all the DPR items for which the “in principle approval” was granted. But for the Non DPR items the Commission had restricted the capitalization to 50% on ad-hoc basis.

4.12.3 In this regard Commission vide its Order dated August 17, 2009 had directed the appellant to club the Non-DPR schemes of similar nature and convert into large DPR schemes for approval of the Commission.

4.12.4 In this regard the Hon'ble ATE has ruled that as the Commission's Order was issued during the mid year of FY 2009-10 and hence the same cannot be applied retrospectively. The relevant extract from the Judgment of the Hon'ble ATE dated August 04, 2011 in Appeal No. 199 of 2010 is given below:

*“We are of the opinion that these directions cannot be applied retrospectively. Therefore, instead of restricting the expenditure on non-DPR schemes for FY 2008-09 and 2009-10 to 50% on ad-hoc basis, the State Commission should allow expenditure on non-DPR schemes for the FY 2008-09 and 2009-10 after prudence check”*

4.12.5 As regards the capitalization for FY 2009-10, the Commission has undertaken the Truing up and has considered the actual capitalization of Rs. 246.47 Crore after Truing up.

**Table 31: Capitalization for FY 2009-10 (Rs. Crore)**

<b>Stations</b>	<b>Actual</b>	<b>Trued Up</b>
Bhusawal	7.76	7.76
Chandrapur	75.15	75.15
Khaparkhedda	27.49	27.49
Koradi	22.05	22.05
Nashik	20.85	20.85
Paras	0.67	0.67
Parli	71.48	71.48
Uran	15.46	15.46
Hydro	5.56	5.56
<b>Total</b>	<b>246.47</b>	<b>246.47</b>

#### **4.13 Depreciation and Advance Against Depreciation (AAD)**

##### **MSPGCL's Submission**

4.13.1 The Petitioner submitted that the eligible amount of Depreciation and AAD for FY 2009-10 as per the rates specified in the MERC (Terms and Conditions of Tariff) Regulations, 2005 was Rs 366.94 Crore. The Petitioner submitted that the Commission has been considering the Advance Against Depreciation for MSPGCL as a whole. The Petitioner has challenged the approach of the Commission in Appeal 191 of 2009. The Petitioner added that the Hon'ble ATE has given its Judgment in favour of the Petitioner.

### **Commission's Analysis and Ruling**

4.13.2 As regards Advance Against Depreciation, the Commission has calculated the same as per Regulation 32.3 of the MERC (Terms and Conditions of Tariff) Regulations, 2005.

*“Where, in respect of a generating station, the actual amount of loan repayment in any financial year exceeds the amount of depreciation allowable under Regulation 34.4.1, the Generating Company shall be allowed an advance against depreciation for the difference between the actual amount of such repayment and the allowable depreciation in respect of such generating station, for such financial year:”*

4.13.3 As per the Hon'ble ATE judgment in Appeal No. 137 of 2008, the Commission has allowed depreciation on the assets which are added during the year, the Commission has calculated the Depreciation and Advance against Depreciation, Station wise as per Regulation 32.3 of MERC (Terms and conditions of Tariff) Regulations, 2005. The approved Depreciation and Advance Against Depreciation are provided in the table below:

**Table 32: Depreciation and AAD for FY 2009-10 (Rs. Crore)**

<b>Stations</b>	<b>Actual/Audited</b>	<b>Approved</b>
Bhusawal	9.23	9.23
Chandrapur	115.00	115.00
Khaparkheda	82.26	82.26
Koradi	47.45	47.45
Nashik	21.42	21.42
Paras	1.39	2.23
Parli	26.14	23.96

Stations	Actual/Audited	Approved
Uran	55.68	55.42
Hydro	8.38	8.38
<b>Total</b>	<b>366.94</b>	<b>365.35</b>

#### 4.14 Interest Expenses and Other Finance Charges

##### MSPGCL's Submission

4.14.1 MSPGCL submitted that the actual gross long term interest expenses for the FY 2009-10 were Rs 866.02 Crore for MSPGCL as an entity. MSPGCL accordingly submitted the project details along with the lender's name to substantiate the actual expenditure incurred as interest expenses on long term loans.

4.14.2 The net interest expense for existing plants of MSPGCL for FY 2009-10 are provided below:

**Table 33: Net interest expense for Old stations in FY 2009-10**

	Existing Project	Paras Unit 3	Parli Unit 6
Generic Loan	22.93		
Thermal +Gas	45	104.32	81.94
Hydro	4.38		
Debt restructuring premium	4.44		
Gross Interest Expense	76.75	104.32	81.94
Less Capitalization			
<b>Net Interest Expense</b>	<b>76.75</b>	<b>104.32</b>	<b>81.94</b>

4.14.3 Regarding Other Finance Charges, MSPGCL submitted that it has paid Rs. 16.63 Crore towards "Other Finance Charges" out of which Rs. 5.99 Crore towards the Guarantee charges. The summary of these finance charges for existing stations for FY 2009-10 based on Audited Accounts is provided in the Table below:

**Table 34: MSPGCL submission regarding Other Finance Charges for FY 2009-10 (Rs. Crore)**

Particulars	Amount
Guarantee Charges	5.99
Finance Charges	3.94

<b>Particulars</b>	<b>Amount</b>
SBI Lease Rental	6.70
Consumer Security Deposits	0.002
<b>Total Other Finance Charges</b>	<b>16.63</b>

4.14.4 The overall interest and finance charges for FY 2009-10 work out as Rs. 93.38 Crore which may be considered for true-up.

#### **Commission's Analysis and Ruling**

4.14.5 MSPGCL submitted that the entire capital expenditure has been funded through 100% debt and the same has been considered by the Commission. The Commission has considered the effective rate of interest based on the interest cost submitted by MSPGCL.

4.14.6 The total interest and finance charges for FY 2009-10 as approved by the Commission after Truing up work out to be Rs. 111.57 Crore against the Rs. 93.38 Crore submitted by the MSPGCL.

**Table 35: Interest and finance Charges for FY 2009-10 (Rs. Crore)**

<b>Stations</b>	<b>Actual/Audited</b>	<b>Trued up</b>
Bhusawal	3.70	4.44
Chandrapur	26.09	33.54
Khaparkheda	9.28	10.47
Koradi	15.40	18.81
Nashik	9.89	11.00
Paras	0.30	0.51
Parli	9.23	11.90
Uran	14.83	15.35
Hydro	4.68	5.55
<b>Total</b>	<b>93.38</b>	<b>111.57</b>



## 4.15 Interest on Working Capital

### MSPGCL's Submission

4.15.1 MSPGCL further submitted that the MERC (Terms and Conditions of Tariff) Regulations, 2005 stipulates that the rate of Interest on Working Capital shall be equal to the short term Prime Lending Rate of the State Bank of India. Accordingly the normative interest rate of 13% prevalent at the time of application for determination of Tariff for FY 2009-10 has been considered for computing the Interest on Working Capital. MSPGCL submitted that the actual Interest on Working Capital as per the books of accounts is Rs 196.51 Crore. The interest on working capital for each Unit of thermal stations and aggregate for Hydro Stations for FY 2009-10 is given in the following table.

**Table 36: Interest on Working Capital for FY 2009-10 (Rs Crore)**

<b>Station</b>	<b>2009-10</b>
Bhusawal	29.16
Chandrapur	90.51
Nasik	55.64
Koradi	43.57
Paras	2.92
Parli	38.17
Uran	28.10
Khaperkheda	43.16
Hydro	8.12
<b>Total</b>	<b>339.35</b>

### Commission's Analysis and Ruling

4.15.2 The Commission has estimated the normative working capital requirement and interest thereof for FY 2009-10 based on the revised expenses approved in this Order after Truing up. However, Interest on Working Capital is a controllable parameter as defined under the MERC (Terms and Conditions of Tariff) Regulations, 2005 and the Commission has therefore, computed the sharing of gains/losses on the basis of difference between the normative working capital interest and the actual working capital interest incurred.

4.15.3 Further, the MERC (Terms and Conditions of Tariff) Regulations, 2005 stipulate that rate of Interest on Working Capital shall be considered on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on the date on which the Application for determination of tariff is made. As the short-term Prime Lending Rate of State Bank of India at the time when MSPGCL filed the Petition for tariff determination for FY 2009-10 was 13%, the Commission has considered the interest rate of 13% for estimating the normative Interest on Working Capital. The station wise interest on working capital as claimed by MSPGCL and as approved by the Commission is as shown in the table below.

**Table 37: Approved Interest on Working Capital for FY 2009-10 (Rs. Crore)**

<b>Stations</b>	<b>MSPGCL</b>	<b>Approved</b>
Bhusawal	29.16	23.42
Chandrapur	90.51	83.53
Khaparkheda	43.16	38.35
Koradi	43.57	34.67
Nashik	55.64	49.12
Paras	2.92	2.54
Parli	38.17	34.18
Uran	28.10	27.38
Hydro	8.12	8.09
<b>Total</b>	<b>339.35</b>	<b>301.28</b>

#### **4.16 Return on Equity**

##### **MSPGCL's Submission**

4.16.1 MSPGCL submitted that there has been no change in the equity base during the year and therefore there is no deviation in the allowable returns to the company

##### **Commission's Analysis and Ruling**

4.16.2 The Commission has considered 14% Return on Equity as specified in Regulation 34.1 of MERC (Terms and Conditions of Tariff) Regulations, 2005.

4.16.3 Station wise return on equity capital as submitted by MSPGCL and as allowed by the Commission is as shown in the table below:

**Table 38: MSPGCL's submission regarding RoE for FY 2009-10 (Rs. Crore)**

<b>Stations</b>	<b>MSPGCL</b>	<b>Approved by Commission</b>
Bhusawal	13.73	13.73
Chandrapur	107.58	107.58
Khaparkheda	126.11	126.11
Koradi	23.33	23.33
Nashik	27.73	27.73
Paras	1.20	1.20
Parli	19.46	19.46
Uran	39.73	39.73
<b>Total</b>	<b>358.88</b>	<b>358.88</b>

#### 4.17 Other Debits

##### MSPGCL's Submission

4.17.1 MSPGCL submitted that as per the audited expenses, there are Other debits to the tune of Rs.41.82 Crore for the FY 2009-10. The details of the same are provided below:

**Table 39: MSPGCL's submission regarding Other Debits for FY 2009-10 (Rs. Crore)**

<b>Particulars</b>	<b>AG Code</b>	<b>Actual</b>
Material Cost Variance (O&M)	79.12, 79.13	-0.08
Coal Cost Variance Accounts	79.125	-12.08
Bad and Doubtful Debts written off/ Provided for	79.4	0.05
Miscellaneous Losses and write-off	79.5, 79.72	53.27
Intangible Assets written off	79.71, 79.72	0.67
<b>Total</b>		<b>41.82</b>

##### Commission's Analysis and Ruling

4.17.2 MSPGCL has claimed an amount of Rs 37.62 Crore as loss incurred due to Obsolesce in Stores and Spares. The Commission asked the break up of Slow-Moving, Non-moving and Obsolete inventory for the FY 2008-09, FY 2009-10 and FY 2010-11. MSPGCL submitted that it has a policy of conducting the exercise for identifying slow-moving, non-moving and obsolete inventory and makes the provision for a loss according to the accounting policy of 30% for slow-moving, 60% for non-moving and 100% for obsolete items.

4.17.3 The closing inventory as on 31st March of the respective years as per the category wise data submitted by the MSPGCL to the Commission is tabulated below

Type of Closing Inventory	Financial Year (Rupees)	
	FY 2008-09	FY 2009-10
Non-Moving	97,46,51,447	154,40,46,953
Obsolete	9,51,06,646	7,91,01,830
<b>Total</b>	<b>106,97,58,093</b>	<b>162,31,48,783</b>
Closing Inventory as per Financial Statement	6,686,450,168	7,056,932,426
% of Non-Moving to the closing inventory	<b>16%</b>	<b>23%</b>

4.17.4 The Commission observed that the percentage of Non-Moving and Obsolete spares to the closing inventory of spares is 16% for the FY 2008-09 and 23% for the FY 2009-10.

4.17.5 There is increase in such inventory year on year and hence it indicates that MSPGCL may not have proper monitoring system for identification of such assets and also it has no alternate policy for utilization of such spares. Therefore the Commission has concluded that the loss of Rs 37.62 Crore claimed as loss on obsolete spares should be dis-allowed. Therefore, the Commission approves Rs.4.20 Crore as “other debits”.

#### **4.18 Prior Period Items**

##### **MSPGCL’s Submission**

4.18.1 MSPGCL submitted that in the Audited Financial Statements for FY 2009-10, there has been recognition of Rs 26.44 Crore of prior period incomes and Rs 45.60 Crore as prior period expense, aggregating to Rs 19.16 Crore.

4.18.2 MSPGCL further submitted that the Commission while undertaking the True-up for FY 2008-09 had disallowed the recovery of fixed cost based on the deviation between normative and actual availability of the Units. In this regard, SLDC has provided revised availability for MSPGCL's stations for FY 2008-09 based on the normative parameters approved by the Commission in the APR Orders. Accordingly as an interim measure (pending the outcome of the judgment), MSPGCL requested the Commission to revise the calculation for normative recovery of fixed charges based on the revised availability.

**Table 40: Prior period items for FY 2009-10 (Rs. Crore)**

<b>Item Head/ Description</b>	<b>Amount</b>	<b>Impact on ARR (Increase/ Decrease)</b>	<b>Remarks</b>
Prior Period Incomes	26.44	Decrease	Compliance with AS-5
Prior Period Expenses	45.60	Increase	Compliance with AS-5
Net Prior Period Expenses	19.16		
Provision for Earned Leave Encashment	35.47	Increase	As per Order dt 17/18 Aug 2009
<b>Correction due to Revised Availability</b>	<b>21.14</b>	<b>Increase</b>	
<b>Total</b>	<b>75.77</b>		

4.18.3 MSPGCL requested the Commission to consider the aforementioned submissions as the same are income/expenses incurred by MSPGCL while remaining in its core business of power generation and allow a true-up of Rs. 75.77 Crore.

### **Commission's Analysis and Ruling**

4.18.4 The Commission in its Order dated March 5, 2010 in Case No. 16 of 2008 had allowed the petitioner to recover Rs.35.47 Crore towards the earned leave. The same is being now allowed in the Final True up for FY 2009-10. The Commission also allows the net prior period expense of Rs. 19.16 Crore. With regard to the revision in Annual Fixed Charges based on the revised Availability, certified by the SLDC, the Commission has already dealt the matter in Section 3.

#### 4.19 Income tax

4.19.1 MSPGCL submitted that an amount of Rs 69.96 Crore was paid towards income tax and Rs 0.05 Crore towards wealth tax for FY 2009-10.

##### Commission's Analysis and Ruling

4.19.2 For FY 2009-10, the Commission approves the Income Tax payment of Rs. 69.96 Crore and wealth tax of Rs. 0.05 on actual basis

#### 4.20 Reduction in Annual Fixed Charges on account of Reduction in Availability

4.20.1 As discussed in Section 3.1.1, the actual Availability of some of the Stations is lower than the revised normative Availability approved by the Commission after considering the CPRI recommendations. For such stations, the Commission has reduced the recovery of Annual Fixed Charges for FY 2009-10 on pro-rata basis. The calculation of AFC, and AFC disallowed by the Commission is shown in the table below.

**Table 41: Reduction in AFC for FY 2009-10 (Rs Crore)**

Station	AFC after Truing up	Actual Availability	Normative Availability	Reduced AFC	AFC to be disallowed
Bhusawal	148.94	77.22%	80.00%	143.76	5.18
Chandrapur	626.43	76.66%	80.00%	600.31	26.12
Khaparkheda	387.86	81.84%	80.92%	387.86	-
Koradi	310.45	57.88%	73.94%	243.03	67.43
Nashik	266.23	72.82%	78.58%	246.70	19.53
Paras	32.89	47.83%	80.00%	19.66	13.22
Parli	207.22	70.77%	80.00%	183.33	23.90
Uran	194.14	69.50%	78.87%	171.08	23.06
<b>Total</b>	<b>2,174.17</b>			<b>1,995.73</b>	<b>178.44</b>

#### 4.21 Revenue side Truing-up computation

4.21.1 MSPGCL provided the revenue recovered by it in the FY 2009-10, which is provided below:

**Table 42: Revenue Considered by MSPGCL in FY 2009-10 (Rs. Crore)**

Item	MSPGCL (overall)	Paras Unit-3	Parli Unit-6	Others	Existing
Revenue from sale of power (excluding FAC)	9335.08	400.84	387.90	0.00	8546.34
Revenue from FAC	971.74	41.86	21.91	0.00	907.97
Incentive	2.22	-	-	0.00	2.22
Revenue from sale of power to colonies	11.44	-	-	0.00	11.44
Revenue accrued from true-up order (Case 16 of 2008)	762.77	-	-	0.00	762.77
Sub-total	11083.25	442.70	409.81	0.00	10230.73
Non-Tariff Income	102.64	0.85	0.98	0.95	99.86
Total Revenue as per Accounts	11186.54	443.55	410.79	0.95	10330.59

4.21.2 MSPGCL submitted a comparison of approved revenue vis-à-vis the actual revenue earned during the year as given in the Table below

**Table 43: Revenue side True-up for FY 2009-10 (Rs. Crore)**

Revenue Side True-up	Approved (A)	Actual (Existing) (B)	True-Up (B-A)
Revenue	10936.36	10330.59	(605.77)
Less: Incentives	0.00	2.22	2.22
<b>Total</b>	<b>10936.36</b>	<b>10329.03</b>	<b>(607.98)</b>

## Commission's Analysis and Ruling

4.21.3 The Commission has considered the actual revenue submitted by MSPGCL for FY 2009-10 while carrying out Truing up of revenue.

**Table 44: Approved Revenue side True up for FY 2009-10 (Rs. Crore)**

Revenue Side True-up	Approved (A)	Actual (Existing) (B)	Approved in this Order
Revenue	10936.36	10330.59	10330.59
Less: Incentives	0.00	2.22	2.22
<b>Total</b>	<b>10936.36</b>	<b>10329.03</b>	<b>10329.03</b>

## 4.22 Sharing of Gains and Losses

### MSPGCL's Submission

4.22.1 MSPGCL submitted that the MERC (Terms and Conditions of Tariff) Regulations, 2005 have stipulated a mechanism of classification of controllable and uncontrollable expenses and treatment of sharing of gains and losses thereof. MSPGCL submitted that it has been facing serious cash flow issues on account of deferred True-up since FY 2005-06 on various heads of expenditures. In this regard, the classification of expenses as per MSPGCL is submitted in the table below:

**Table 45: Controllable and Uncontrollable factors proposed by MSPGCL**

Particulars	Treatment of expenses	MSPGCL's Remarks
Fuel Cost incl. Other Fuel Related Cost	Uncontrollable	Variation in prices and calorific value of fuels is uncontrollable, Controllable to the extent of rational operating norms given the ground realities and past performance
O&M Expenditure	Uncontrollable	Uncontrollable to the extent they arise due to factors such as increase in statutory levies, taxes, changes due to requirement of other utilities, departments and other bodies such as municipal authorities, changes in accounting policies, etc.



Particulars	Treatment of expenses	MSPGCL's Remarks
Interest on Loans	Uncontrollable	Interest cost is uncontrollable as the interest rate regime is determined by various external factors.
Other Finance Charges	Uncontrollable	Constitutes of components such as Guarantee fees, lease rentals which are imposed by Government, financial institutions, etc. and are uncontrollable
Interest on Working Capital	Uncontrollable	Uncontrollable as worked out on normative basis at target availability. Even though the extent of actual loan drawal may be lower, however the utility does have even higher working capital requirement than the approved limits which are met through internal cash flow management or deployment from funds available internally.
Depreciation and Advance Against Depreciation	Uncontrollable	Uncontrollable as depreciation is towards replacement cost of assets and AAD is to ensure cash flows to meet loan repayments
Income Tax	Uncontrollable	It is a statutory requirement
Return on Equity	Uncontrollable	Computed based on the principles outlined by the Commission in the Tariff Regulations
Non-Tariff Income	Uncontrollable	Controllable to the extent of recurring portion of non-tariff income

4.22.2 MSPGCL requested the Commission to allow the entire true-up amount as it believes that most of the expenses are incidental to generation business.

#### **Commission's Analysis and Ruling**

4.22.3 The Commission, vide MYT Order in Case No. 68 of 2006 dated April 25, 2007 stipulated that the gains and losses on account of controllable and uncontrollable factors will be shared between the Generating Company and the Licensee at the time of Truing up of ARR based on actuals, in accordance with Regulation 19 of the MERC (Terms and Conditions of Tariff) Regulations, 2005.

4.22.4 The Commission, therefore, in accordance with the provisions of MERC (Terms and Conditions of Tariff) Regulations, 2005 has allowed the expenses for FY 2009-10 based on revised performance parameters approved in this Order and has carried out the sharing of gains and losses under following heads:

- Sharing of losses in fuel expenses,
- Sharing of losses in O&M expenses,
- Sharing of Gains towards Interest on Working Capital.

4.22.5 In accordance with the MERC (Terms and Conditions of Tariff) Regulations, 2005, the Commission has shared 1/3rd of the gains and losses with the Distribution Licensees, while 2/3rd of gains are allowed to be retained by MSPGCL and 2/3rd of losses are to be borne by MSPGCL. The summary of Truing up for FY 2009-10 considering sharing of gains and losses is given in following Table:

**Table 46: Sharing of gains and losses for FY 2009-10 (Rs. Crore)**

Particulars FY 2009-10	Actual/ Audited	Approved after truing up (Entitlement as per Regulations/ Order)	Deviation	Efficiency gain and Loss	Net Entitlement
Fuel Related Expenses/Lease Rentals	8,064.37	6,926.81	(1,137.56)	(379.19)	7,306.00
Lease Rental	230.80	230.80			230.80
Operation and maintenance expenses	1,119.19	1,096.52	(22.67)	(7.56)	1,104.08
Employee Expenses		-	-	-	-
Administration and General expenses		-			-
Repair and Maintenance expenses		-			-
Depreciation, including AAD	366.94	365.35			365.35
Apportionment of HO Depreciation	-	-			-
Interest on Long-term Loan Capital	93.38	111.57			111.57
Interest on Working Capital	339.35	301.28	(38.07)	(12.69)	313.97
Misc debits	41.82	4.20			4.20
Earned cash encashment	35.47	35.47			35.47

Particulars FY 2009-10	Actual/ Audited	Approved after truing up (Entitlement as per Regulations/ Order)	Deviation	Efficiency gain and Loss	Net Entitlement
Income Tax*	70.01	70.01			70.01
Prior period expenses	19.16	19.16			19.16
True up on fixed cost disallowed in FY2008-09 (Including ATE Impact)	21.14	48.78			48.78
Total Revenue Expenditure	10,401.62	9,170.81			9609.36
Return on Equity Capital/Supervision Charges^	358.88	358.88			358.88
Aggregate Revenue Requirement	10,760.50	9,529.69			9968.24
Total Revenue	10328.37	10328.37			10328.37
Revenue from Sale of Power	10,228.51	10,228.51			10,228.51
Non Tariff Income*	99.86	99.86			99.86
Gap/(surplus)	432.13	-798.68			-360.13
Reduction in AFC					178.44
					-538.57
Total True Up Amount					(538.57)
Add True up for 2007-08 (APR Order for 2008-09)					46.66
True up amount (Case 16 of 2008) booked on accrual basis					762.22
Total Gap/(Surplus)					270.31

4.22.6 The total gap (deficit) allowed after the final True up is Rs. 270.31 Crore for the FY 2009-10.

## **5 ANNUAL PERFORMANCE REVIEW FOR FY 2010-11**

### **5.1 Performance Parameters**

5.1.1 Regulation 16.1 of the MERC (Terms and Conditions of Tariff) Regulations, 2005, stipulates as follows,

*“The Commission may stipulate a trajectory, which may cover one or more control periods, for certain variables having regard to the reorganization, restructuring and development of the electricity industry in the State. Provided that the variables for which a trajectory may be stipulated include, but are not limited to, generating station availability, station heat rate, transmission losses, distribution losses and collection efficiency.”*

5.1.2 The Commission, vide MYT Order dated January 2, 2007 in Case No. 68 of 2006 for MSPGCL had approved the trajectory of following performance parameters:

- Availability;
- Heat Rate;
- Auxiliary Consumption;
- Transit Loss and;
- Secondary Fuel Oil Consumption

### **5.2 Station-Wise Performance Parameters**

#### **MSPGCL’s Submission**

##### **1. Uran Gas Power Station**

###### **i. Availability and PLF**

MSPGCL submitted that installed capacity of GTPS, Uran is 852 MW. However, with effective from July 16, 2010, MSPGCL has scrapped its old open cycle Units (3 x 60MW = 180 MW). Subsequently, MSPGCL is operating the remaining four Units of 672 MW (4 x 108 + 2 x 120) under combined cycle operations. For operating the said Units, around 3.50 MMSCMD of gas is required. During FY 2009-10, the Availability of APM gas had been in the range of 2-2.50 MMSCMD. There had been an allocation of additional 1 MMSCMD gas by Ministry of Petroleum and Natural Gas (MoPNG) from D-6 gas fields of M/s Reliance Industries Limited. The supply from the said gas field commenced from April

2009. In April 2010, the allocation has been raised to 1.20 MMSCMD. For FY 2010-11, the supply from RIL has continued and correspondingly the overall PLF of the Units had been 80.21% in FY 2010-11.

**ii. Station Heat Rate**

The SHR during FY 2010-11 had been around 2019 kCal/kWh. The key reason for the increase in SHR is that the steam turbines of the combined cycle Units have not been overhauled for the past several years.

**iii. Auxiliary Consumption**

For FY 2009-10, the Auxiliary Consumption had been around 1.94%. For 2010-11, the consumption is in the range of 1.91%.

**iv. Fuel Price and Calorific Value**

MSPGCL submitted that the base price of APM gas has changed from Rs.3200/1000 SCM to \$4.20/MMBtu with effect from June, 2010. MSPGCL submitted the price and Calorific value of gas received from different sources which are summarized below:

**Table 47: Summary of Gas price and Calorific Value for FY 2010-11**

Parameter	Unit	APM Gas	RIL
Gas Price	\$/MMBtu	4.20	4.340*
Calorific Value	kCal/scm	8651	9227

\* including marketing margin

**2. Bhusawal Thermal Power Station**

**i. Availability and PLF**

MSPGCL submitted that the Availability during the period April to July 15, 2010 had been 66.10%. For the period July 16, 2010 to March 2011, the Availability had been 61.25%. Deviation in Availability and PLF is due to:

- Frequent coal mill choke up problems in monsoon period which resulted in a generation loss of around 45.37 MU.

- Less coal receipt during the period April 2009 to March 2010 which resulted in loss of around 155.62 MUs.
- Poor quality coal received from different sources, especially from DKU mines.

**ii. Station Heat Rate**

MSPGCL submitted that the actual SHR for April to July 15, 2010 was 2919 kCal/kWh. For the period July 16, 2010 to March 2011, the SHR had been 2808 kCal/kWh.

**iii. Specific Oil Consumption**

MSPGCL submitted that on account of the aforementioned reasons for SHR and PLF, the specific oil consumption has been on a higher side in FY 2010-11.

**iv. Auxiliary Consumption**

MSPGCL submitted that the Auxiliary Consumption during the period April to July 15, 2010 had been 10.99%. For the period July 16, 2010 to March 2011, the Auxiliary consumption had been 11.46%.

**3. Chandrapur Super Thermal Power Station**

**i. Availability and PLF**

MSPGCL submitted that FY 2010-11 had been an abnormal year in terms of actual rainfall being so low that water storage level in Erai Dam (supplying water to Chandrapur TPS) had gone down beyond the critical limits. A force Majeure condition prevailed in the station due to acute water shortage. MSPGCL added that it utilized such forced outage period for overhauling the Units. The Availability had been barely 56.75% in FY 2010-11.

**ii. Station Heat Rate**

MSPGCL submitted that the actual SHR in FY 2010-11 was 2764 kCal/kWh. The reasons for deviation are:

- Delay in implementation of the Capex schemes on account of practical difficulties and approval from the Commission and
- Partial loading in FY 2010-11.

**iii. Specific Oil Consumption**

MSPGCL submitted that considering the force majeure issues in the stations in FY 2010-11, the oil consumption was on higher side (around 4.53 ml/kWh).

**iv. Auxiliary Consumption**

MSPGCL submitted that the Auxiliary Consumption in FY 2010-11 had been 10.03% on account of partial loading of Units.

**v. Fuel Price and Calorific Value**

MSPGCL submitted that it has provided the envisaged fuel prices as per format 2.2. The consumption of imported coal and washed coal has been assessed based on the perceived availability of raw coal from domestic sources.

**4. Nasik Thermal Power Station**

**i. Availability and PLF**

MSPGCL submitted that the Availability in FY 2010-11 had been 71.03% due to loading constraints in Unit 1 and Unit 2.

**ii. Station Heat Rate**

MSPGCL submitted that the actual SHR in FY 2010-11 had been 2909 kCal/kWh where as CPRI recommended SHR had been 2833 kCal/kWh.

**iii. Specific Oil Consumption**

MSPGCL submitted that on account of partial loading of the Units especially during FY 2010-11, the Specific Oil Consumption has been on higher side. During FY 2010-11, there has been generation loss on account of such backdown instructions. The same has led to excessive oil support for stabilization of operations of the Units.

**iv. Auxiliary Consumption**

MSPGCL submitted that the Auxiliary Consumption for the station had been 10.56% in FY 2010-11. The same is below the normative Auxiliary Consumption of 10.95% approved by the Commission for FY 2010-11.

**5. Khaperkheda Thermal Power Station**

**i. Availability and PLF**

MSPGCL submitted that force majeure conditions prevailed in Chandrapur power station and the station was under forced shutdown for significant period of time. To compensate the loss in generation at Chandrapur, the overhauls of other Units of MSPGCL which were initially planned for FY 2010-11 were further deferred (even though AOH was not undertaken for more than 12 months) so that the Discom does not have to arrange for procurement of power at exorbitant prices.

**ii. Station Heat Rate (SHR)**

MSPGCL submitted that the actual SHR during FY 2010-11 had been 2658 kCal/kWh. Prolongation of Unit Overhauls leads to lowering of boiler efficiency due to soot deposition and scale deposition on boiler tubes. The key reasons for deviation in performance are summarized below:

- Partial loading
- Delayed overhauls

**iii. Specific Oil Consumption**

MSPGCL submitted that actual Specific Oil Consumption in FY 2010-11 had been 1.61 ml/kWh.

**iv. Auxiliary Consumption**

MSPGCL submitted that the Auxiliary Consumption in FY 2010-11 for Khaperkheda plant had been 9.76%. The same is largely on account of the partial loading of the Units.



## **6. Paras Thermal Power Station**

MSPGCL submitted that the Unit is around 42 years old as in FY 2010-11 and CPRI has suggested a road map to bring in efficiency improvements, however, MSPGCL added that incurring such huge expenditure on such old Unit does not give the required payback both technically and commercially over the life of the Unit. In light of the above, the management had decided not to implement the CPRI recommendation and removed the operations of the Unit under the PPA route. MSPGCL added that further with effect from June 18, 2010, the Unit stands withdrawn from service under the Power Purchase Agreement.

## **7. Parli Thermal Power Station**

### **i. Availability and PLF**

MSPGCL submitted that in FY 2010-11, the capacity of Parli station was derated to 664 MW. Availability during April 2010 to June 2010 had been around 72.51% and from July 2010 to March 2011, the Availability of remaining Units had been 57.27%.

### **ii. Station Heat Rate**

MSPGCL submitted that in the first three months, the SHR had been 3027 kCal/kWh. The same was 3134 kCal/kWh during the period July 2010 to March 2011.

### **iii. Specific Oil Consumption**

MSPGCL submitted that Specific Oil Consumption in FY 2010-11 was in the range of 8.25 ml/kWh in 2010-11. The key reason for the same was the low PLF in FY 2010-11 on account of prolonged COH of Paras Unit 4.

### **iv. Auxiliary Consumption**

MSPGCL submitted that Auxiliary Consumption in FY 2010-11 for Parli Plant had been 11.70%. The consumption was on higher side in FY 2010-11 on account of low PLF of the Units.

## 8. Koradi Thermal power Station

### i. Availability and PLF

The Petitioner submitted that the Availability during the period Apr-July 15, 2010 had been 53.18%. For the period July 16, 2010 to March 2011, the Availability had been 61.87%.

### ii. Station Heat Rate

MSPGCL submitted that the actual SHR for Apr-July 15, 2010 was 3516 kCal/kWh. For the period July 16, 2010 to March 2011, the SHR had been 3041 kCal/kWh.

### iii. Specific Oil Consumption

MSPGCL submitted that there had been a substantial increase in the Specific Oil Consumption due to poor coal quality, wet coal problems and CHP/Bunkering problems.

### iv. Auxiliary Consumption

MSPGCL submitted that the Auxiliary Consumption during the period April to July 15, 2010 had been 13.33%. For the period July 16, 2010 to March 2011, the Auxiliary Consumption had been 12.74%.

## Commission's Analysis and Ruling

### 5.3 Availability and PLF:

- 5.3.1 The Commission, at this stage has considered the Availability and PLF as approved in the ARR Order. Only for Uran Station, the Commission has approved the Availability and PLF as estimated by MSPGCL. The Commission has approved Availability and PLF for all the stations as tabulated below, however, the Commission would consider the deviations in actual Availability during Truing up exercise along with the reasons for deviations. The station-wise Availability and PLF as approved by the Commission in the MYT Order, projected by MSPGCL in the APR Petition, and approved by the Commission for FY 2010-11 is given in the following Table.

**Table 48: Availability for FY 2010-11 (Old Stations) (%)**

	Availability (%)
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Stations	ARR	Actual	Approved in this Order
Bhusawal	80.00%	62.70%	80.00%
Chandrapur	80.00%	56.75%	80.00%
Khaparkheda	82.19%	79.89%	82.19%
Koradi	73.94%	59.29%	73.94%
Nashik	78.58%	71.03%	78.58%
Paras	80.00%	0.00%	80.00%
Parli	80%	64.11%	80%
Uran	78.87%	80.21%	80.21%

**Table 49: Plant Load Factor for FY 2010-11 (%) (Old Stations)**

Plant Load Factor (%)			
Stations	ARR Order	Actual	Approved in this Order
Bhusawal	80.00%	62.70%	80.00%
Chandrapur	80.00%	56.75%	80.00%
Khaparkheda	82.19%	79.90%	82.19%
Koradi	73.94%	59.29%	73.94%
Nashik	78.58%	71.03%	78.58%
Paras	80.00%	0.00%	80.00%
Parli	80%	64.11%	80%
Uran	78.87%	80.21%	80.21%

#### 5.4 Auxiliary Consumption:

5.4.1 With regards to Auxiliary Consumption, the Commission has considered the norms suggested by CPRI. The summary of Auxiliary Consumption as approved in MYT Order, proposed by MSPGCL in the APR Petition and as approved by the Commission for FY 2010-11 is given in the following Table:

**Table 50: Auxiliary Consumption for FY 2010-11 (%) (Old Stations)**

Stations	ARR Order	MSPGCL	Approved in this Order
Bhusawal	10.55%	11.30%	10.55%
Chandrapur	9.15%	10.03%	9.15%
Khaparkheda	9.74%	9.76%	9.74%

Stations	ARR Order	MSPGCL	Approved in this Order
Koradi	10.70%	12.96%	10.70%
Nashik	10.95%	10.56%	10.95%
Paras	12.45%	14.82%	12.45%
Parli	11.15%	11.70%	11.15%
Uran	2.40%	1.91%	2.40%

## 5.5 Station Heat Rate (SHR)

5.5.1 With Regards to the Station Heat Rate (SHR), the Hon'ble ATE in Judgment in Appeal No 199 of 2010 has ruled as follows,

*“The improvement due to operational/management practices has been accounted for in the SHR determined for 2008-09 and 2009-10 but for further improvement a reasonable allowance for gestation period for implementation of the medium term measures would be required to be given. It is pleaded by the appellant that some of the schemes for efficiency improvement have been under consideration of the State Commission. Accordingly, we direct the State Commission to reconsider the Station Heat Rate for FY 2010-11, taking into account the gestation period required for carrying out the medium term measures and re-determine the fuel cost for FY 2010-11”*

5.5.2 With regard to Station Heat Rate (SHR) for FY 2010-11, the Commission has already appointed CPRI to undertake a detailed analysis of the Station Heat Rate, which can be achieved considering the slow process of implementation of mid-term and long-term DPR schemes by MSPGCL. The Commission will reconsider the SHR of different Stations as and when the CPRI study report is submitted and accepted by the Commission.

5.5.3 In this Order, the Commission has considered SHR as per CPRI report and not the values projected by MSPGCL. The summary of heat rate proposed by MSPGCL in the APR Petition and as approved by the Commission for FY 2010-11 is given in the following Table:

**Table 51: Station Heat rate for FY 2010-11 (Old Units)**

Stations	Station Heat Rate (kCal/kWh)	
	Actual	Approved in this Order
Bhusawal	2844.00	2733.90
Chandrapur	2,764	2617.00
Khaparkheda	2658	2559.90
Koradi	3,217	2964.80
Nashik	2,909	2721.90
Paras	4135.00	3186.50
Parli	3,102	2744.60
Uran	2019	1980.00

## 5.6 Transit Loss

5.6.1 The Commission at this stage has considered the Transit Loss as approved in the APR process based on the recommendation of CPRI for all the coal based stations for FY 2010-11. The summary of Transit Loss approved in APR Order, Transit Loss proposed by MSPGCL in the APR Petition and as approved by the Commission for FY 2010-11 is given in the following Table:

**Table 52: Transit Loss for FY 2010-11 (Old Units)**

Stations	APR Order	MSPGCL	Approved in this Order
Bhusawal	0.80%	0.98%	0.80%
Chandrapur	0.80%	0.00%	0.80%
Khaparkheda	0.80%	0.40%	0.80%
Koradi	0.80%	3.93%	0.80%
Nashik	0.80%	1.53%	0.80%
Paras	0.80%	0.00%	0.80%
Parli	0.80%	0.00%	0.80%

## 5.7 Secondary Fuel Oil Consumption

5.7.1 The Commission has considered the CPRI recommended Secondary Fuel Oil Consumption as recommended by CPRI for FY 2010-11. The summary of Secondary Fuel Oil Consumption as approved in MYT Order, proposed by MSPGCL in the APR Petition, and as approved by the Commission FY 2010-11 is given in the following Table:

**Table 53: Secondary Fuel Oil Consumption for FY 2010-11(Old Units)**

	Secondary Fuel Oil Consumption (ml/kWh)
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Stations	ARR	Actual	Approved in this Order
Bhusawal	2.00	8.81	2.00
Chandrapur	2.00	4.53	2.00
Khaparkheda	2.00	1.61	2.00
Koradi	2.81	8.78	2.81
Nashik	3.00	9.05	3.00
Paras	2.00	5.01	2.00
Parli	2.00	8.25	2.00

## 5.8 Energy Availability for FY 2010-11

5.8.1 The summary of actual gross generation during FY 2010-11, gross generation approved by the Commission in its APR Order for FY 2010-11, and revised estimates of gross generation for FY 2010-11 are given in the following Table:

**Table 54: Gross generation for FY 2010-11 (Old Units) (MU)**

Stations	Actual	Approved in this Order
Bhusawal	2431.20	3045.12
Chandrapur	10832.38	16398.72
Khaparkheda	5715.84	6047.87
Koradi	3577.51	4806.04
Nashik	5029.25	6057
Paras	55.83	111.94
Parli	3369.90	4474.96
Uran	5504.60	5089
<b>Total</b>	<b>36516.51</b>	<b>46030.65</b>

## 5.9 Fuel cost of generating Stations for FY 2010-11

**Table 55: Fuel Cost of Bhusawal Thermal Power Station for FY 2010-11 (Rs. Crore)**

Bhusawal TPS	Units	Apr-14July (Actual) (Vintage+PPA)	15July - 31st March (Actuals) (PPA)	April - March (Actuals)	Commission Approved
<b>Operational Parameters</b>					
Total Capacity	MW	470.00	420.00	434.38	435
Availability	%	66.10%	61.25%	62.70%	80.00%
PLF	%	66.10%	61.25%	62.70%	80.00%

<b>Bhusawal TPS</b>	<b>Units</b>	<b>Apr-14July (Actual) (Vintage+PPA)</b>	<b>15July - 31st March (Actuals) (PPA)</b>	<b>April - March (Actuals)</b>	<b>Commission Approved</b>
Gross Generation	MU	826.05	1605.15	2431.20	3045.12
Auxiliary Energy Consumption	%	10.99%	11.46%	11.30%	10.55%
Auxiliary Energy Consumption	MU	90.77	183.95	274.72	321.26
Net Generation	MU	735.28	1421.20	2156.48	2723.86
Heat Rate	kCal/kWh	2919.00	2808.00	2844.00	2733.90
<b>Fuel Parameters (for each primary and secondary fuel)</b>					
<b>Calorific Value</b>		2935.00	3115.00	3046.00	3046.000
Fuel 1 (Indian Coal)	Kcal/Kg	3033.00	2244.55	2510.00	2510.000
Fuel 1 (Imported Coal)	Kcal/Kg	6085.00	5188.28	5485.00	5485.000
Fuel 1 (Washed Coal)	Kcal/Kg	4495.00	4121.11	4239.00	4239.000
Fuel 2 (F. O.)	Kcal/Kg	10127.00	10128.48	10035.00	10035.000
Fuel 3 (L. D. O.)	Kcal/Kg	10875.00	10474.34	10598.00	10598.000
Fuel 4 (LSHS)	Kcal/Kg				
Fuel 3 (HSD)	Kcal/Kg				
<b>Landed Fuel Price per unit</b>					
Fuel 1 (Indian Coal)	Rs/MT	1917.80	1982.48	1962.22	1958.66
Fuel 1 (Imported Coal)	Rs/MT	6466.42	4178.95	4582.33	4582.33
Fuel 1 (Washed Coal)	Rs/MT	2117.19	2191.08	2158.41	2158.41
Fuel 2 (F. O.)	Rs/KL	28091.81	26512.43	27013.59	27013.59

<b>Bhusawal TPS</b>	<b>Units</b>	<b>Apr-14July (Actual) (Vintage+PPA)</b>	<b>15July - 31st March (Actuals) (PPA)</b>	<b>April - March (Actuals)</b>	<b>Commission Approved</b>
Fuel 3 (L. D. O.)	Rs/KL	36992.26	35207.10	35699.26	35699.260
Fuel 4 (LSHS)	Rs/KL				
Fuel 3 (HSD)	Rs/KL				
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>					
<b>Specific Fuel Consumption</b>					
Fuel 1 (Indian Coal)	Kg/kWh	0.33	0.37	0.35	0.43
Fuel 1 (Imported Coal)	Kg/kWh	0.05	0.11	0.09	0.05
Fuel 1 (Washed Coal)	Kg/kWh	0.60	0.39	0.46	0.32
Fuel 2 (F. O.)	ml/kWh	7.44	8.32	8.02	1.82
Fuel 3 (L. D. O.)	ml/kWh	0.67	0.84	0.78	0.18
Fuel 4 (LSHS)	ml/kWh				
<b>Total Fuel Consumption</b>					
Fuel 1 (Indian Coal)	MT	269,319	592,945	862,264	1,295,143
Fuel 1 (Imported Coal)	MT	39,495	184,496	223,991	155,191
Fuel 1 (Washed Coal)	MT	492,075	621,475	1,113,550	982,820
Fuel 2 (F. O.)	KL	6,149	13,356	19,505	5,549
Fuel 3 (L. D. O.)	KL	550	1,352	1,902	541
Fuel 4 (LSHS)	KL			-	
Fuel 3 (HSD)	KL				
<b>Heat Content (each fuel</b>					



<b>Bhusawal TPS</b>	<b>Units</b>	<b>Apr-14July (Actual) (Vintage+PPA)</b>	<b>15July - 31st March (Actuals) (PPA)</b>	<b>April - March (Actuals)</b>	<b>Commission Approved</b>
<b>separately)</b>					
Fuel 1 (Indian Coal)	Million kcal	790,451	1,847,024	2,637,475	3,250,810
Fuel 1 (Imported Coal)	Million kcal	115,918	574,705	690,623	851,225
Fuel 1 (Washed Coal)	Million kcal	1,444,240	1,935,895	3,380,135	4,166,173
Fuel 2 (F. O.)	Million kcal	58,099	126,212	184,311	51,954
Fuel 3 (L. D. O.)	Million kcal	5,102	12,083	17,185	4,893
Fuel 4 (LSHS)	Million kcal				
Fuel 3 (HSD)	Million kcal				
<b>Total Heat Content</b>	Million kcal	<b>2,413,810</b>	<b>4,495,919</b>	<b>6,909,729</b>	<b>8,325,054</b>
<b>Total Fuel Cost</b>					
Fuel 1 (Indian Coal)	Rs Crore	51.65	117.55	169.20	253.67
Fuel 1 (Imported Coal)	Rs Crore	25.54	77.10	102.64	71.11
Fuel 1 (Washed Coal)	Rs Crore	104.18	136.17	240.35	212.13
Fuel 2 (F. O.)	Rs Crore	17.27	35.41	52.69	14.99
Fuel 3 (L. D. O.)	Rs Crore	2.03	4.76	6.79	1.93
Fuel 4 (LSHS)	Rs Crore				
	Rs Crore				
<b>Total Fuel Cost</b>	Rs Crore	<b>200.68</b>	<b>370.99</b>	<b>571.67</b>	<b>553.84</b>

**Table 56: Fuel Cost of Chandrapur Thermal Power Station for FY 2010-11 (Rs. Crore)**

<b>Chandrapur TPS</b>	<b>Units</b>	<b>April - March (Actuals)</b>	<b>Approved by the Commission</b>
<b>Operational Parameters</b>			
Total Capacity	MW	2340	2340
Availability	%	56.75%	80.00%
PLF	%	56.75%	80.00%
Gross Generation	MU	10832.38	16398.72
Auxiliary Energy Consumption	%	10.03%	9.15%
Auxiliary Energy Consumption	MU	1086.49	1500.48
Net Generation	MU	9745.89	14898.24
Heat Rate	kCal/kWh	2764.00	2,617
<b>Fuel Parameters (for each primary and secondary fuel)</b>			
<b>Calorific Value</b>		3115.0	
Fuel 1 (Indian Coal)	Kcal/Kg	3,072	3072.00
Fuel 1 (Imported Coal)	Kcal/Kg	5,585	5585.00
Fuel 1 (Washed Coal)	Kcal/Kg	4,034	4034.00
Fuel 2 (F. O.)	Kcal/Kg	10,138	10138.16
Fuel 3 (L. D. O.)	Kcal/Kg	10,571	10571.40
Fuel 4 (LSHS)	Kcal/Kg		
Fuel 3 (HSD)	Kcal/Kg		
<b>Landed Fuel Price per unit</b>			
Fuel 1 (Indian Coal)	Rs/MT	1543.50	1555.94
Fuel 1 (Imported Coal)	Rs/MT	4750.87	4750.87
Fuel 1 (Washed Coal)	Rs/MT	1887.74	1887.74
Fuel 2 (F. O.)	Rs/KL	27231.57	27231.57
Fuel 3 (L. D. O.)	Rs/KL	36808.28	36808.28

Fuel 4 (LSHS)	Rs/KL		
Fuel 3 (HSD)	Rs/KL		
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>			
<b>Specific Fuel Consumption</b>			
Fuel 1 (Indian Coal)	Kg/kWh	0.67	0.65
Fuel 1 (Imported Coal)	Kg/kWh	0.05	0.02
Fuel 1 (Washed Coal)	Kg/kWh	0.16	0.12
Fuel 2 (F. O.)	ml/kWh	3.46	1.53
Fuel 3 (L. D. O.)	ml/kWh	1.07	0.47
Fuel 4 (LSHS)	ml/kWh		
<b>Total Fuel Consumption</b>			
Fuel 1 (Indian Coal)	MT	7,227,666	10,595,501
Fuel 1 (Imported Coal)	MT	497,831	401,424
Fuel 1 (Washed Coal)	MT	1,735,854	1,937,858
Fuel 2 (F. O.)	KL	37,487	25,030
Fuel 3 (L. D. O.)	KL	11,634	7,768
Fuel 4 (LSHS)	KL		
<b>Heat Content (each fuel separately)</b>			
Fuel 1 (Indian Coal)		22,514,178	32,549,378
Fuel 1 (Imported Coal)	Million kcal	1,550,745	2,241,955
Fuel 1 (Washed Coal)	Million kcal	5,407,185	7,817,319
Fuel 2 (F. O.)	Million kcal	354,586	236,752
Fuel 3 (L. D. O.)	Million kcal	104,909	70,046
Fuel 4 (LSHS)	Million kcal		
Fuel 3 (HSD)	Million kcal		
<b>Total Heat Content</b>	Million kcal	<b>29,931,603</b>	<b>42,915,450</b>
<b>Total Fuel Cost</b>	Million kcal		

Fuel 1 (Indian Coal)		1,115.59	1,649
Fuel 1 (Imported Coal)	Rs Crore	236.51	191
Fuel 1 (Washed Coal)	Rs Crore	327.68	366
Fuel 2 (F. O.)	Rs Crore	102.08	68
Fuel 3 (L. D. O.)	Rs Crore	42.82	29
Fuel 4 (LSHS)	Rs Crore		
Fuel 3 (HSD)	Rs Crore		
<b>Total Fuel Cost</b>	Rs Crore	<b>1,824.69</b>	<b>2,301.88</b>

**Table 57: Fuel Cost of Koradi Thermal Power Station for FY 2010-11 (Rs. Crore)**

<b>Koradi TPS</b>	<b>Units</b>	<b>Apr-15 July (Actual)</b>	<b>16 July-31st March (Actuals)</b>	<b>April - March (Actuals)</b>	<b>Approved by the Commission</b>
<b>Operational Parameters</b>					
Total Capacity	MW	1040	620	742	742.000
Availability	%	53.18%	61.87%	59.29%	73.94%
PLF	%	53.18%	61.87%	59.29%	73.94%
Gross Generation	MU	1331.04	2246.46	3577.51	4806.04
Auxiliary Energy Consumption	%	13.33%	12.74%	12.96%	10.70%
Auxiliary Energy Consumption	MU	177.43	286.20	463.63	514.25
Net Generation	MU	1153.61	1960.26	3113.88	4291.79
Heat Rate	kCal/kWh	3,516	3,041	3,217	2964.8
<b>Fuel Parameters (for each primary and secondary fuel)</b>					
<b>Calorific Value</b>		3,664.96	3,205.00	3374	
Fuel 1 (Indian Coal)	Kcal/Kg	3,690	3,383	3,509.33	3509.329
Fuel 1 (Imported Coal)	Kcal/Kg	6,259	-	6,259	6259.000

<b>Koradi TPS</b>	<b>Units</b>	<b>Apr-15July(Actual)</b>	<b>16July-31st March (Actuals)</b>	<b>April - March (Actuals)</b>	<b>Approved by the Commission</b>
Fuel 1 (Washed Coal)	Kcal/Kg	4,536	4,320	4,386.04	4386.038
Fuel 2 (F. O.)	Kcal/Kg	9,992	10,209	10,089.17	10089.169
Fuel 3 (L. D. O.)	Kcal/Kg	10,572	10,509	10,545.49	10545.487
Fuel 4 (LSHS)	Kcal/Kg				
<b>Landed Fuel Price per unit</b>					
Fuel 1 (Indian Coal)		1,642	1,816	1,751	1,696
Fuel 1 (Imported Coal)	Rs/MT	6,709	-	6,709	6,709
Fuel 1 (Washed Coal)	Rs/MT	1,649	1,753	1,721	1,721
Fuel 2 (F. O.)	Rs/MT	27,952	27,783	27,577	27,577
Fuel 3 (L. D. O.)	Rs/KL	35,738	36,975	36,665	36,665
Fuel 4 (LSHS)	Rs/KL	-	-	-	-
Fuel 3 (HSD)	Rs/KL	-	-	-	-
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>					
<b>Specific Fuel Consumption</b>					
Fuel 1 (Indian Coal)	Kg/kWh	0.59	0.50	0.54	0.49
Fuel 1 (Imported Coal)	Kg/kWh	0.01	-	0.01	0.00
Fuel 1 (Washed Coal)	Kg/kWh	0.32	0.43	0.39	0.28
Fuel 2 (F. O.)	Kg/kWh	11.78	5.67	7.95	2.54
Fuel 3 (L. D. O.)	ml/kWh	1.30	0.55	0.83	0.27
Fuel 4 (LSHS)	ml/kWh				
<b>Total Fuel Consumption</b>					
Fuel 1 (Indian	MT	789,040	1,127,534	1,916,574	2,333,823

<b>Koradi TPS</b>	<b>Units</b>	<b>Apr-15July(Actual)</b>	<b>16July-31st March (Actuals)</b>	<b>April - March (Actuals)</b>	<b>Approved by the Commission</b>
Coal)					
Fuel 1 (Imported Coal)	MT	19,087	-	19,087	14,070
Fuel 1 (Washed Coal)	MT	424,601	962,850	1,387,451	1,332,442
Fuel 2 (F. O.)	MT	15,685	12,744	28,429	12,227
Fuel 3 (L. D. O.)	KL	1,734	1,238	2,972	1,278
Fuel 4 (LSHS)	KL			-	
<b>Heat Content (each fuel separately)</b>					
Fuel 1 (Indian Coal)	Million kcal	2,891,802	3,613,746	6,505,549	8,190,151
Fuel 1 (Imported Coal)	Million kcal	69,952	-	69,952	88,066
Fuel 1 (Washed Coal)	Million kcal	1,556,148	3,085,934	4,642,082	5,844,143
Fuel 2 (F. O.)	Million kcal	146,222	121,388	267,609	115,092
Fuel 3 (L. D. O.)	Million kcal	15,636	11,100	26,736	11,499
Fuel 4 (LSHS)	Million kcal				
<b>Total Heat Content</b>	Million kcal	<b>4,679,761</b>	<b>6,832,168</b>	<b>11,511,929</b>	<b>14,248,950</b>
<b>Total Fuel Cost</b>					
Fuel 1 (Indian Coal)	Rs Crore	129.58	204.81	334.39	395.78
Fuel 1 (Imported Coal)	Rs Crore	13	-	12.80	9.44
Fuel 1 (Washed Coal)	Rs Crore	70	169	238.78	229.29
Fuel 2 (F. O.)	Rs Crore	44	35	79.25	33.72
Fuel 3 (L. D. O.)	Rs Crore	6	5	10.78	4.69

Koradi TPS	Units	Apr-15July(Actual)	16July-31st March (Actuals)	April - March (Actuals)	Approved by the Commission
Fuel 4 (LSHS)	Rs Crore				
<b>Total Fuel Cost</b>	Rs Crore	<b>262.45</b>	<b>413.55</b>	<b>676.00</b>	<b>672.91</b>

**Table 58: Fuel Cost of Parli Thermal Power Station for FY 2010-11 (Rs. Crore)**

Parli TPS	Units	April - March (Actuals)	Approved by the Commission
<b>Operational Parameters</b>			
Total Capacity	MW	638.47	638
Availability*	%	64.11	80.0%
PLF	%	64.11	80.0%
Gross Generation	MU	3369.90	4474.96
Auxiliary Energy Consumption	%	11.70%	11.15%
Auxiliary Energy Consumption	MU	394.20	498.96
Net Generation	MU	2975.70	3976.00
Heat Rate	kcal/kWh	3,102	2744.60
<b>Fuel Parameters (for each primary and secondary fuel)</b>			
<b>Calorific Value</b>		3740	
Fuel 1 (Indian Coal)	Kcal/Kg	2,972.97	2972.97
Fuel 1 (Imported Coal)	Kcal/Kg	6,182.83	6182.83
Fuel 1 (Washed Col)	Kcal/Kg	4,376.91	4376.91
Fuel 2 (F. O.)	Kcal/Kg	10,176.83	10176.83
Fuel 3 (L. D. O.)	Kcal/Kg	10,682.21	10682.21
Fuel 4 (LSHS)	Kcal/Kg		
<b>Landed Fuel Price per unit</b>			
Fuel 1 (Indian Coal)	Rs/MT	2123.00	2,140
Fuel 1 (Imported Coal)	Rs/MT	5625.29	5,625
Fuel 1 (Washed Coal)	Rs/MT	2326.59	2,327
Fuel 2 (F. O.)	Rs/KL	26363.41	26,363
Fuel 3 (L. D. O.)	Rs/KL	34800.71	34,801
Fuel 4 (LSHS)	Rs/KL	0.00	
Fuel 3 (HSD)	Rs/KL	0.00	
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>			
<b>Specific Fuel Consumption</b>			
Fuel 1 (Indian Coal)	Kg/kWh	0.49	0.56
Fuel 1 (Imported Coal)	Kg/kWh	0.12	0.07
Fuel 1 (Washed Coal)	Kg/kWh	0.19	0.15

<b>Parli TPS</b>	<b>Units</b>	<b>April - March (Actuals)</b>	<b>Approved by the Commission</b>
Fuel 2 (F. O.)	ml/kWh	7.25	1.76
Fuel 3 (L. D. O.)	ml/kWh	1.00	0.24
Fuel 4 (LSHS)	ml/kWh		
<b>Total Fuel Consumption</b>			
Fuel 1 (Indian Coal)	MT	1,648,135	2,495,646
Fuel 1 (Imported Coal)	MT	394,078	297,715
Fuel 1 (Washed Coal)	MT	652,501	671,070
Fuel 2 (F. O.)	KL	24,424	7,867
Fuel 3 (L. D. O.)	KL	3,362	1,083
Fuel 4 (LSHS)	KL	-	
<b>Heat Content (each fuel separately)</b>			
Fuel 1 (Indian Coal)	Million kcal	6,199,483	7,419,473
Fuel 1 (Imported Coal)	Million kcal	1,538,047	1,840,718
Fuel 1 (Washed Coal)	Million kcal	2,454,244	2,937,212
Fuel 2 (F. O.)	Million kcal	231,906	74,697
Fuel 3 (L. D. O.)	Million kcal	30,634	9,867
Fuel 4 (LSHS)	Million kcal		
<b>Total Heat Content</b>		<b>10,454,314</b>	<b>12,281,967</b>
<b>Total Fuel Cost</b>			
Fuel 1 (Indian Coal)	Rs Crore	350	534.10
Fuel 1 (Imported Coal)	Rs Crore	222	167.47
Fuel 1 (Washed Coal)	Rs Crore	152	156.13
Fuel 2 (F. O.)	Rs Crore	64	20.74
Fuel 3 (L. D. O.)	Rs Crore	12	3.77
Fuel 4 (LSHS)	Rs Crore		
<b>Total Fuel Cost</b>	Rs Crore	<b>799</b>	<b>882</b>



**Table 59: Fuel Cost of Paras Thermal Power Station for FY 2010-11 (Rs. Crore)**

Paras TPS	Units	April - March (Actuals)	Approved by the Commission
<b>Operational Parameters</b>			
Total Capacity	MW	55.00	55
Availability	%		80.00%
PLF	%		80.00%
Gross Generation	MU	55.83	111.94
Auxiliary Energy Consumption	%	14.82%	12.45%
Auxiliary Energy Consumption	MU	8.27	13.94
Net Generation	MU	47.56	98.00
Heat Rate	kcal/kWh	4,135	3186.50
<b>Fuel Parameters (for each primary and secondary fuel)</b>			
<b>Calorific Value</b>			
Fuel 1 (Indian Coal)	Kcal/Kg	3,306	3306.000
Fuel 1 (Imported Coal)	Kcal/Kg		0.000
Fuel 1 (Washed Coal)	Kcal/Kg	3,306	3306.000
Fuel 2 (F. O.)	Kcal/Kg	10,300	10299.670
Fuel 3 (L. D. O.)	Kcal/Kg	10,798	10798.316
Fuel 4 (LSHS)	Kcal/Kg		
Fuel 3 (HSD)	Kcal/Kg		
<b>Landed Fuel Price per unit</b>			
Fuel 1 (Indian Coal)	Rs/MT	1978.95	1,995
Fuel 1 (Imported Coal)	Rs/MT	0.00	0.00
Fuel 1 (Washed Coal)	Rs/MT	0.00	2065.34
Fuel 2 (F. O.)	Rs/KL	28142.71	28142.71
Fuel 3 (L. D. O.)	Rs/KL	38495.06	38495.06
Fuel 4 (LSHS)	Rs/KL		
Fuel 3 (HSD)	Rs/KL		
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>			
<b>Specific Fuel Consumption</b>			
Fuel 1 (Indian Coal)	Kg/kWh	0.68	0.53
Fuel 1 (Imported Coal)	Kg/kWh	-	
Fuel 1 (Washed Coal)	Kg/kWh	0.56	0.43
Fuel 2 (F. O.)	ml/kWh	4.89	1.95
Fuel 3 (L. D. O.)	ml/kWh	0.12	0.05
Fuel 4 (LSHS)	ml/kWh		
Fuel 3 (HSD)	ml/kWh		
<b>Total Fuel Consumption</b>			
Fuel 1 (Indian Coal)	MT	37,828	58,777
Fuel 1 (Imported Coal)	MT	-	

Paras TPS	Units	April - March (Actuals)	Approved by the Commission
Fuel 1 (Washed Coal)	MT	31,190	48,462.9
Fuel 2 (F. O.)	KL	273	219
Fuel 3 (L. D. O.)	KL	7	5
Fuel 4 (LSHS)	KL	-	
Fuel 3 (HSD)	KL		
<b>Heat Content (each fuel separately)</b>			
Fuel 1 (Indian Coal)	Million kcal	125,059	194,317
Fuel 1 (Imported Coal)	Million kcal	-	-
Fuel 1 (Washed Coal)	Million kcal	103,114	160,218
Fuel 2 (F. O.)	Million kcal	2,623	2,101
Fuel 3 (L. D. O.)	Million kcal	61	49
Fuel 4 (LSHS)	Million kcal		
Fuel 3 (HSD)	Million kcal		
<b>Total Heat Content</b>		<b>230,858</b>	<b>356,684</b>
<b>Total Fuel Cost</b>		<b>0.0%</b>	
Fuel 1 (Indian Coal)	Rs Crore	7	11.73
Fuel 1 (Imported Coal)	Rs Crore	-	
Fuel 1 (Washed Coal)	Rs Crore	6	10.01
Fuel 2 (F. O.)	Rs Crore	1	0.62
Fuel 3 (L. D. O.)	Rs Crore	0	0.02
Fuel 4 (LSHS)	Rs Crore	-	
Fuel 3 (HSD)	Rs Crore	-	
<b>Total Fuel Cost</b>	Rs Crore	<b>14.72</b>	<b>22.37</b>

**Table 60: Fuel Cost of Nasik Thermal Power Station for FY 2010-11 (Rs. Crore)**

Nasik TPS	Units	April - March (Actuals)	Approved by commission
<b>Operational Parameters</b>			
Total Capacity	MW	880	880
Availability	%	71.03%	78.58%
PLF	%	71.03%	78.58%
Gross Generation	MU	5029.25	6057.58
Auxiliary Energy Consumption	%	10.56%	10.95%
Auxiliary Energy Consumption	MU	531.09	663.30
Net Generation	MU	4498.16	5394.27
Heat Rate	kcal/kWh	2,909	2,722
<b>Fuel Parameters (for each primary and secondary fuel)</b>			
<b>Calorific Value</b>		3452.46	
Fuel 1 (Indian Coal)	Kcal/Kg	3,155	3,155
Fuel 1 (Imported Coal)	Kcal/Kg	4,901	4,901
Fuel 1 (Washed Coal)	Kcal/Kg	3,991	3,991
Fuel 2 (F. O.)	Kcal/Kg	10,127	10,127

Nasik TPS	Units	April - March (Actuals)	Approved by commission
Fuel 3 (L. D. O.)	Kcal/Kg	10,634	10,634
Fuel 4 (LSHS)	Kcal/Kg		
Fuel 3 (HSD)	Kcal/Kg		
<b>Landed Fuel Price per unit</b>			
Fuel 1 (Indian Coal)	Rs/MT	2,490	2,471
Fuel 1 (Imported Coal)	Rs/MT	4,248	4,248
Fuel 1 (Washed Coal)	Rs/MT	2,385	2,385
Fuel 2 (F. O.)	Rs/KL	27,072	27,072
Fuel 3 (L. D. O.)	Rs/KL	36,640	36,640
Fuel 4 (LSHS)	Rs/KL		
Fuel 3 (HSD)	Rs/KL		
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>			
<b>Specific Fuel Consumption</b>			
Fuel 1 (Indian Coal)	Kg/kWh	0.53	0.56
Fuel 1 (Imported Coal)	Kg/kWh	0.12	0.08
Fuel 1 (Washed Coal)	Kg/kWh	0.17	0.14
Fuel 2 (F. O.)	ml/kWh	7.42	2.46
Fuel 3 (L. D. O.)	ml/kWh	1.63	0.54
Fuel 4 (LSHS)	ml/kWh		
<b>Total Fuel Consumption</b>			
Fuel 1 (Indian Coal)	MT	2,685,742	3,376,009
Fuel 1 (Imported Coal)	MT	582,680	471,502
Fuel 1 (Washed Coal)	MT	846,095	840,768
Fuel 2 (F. O.)	KL	37,325	14,900
Fuel 3 (L. D. O.)	KL	8,198	3,273
Fuel 4 (LSHS)	KL	-	
<b>Heat Content (each fuel separately)</b>			
Fuel 1 (Indian Coal)	Million kcal	9,272,416	10,651,308
Fuel 1 (Imported Coal)	Million kcal	2,011,679	2,310,833
Fuel 1 (Washed Coal)	Million kcal	2,921,108	3,355,503
Fuel 2 (F. O.)	Million kcal	352,774	140,784
Fuel 3 (L. D. O.)	Million kcal	74,360	29,685
Fuel 4 (LSHS)	Million kcal		
<b>Total Heat Content</b>		<b>14,632,337</b>	<b>16,488,114</b>
<b>Total Fuel Cost</b>		2,909	
Fuel 1 (Indian Coal)	Rs Crore	668.65	834.32
Fuel 1 (Imported Coal)	Rs Crore	247.49	200.27
Fuel 1 (Washed Coal)	Rs Crore	201.79	200.52
Fuel 2 (F. O.)	Rs Crore	101.05	40.34
Fuel 3 (L. D. O.)	Rs Crore	30.04	11.99

Nasik TPS	Units	April - March (Actuals)	Approved by commission
Fuel 4 (LSHS)	Rs Crore		
Fuel 3 (HSD)	Rs Crore		
<b>Total Fuel Cost</b>	Rs Crore	<b>1,249.01</b>	<b>1,287.43</b>

**Table 61: Fuel Cost of Uran Thermal Power Station for FY 2010-11 (Rs. Crore)**

Uran TPS	Units	April - March (Actuals)	Approved by the Commission
<b>Operational Parameters</b>			
Total Capacity	MW	852/672	852
Availability	%	80.21%	78.87%
PLF	%	80.21%	80.21%
Gross Generation	MU	5,505	5,089
Auxiliary Energy Consumption	%	1.91%	2.40%
Auxiliary Energy Consumption	MU	105.14	122.14
Net Generation	MU	5,399	4,967
Heat Rate	kcal/kWh	2,019	1,980
<b>Fuel Parameters (for each primary and secondary fuel)</b>			
<b>Calorific Value</b>			
Fuel 1 - APM Gas	Kcal/SM3	8,651	8,651
Fuel 1 (BPCL+IOCL)	Kcal/SM3		
Fuel 1 (RIL)	Kcal/SM3	9,227	9,227
Fuel 2 (F. O.)	Kcal/Kg		
Fuel 3 (L. D. O.)	Kcal/Kg		
Fuel 4 (LSHS)	Kcal/Kg		
<b>Landed Fuel Price per unit</b>			
Fuel 1 - APM Gas	Rs./1000SM3	6,482	6,482
Fuel 1 IOCL / BPCL	\$ / MMBTU		
Fuel 1 - RIL Gas	\$ / MMBTU	10,399	10,399
Fuel 2 (F. O.)	Rs/KL		
Fuel 3 (L. D. O.)	Rs/KL		
Fuel 4 (LSHS)	Rs/KL		
Fuel 3 (HSD)	Rs/KL		
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>			
<b>Specific Fuel Consumption</b>			
Fuel 1 - APM Gas	SM3/kWh	0.16	0.15
Fuel 1 - RLNG Gas - HLPL / IOCL / BPCL	SM3/kWh	0.01	-
Fuel 1 - RIL Gas	SM3/kWh	0.07	0.07
Fuel 2 (F. O.)	SM3/kWh		

Uran TPS	Units	April - March (Actuals)	Approved by the Commission
Fuel 3 (L. D. O.)	SM3/kWh		
Fuel 4 (LSHS)	SM3/kWh	-	
<b>Total Fuel Consumption</b>			
Fuel 1 - APM Gas	m3/kWh	855	775
Fuel 1 - RLNG Gas - HLPL / IOCL / BPCL	m3/kWh	29	
Fuel 1 - RIL Gas	m3/kWh	403	365.2
Fuel 2 (F. O.)	KL		
Fuel 3 (L. D. O.)	KL		
Fuel 4 (LSHS)	KL		
<b>Heat Content (each fuel separately)</b>			
Fuel 1 - APM Gas	Million kcal	7,397,519	6,706,522
Fuel 1 - RLNG Gas - HLPL / IOCL / BPCL	Million kcal	-	
Fuel 1 - RIL Gas	Million kcal	3,716,968	3,369,768
Fuel 2 (F. O.)	Million kcal		
Fuel 3 (L. D. O.)	Million kcal		
Fuel 4 (LSHS)	Million kcal		
<b>Total Heat Content</b>		<b>11,114,486</b>	<b>10,076,291</b>
<b>Total Fuel Cost</b>		2,019	
Fuel 1 - APM Gas	Rs Crore	554	503
Fuel 1 - RLNG Gas - HLPL / IOCL / BPCL	Rs Crore		
Fuel 1 - RIL Gas	Rs Crore	419	380
Fuel 2 (F. O.)	Rs Crore	-	
Fuel 3 (L. D. O.)	Rs Crore	-	
Fuel 4 (LSHS)	Rs Crore	-	
Other Adjustments (FEV)			
<b>Total Fuel Cost</b>	Rs Crore	<b>973.19</b>	<b>882.28</b>
<b>Other Charges and Adjustments</b>			
Other Variable Charges	Rs Crore	0.97	<b>0.97</b>
<b>Total Other Charges and Adjustments</b>	Rs Crore	0.97	0.97
<b>Total Cost (4+5)</b>	Rs Crore	<b>974.16</b>	<b>883.25</b>

**Table 62: Fuel Cost of Khaparkheda Thermal Power Station for FY 2010-11 (Rs. Crore)**

Khaparkheda TPS	Units	April - March (Actuals)	Approved by the Commission
<b>Operational Parameters</b>			

<b>Khaparkheda TPS</b>	<b>Units</b>	<b>April - March (Actuals)</b>	<b>Approved by the Commission</b>
Total Capacity	MW	840	840.00
Availability	%	80%	82.19%
PLF	%	80%	82.19%
Gross Generation	MU	5715.84	6047.87
Auxiliary Energy Consumption	%	9.76%	9.74%
Auxiliary Energy Consumption	MU	557.87	589.06
Net Generation	MU	5157.97	5458.81
Heat Rate	kcal/kWh	2658.00	2559.90
<b>Fuel Parameters (for each primary and secondary fuel)</b>			
<b>Calorific Value</b>		3041	
Fuel 1 (Indian Coal)	Kcal/Kg	2,594	2594.00
Fuel 1 (Imported Coal)	Kcal/Kg	5,323	5323.00
Fuel 1 (Washed Coal)	Kcal/Kg	3,917	3917.00
Fuel 2 (F. O.)	Kcal/Kg	10,123	10123.00
Fuel 3 (L. D. O.)	Kcal/Kg	10,608	10608.00
Fuel 4 (LSHS)	Kcal/Kg		
<b>Landed Fuel Price per unit</b>			
Fuel 1 (Indian Coal)	Rs/MT	1461.08	1466.98
Fuel 1 (Imported Coal)	Rs/MT	4292.02	4292.02
Fuel 1 (Washed Coal)	Rs/MT	1928.00	1928.00
Fuel 2 (F. O.)	Rs/KL	27326.50	27326.50
Fuel 3 (L. D. O.)	Rs/KL	37240.96	37240.96
Fuel 4 (LSHS)	Rs/KL	0.00	0.00
Fuel 3 (HSD)	Rs/KL	41004.69	41004.69
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>			
<b>Specific Fuel Consumption</b>			
Fuel 1 (Indian Coal)	Kg/kWh	0.53	0.60
Fuel 1 (Imported Coal)	Kg/kWh	0.08	0.04
Fuel 1 (Washed Coal)	Kg/kWh	0.26	0.19
Fuel 2 (F. O.)	ml/kWh	1.46	1.81
Fuel 3 (L. D. O.)	ml/kWh	0.15	0.19
Fuel 4 (LSHS)	ml/kWh		
<b>Total Fuel Consumption</b>			
Fuel 1 (Indian Coal)	MT	3,041,673	3,627,956
Fuel 1 (Imported Coal)	MT	443,945	258,043
Fuel 1 (Washed Coal)	MT	1,481,163	1,169,954
Fuel 2 (F. O.)	KL	8,367	10,973
Fuel 3 (L. D. O.)	KL	856	1,123
Fuel 4 (LSHS)	KL		
<b>Heat Content (each fuel)</b>			

<b>Khaparkheda TPS</b>	<b>Units</b>	<b>April - March (Actuals)</b>	<b>Approved by the Commission</b>
<b>separately)</b>			
Fuel 1 (Indian Coal)	Million kcal	9,249,728	9,410,918
Fuel 1 (Imported Coal)	Million kcal	1,350,036	1,373,562
Fuel 1 (Washed Coal)	Million kcal	4,504,218	4,582,710
Fuel 2 (F. O.)	Million kcal	79,024	103,638
Fuel 3 (L. D. O.)	Million kcal	7,746	11,111
Fuel 4 (LSHS)	Million kcal		
<b>Total Heat Content</b>		<b>15,190,751</b>	15,481,940
<b>Total Fuel Cost</b>		2657.66	
Fuel 1 (Indian Coal)	Rs Crore	444.41	532.21
Fuel 1 (Imported Coal)	Rs Crore	190.54	110.75
Fuel 1 (Washed Coal)	Rs Crore	285.57	225.57
Fuel 2 (F. O.)	Rs Crore	22.86	29.99
Fuel 3 (L. D. O.)	Rs Crore	3.19	4.18
Fuel 4 (LSHS)	Rs Crore		
<b>Total Fuel Cost</b>	<b>Rs Crore</b>	<b>946.58</b>	902.70

## 5.10 Other Variable Costs of Thermal Generating Stations

5.10.1 The Commission approves the Other Variable Charges as submitted by MSPGCL.

## 5.11 Capital Expenditure and Capitalization

### MSPGCL Submission

5.11.1 The Petitioner submits that it has envisaged the Capex plans in line with the recommendations of the CPRI. MSPGCL is currently in the process of formulating the DPRs for the same and will submit the same to the Commission. MSPGCL requested the Commission to consider such submissions which will follow in due course of time.

### Commission's Analysis and Ruling

5.11.2 The Commission has applied the following criteria for approving the Capitalisation for FY 2010-11

- a) Regarding DPR schemes (above 10 Crore, each): 100% capitalisation approved for all DPR schemes capitalized in the year (Schemes above individual cost more than Rs 10 Crore)
- b) Regarding Non DPR schemes (Schemes less than Rs 10 Crore):

- i) Where there are DPR schemes capitalized in the said financial year, upto 20% cost of capitalized DPR schemes is approved for capitalization of Non DPR schemes
- ii) Where there has been no capitalization of any DPR scheme in the said Financial year, 50% cost of capitalized Non DPR scheme has been approved by the Commission

5.11.3 With the above criteria, the capitalization approved by the Commission for FY 2010-11 is as follows:

**Table 63: Capitalization for FY 2010-11 (Rs. Crore)**

<b>Stations</b>	<b>MSPGCL (Actual)</b>	<b>Approved</b>
Bhusawal	4.78	2.39
Chandrapur	59.97	39.15
Khaparkheda	55.81	50.63
Koradi	30.49	28.98
Nashik	71.09	62.99
Paras	0.00	0.00
Parli	44.53	12.10
Uran	2.52	1.26
Hydro	5.19	5.15
<b>Total</b>	<b>274.38</b>	<b>202.65</b>

## 5.12 Lease rent for Hydro Stations

5.12.1 MSPGCL submitted that the Commission approved the lease rent for Hydro Stations in the Case No. 17 of 2007. Accordingly, for FY 2010-11, it considered the lease rent of Rs.314.84 Crore.

### **Commission's Analysis and Ruling**

5.12.2 The Commission has considered the lease rent as approved in the Case No. 17 of 2007. Accordingly, for FY 2010-11, the Commission has approved the lease rent of Rs.314.84 Crore.

## 5.13 Annual Performance Review: (Fixed charges)

## 5.14 Operation and Maintenance (O&M) expenses

### **MSPGCL's Submission**

5.14.1 MSPGCL submitted following reasons for variation in the Operation and Maintenance cost from the approved O&M expenses:



- a) **Impact of Pay Revision in 2010-11 and onwards:** MSPGCL submitted that in the APR Order for FY 2009-10, the Commission had not considered the impact of pay revision for FY 2009-10 and FY 2010-11 due to unavailability of data supporting the actual impact of pay revision.
- b) **Impact of Earned Leave Encashment:** MSPGCL submitted that the Commission in its APR Order dated 17th / 18th August 2009 had allowed Rs 177.37 Crore of provision of earned leave encashment liability at existing power stations of MSPGCL but had stipulated that such expense would be spread over five years starting from FY 2007-08. Accordingly the Petitioner has added the impact of earned leave encashment liability for FY 2010-11.

**Table 64: O&M Expense for FY 2010-11**

Stations	O&M Expense for FY 2010-11	
	Approved	Actual/ Normative as applicable
Bhusawal	98.94	129.85
Chandrapur	283.04	379.02
Nasik	156.56	218.35
Koradi	199.18	206.03
Paras	25.16	11.03
Parli	137.30	128.28
Uran	57.81	47.34
Khaparkheda	120.38	150.18
Hydo	65.28	101.87
Total	1143.65	1371.94

**Commission's Analysis and Ruling**

- 5.14.2 The Commission in its Order dated March 5, 2010 in Case 16 of 2008 approved the O&M expenses by revising the base O&M figures for FY 2006-07 and has approved the O&M expenses as Rs 948.05 Crore for FY 2008-09. For the purpose of projecting O&M expenses, the Commission has considered the values as allowed for FY 2008-09 and escalating these by 5.48% and 7.02% for FY 2009-10 and FY 2010-11, respectively.
- 5.14.3 As the MSPGCL has not separately submitted the impact of pay revision for FY 2010-11, the Commission, at this stage, has therefore not considered any impact of pay revision. However the same will be considered during the Truing up process, in case such submission is received.
- 5.14.4 It is observed that MSPGCL has retired from service, around the middle of FY 2010-11, certain vintage Units from Bhusawal, Koradi, Paras and Parli TPS. The removal of the vintage Units will have impact on the O&M expenses. The Commission will undertake a separate treatment of O&M expenses during the final True up process when the audited figures are available. At this stage the Commission approves Rs.1074.44 Crore for O&M expenses for FY 2010-11 on normative basis.

## 5.15 Depreciation including Advance Against Depreciation

### MSPGCL's Submission

- 5.15.1 MSPGCL submitted that the Depreciation has been calculated on the opening Gross Fixed Asset (GFA) of all the plants, at the rates specified in the MERC (Terms and Conditions of Tariff) Regulations 2005 for FY 2010-11.
- 5.15.2 MSPGCL submitted a comparison of approved Depreciation vis-à-vis the Depreciation for FY 2010-11 calculated as per MERC (Terms and Conditions of Tariff) Regulations, 2005 including Advance Against Depreciation, wherever applicable, for the individual power plants.

**Table 65: Depreciation and AAD as submitted by MSPGCL for FY 2010-11 (Rs. Crore)**

Stations	Depreciation and AAD for FY 2010-11	
	Approved	Actual/ Normative as applicable
Bhusawal	6.03	8.30

Stations	Depreciation and AAD for FY 2010-11	
	Approved	Actual/ Normative as applicable
Chandrapur	33.62	117.41
Nasik	22.49	22.15
Koradi	30.89	47.94
Paras	1.34	0.39
Parli	5.25	26.97
Uran	16.13	30.05
Khaparkheda	82.44	82.84
Hydro	4.71	7.81
Total	202.90	343.84

5.15.3 MSPGCL further submitted that Depreciation should be given on the assets added during the year as per the direction of the Hon'ble ATE in its Judgment in Appeal No 137 of 2008 dated July 15, 2009, as under:

*“In view of the provisions of the Tariff Regulations the Companies Act and the Accounting Standard-6, we find full justification and rationale in the contention of the appellant that **proportionate depreciation has to be allowed even for part of the year when the assets have been put to use. The asset once put to use will be exposed to wear and tear which will not wait to depreciate till the start of the new financial year. We, therefore, allow the appeal in this view of the matter also.**”*

#### **Commission's Analysis and Ruling**

5.15.4 The Commission has calculated the Depreciation and Advance Against Depreciation, Station wise, as per the Regulation 34.4 of MERC (Terms and Conditions of Tariff) Regulations, 2005.

5.15.5 In case of Advance against Depreciation the Commission had taken due cognizance of the Hon'ble ATE's, Judgment, dated April 27, 2011, in Appeal No. 72 of 2010, extracts whereof are provided below:

*“This issue has already been decided by this Tribunal in its Judgment dated 27th April, 2011 in Appeal no. 191 of 2009 in the matter of Maharashtra State Power Generation Co. Ltd. vs. Maharashtra Electricity Regulatory Commission & Ors. which would apply to the present facts of this case. Accordingly, the State Commission is directed to re-determine station-wise AAD as per its Regulations by following the Judgment of this Tribunal referred to above.”*

5.15.6 The Commission has allowed the Depreciation even for the part of the year when the assets have been put to use. The Commission has computed the AAD station wise based on the Loan repayment, Depreciation and their difference thereof. The table below provides the Depreciation and AAD Trued up by the Commission in this Order.

5.15.7 The Station-wise approved Depreciation and Advance Against Depreciation for FY 2010-11 is summarized in the following table.

**Table 66: Depreciation and ADD for FY 2010-11 (Old Units) (Rs. Crore)**

Depreciation Stations	Actual/Audited	Approved in the APR
Bhusawal	8.30	8.27
Chandrapur	117.41	117.05
Khaparkheda	82.84	82.75
Koradi	47.94	47.94
Nashik	22.15	22.01
Paras	0.39	0.38
Parli	26.97	24.84
Uran	30.05	29.56
Hydro	7.81	7.81
<b>Total</b>	<b>343.84</b>	<b>340.61</b>

## 5.16 Interest on Working Capital (IoWC)

### MSPGCL’s Submission

5.16.1 MSPGCL submitted that it has computed Working Capital requirement on the basis of the normative parameters. The Petitioner has computed interest on Working Capital at an interest rate of 13.00% for FY 2010-11.

**Table 67: Interest on working Capital as submitted by MSPGCL**

Stations	Interest on Working Capital
----------	-----------------------------

	Approved	Actual/ Normative as applicable
Bhusawal	29.37	24.79
Chandrapur	88.04	84.74
Nasik	67.46	52.32
Koradi	57.51	32.95
Paras	2.72	0.88
Parli	30.43	34.08
Uran	31.07	38.21
Khaparkheda	37.56	45.21
Hydo	8.70	10.75
Total	352.86	323.93

### Commission's Analysis and Ruling

5.16.2 For FY 2010-11, the Commission has estimated Working Capital requirement for the thermal and gas based generating stations of MSPGCL and aggregate working capital requirement for Hydro Stations of MSPGCL in accordance with the provisions of MERC (Terms and Conditions of Tariff) Regulations 2005. As the prevailing short-term Prime Lending Rate of State Bank of India at the time of filing APR Petition was around 11.75%, the Commission has considered the interest rate of 11.75 % for estimating the interest on Working Capital for FY 2010-11. The interest on Working Capital for each generating station and aggregate for Hydro Stations for FY 2010-11 is given in the following Table.

**Table 68: Station wise IoWC for FY 2010-11 (Rs. Crore)**

Stations	MSPGCL	Approved in APR
Bhusawal	24.79	20.92
Chandrapur	84.74	87.62
Khaparkheda	45.21	38.57
Koradi	32.95	29.43
Nashik	52.32	46.46

Stations	MSPGCL	Approved in APR
Paras	0.88	1.42
Parli	34.08	33.52
Uran	38.21	31.88
Hydro	10.75	8.63
<b>Total</b>	<b>323.93</b>	<b>298.45</b>

## 5.17 Interest on Loan Capital and Finance Charges

### MSPGCL's Submission

5.17.1 MSPGCL submitted that for computation of interest charges, the Petitioner has considered the actual interest rate as applicable to existing loans and has considered an interest rate of 12.00% for FY 2010-11 for the loan capital to be borrowed during FY 2010-11. Interest expenses corresponding to specific loans of vintage Units have been considered only till July 14, 2011 for ARR computation.

5.17.2 **The actual Guarantee fees for existing Units for FY 2010-11 is Rs. 3.54 Crore.** Regarding Finance Charges, MSPGCL has worked out the quantum of finance charges paid in FY 2009-10 as a percentage to the loan drawal in the year. The same percentage has been considered on the envisaged loan drawal to work out the finance charges for FY 2010-11.

5.17.3 The SBI Lease rental for FY 2010-11 is Rs. 0.0742 Crore.

5.17.4 The plant wise details of all the existing and new loans are provided in the relevant forms prescribed by the Commission. The comparison of interest expenses and other finance charges for various plants as approved by the Commission vis-à-vis the actuals for the FY 2010-11 is provided in the table below:

**Table 69: Interest and Finance Charges as submitted by MSPGCL for FY 2010-11 (Rs. Crore)**

Stations	Interest and Finance Charges	
	Approved	Actual/ Normative as applicable
Bhusawal	4.44	2.44
Chandrapur	45.17	25.33
Nasik	23.90	8.71
Koradi	13.91	13.40

Stations	Interest and Finance Charges	
	Approved	Actual/ Normative as applicable
Paras	0.31	0.16
Parli	9.71	11.50
Uran	12.87	10.99
Khaparkheda	10.19	11.70
Hydo	7.43	4.75
Total	127.97	88.97

### 5.18 Commission's Analysis and Ruling

5.18.1 As regarding funding the Capex proposed during FY 2010-11, MSPGCL proposed funding through 100% debt and the same has been considered by the Commission. The Commission has considered the actual interest rate proposed by the MSPGCL. The summary of the interest and finance charges are shown in the table below.

**Table 70: Interest and Finance Charges for FY 2010-11 (Rs. Crore)**

Stations	MSPGCL	Approved by Commission
Bhusawal	2.44	3.16
Chandrapur	25.33	23.58
Khaparkheda	11.70	14.49
Koradi	13.40	18.03
Nashik	8.71	12.83
Paras	0.16	0.36
Parli	11.50	16.83
Uran	10.99	11.96
Hydro	4.75	5.96
<b>Total</b>	<b>88.97</b>	<b>107.19</b>

### 5.19 Return on Equity (RoE)

#### MSPGCL's Submission

5.19.1 MSPGCL submitted that the opening balance sheet for MSPGCL, as per the transfer scheme, provided an equity base which was not classified for any particular station. For the purpose of ARR, the opening equity was spread across generating stations on a notional basis. With regard to the shutdown of vintage Units, the contribution to the fixed assets was only to the extent of their scrap value. MSPGCL added that the amount of equity contribution in the vintage Unit would be negligible.

**Table 71; Equity Contribution due to Vintage Units (Rs. Crore)**

Opening GFA for Paras as per MYT petition	Scrap Value	Equity (80: 20 DE Ratio)	RoE @ 14%
34.93	3.49	0.69	0.09

5.19.2 MSPGCL submitted that it has envisaged funding its schemes of capital nature on 100% debt basis for FY 2010-11 and accordingly has not projected any equity addition in respect of its capital expenditure plan. MSPGCL has considered a return of Rs 358.88 Crore for FY 2010-11 at 14% of the opening balance of equity

**Table 72: RoE for Existing Stations (Rs. Crore)**

Particulars	FY 2010-11
Opening Balance of Equity (A)	2,563.41
Equity from GOM (B)	-
Return on Equity [(A+B)*14%]	358.88

#### **Commission's Analysis and Ruling**

5.19.3 The Commission has calculated the Return on Equity as per the MERC (Terms and Conditions of Tariff), Regulations, 2005 and the station wise Return on Equity is provided in the table below.

**Table 73: RoE for FY 2010-11 (Rs. Crore)**

Stations	MSPGCL	Approved by the Commission
Bhusawal	13.73	13.73
Chandrapur	107.58	107.58
Khaparkheda	126.11	126.11
Koradi	23.33	23.33
Nashik	27.73	27.73
Paras	1.20	1.20



Stations	MSPGCL	Approved by the Commission
Parli	19.46	19.46
Uran	39.73	39.73

## 5.20 Non Tariff Incomes

### MSPGCL's Submission

5.20.1 The Petitioner has estimated non-tariff incomes of Rs 73.09 Crore for FY 2010-11.

### Commission's Analysis and Ruling

5.20.2 The Commission approves the non-tariff income of Rs. 73.09 Crore for FY 2010-11 as submitted by MSPGCL

## 5.21 Income Tax

### MSPGCL's Submission

5.21.1 MSPGCL submitted that it has considered the income tax in FY 2010-11 on the eligible return on equity for each station and computed the income tax at Minimum Alternate Tax (MAT) rate of 19.93% (18.50% base rate +5% surcharge +3% cess). MSPGCL further submitted that the Audited actual tax paid in FY 2010-11 shall be considered at the time of final Truing up.

**Table 74: Tax payable by MSPGCL (Rs. Crore) for FY 2010-11**

Particulars	FY 2010-11	
	Approved	Actual/ Normative as applicable
Return on Equity	358.87	358.88
MAT Rate	19.93%	19.93%
<b>Income Tax</b>	71.52	71.52

### Commission's Analysis and Ruling

5.21.2 For the computation of Tax, the Commission has considered MAT rate suggested by the MSPGCL. The Commission has approved the Rs.71.52 Crore for the FY 2010-11

## 5.22 Summary of ARR for FY 2010-11

**Table 75: Summary for ARR for FY 2010-11**

Particulars	Actual as per MSPGCL	Approved in this Order
Fuel Related Expenses/Lease Rentals	7,597.10	8,047.52
Operation and Maintenance Expenses	1,371.94	1,074.44
Depreciation, including advance against depreciation	343.84	340.61
Interest on Long-term Loan Capital	88.97	107.19
Interest on Working Capital	323.93	298.45
Misc debits	-	-
Earned cash encashment	35.47	35.47
Income Tax	71.52	71.52
<b>Total Revenue Expenditure</b>	<b>9,832.79</b>	<b>9,975.20</b>
Return on Equity Capital/Supervision Charges^	358.88	358.88
<b>Aggregate Revenue Requirement</b>	<b>10,191.66</b>	<b>10,334.08</b>
Less		
Non Tariff Income	73.09	73.09
Income from Other Business	-	-
<b>Net Aggregate Revenue Requirement</b>	<b>10,118.57</b>	<b>10,260.99</b>

5.22.1 The Annual Revenue Requirement for FY 2010-11 is Rs. 10260.99 Crore for FY 2010-11

## 5.23 Tariff for Hydro Power Generating Stations

### MSPGCL's Submission

5.23.1 MSPGCL submitted the detailed technical performance of Hydro Stations which is provided below:

**Table 76: Technical Parameters for Koyna Complex**

Sr.No.	Particulars	Units	FY 2009-10	FY 2010-11
			(Audited )	(Actuals)
1	Operational Parameters			
1.1	Total Capacity	MW	1956	1956
1.2	Capacity Utilization Factor	%	19.26	22.12
1.4	Design Energy	MU	3188	3188
1.5	Gross Generation	MU	3300.61	3789.36

Sr.No.	Particulars	Units	FY 2009-10	FY 2010-11
			(Audited )	(Actuals)
1.6	Auxiliary Energy Consumption	%	0.74%	0.68%
1.7	Auxiliary Energy Consumption	MU	24.5	25.81
1.8	Net Generation	MU	3276.11	3763.56

**Table 77: Technical Parameters for Small Hydro Stations**

Sr. No.	Particulars	Units	FY 2009-10	FY 2010-11
			(Audited )	(Actuals)
1	Operational Parameters			
1.1	Total Capacity	MW	388	379
1.2	Capacity Utilization Factor	%	21.96	25.46
1.4	Design Energy	MU	862.81	831.35
1.5	Gross Generation	MU	746.37	845.14
1.6	Auxiliary Energy Consumption	%	0.51%	0.44%
1.7	Auxiliary Energy Consumption	MU	3.83	3.69
1.8	Net Generation	MU	742.54	841.45

5.23.2 With regards to Peak and Off Peak tariff, MSPGCL submitted that the hydro tariff may be charged in the following manner:

- a. The return of fixed monthly excess recovery should be discontinued as the actual Peak – Off Peak generation is not in line with the peak generation considered by the Commission (around 89% of the total generation).
- b. MSPGCL returns the excess recovery charges based on actual energy generated during the Peak- Off Peak period and not the normative generation considered by the Commission.
- c. The return of excess recovery should be provided only after deducting its fixed monthly charges as determined by the Commission.

### Commission's Analysis and Ruling

5.23.3 The Electricity Act, 2003 requires the Commission to encourage economical use of the resources while determining the terms and conditions of tariff. Accordingly, the MERC (Terms and Conditions of Tariff) Regulations 2005, specifies an energy rate for hydro stations, which is equal to the variable cost of the least-cost of 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.

5.23.4 Regulation 28.2 of MERC (Terms and Conditions of Tariff) Regulations, 2005 in this regard specifies 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)”*

5.23.5 The Commission in its Order dated September 7, 2006 on ARR and Tariff Petition of MSPGCL for FY 2006-07 approved a differential hydro peaking tariff to optimize the hydro generation during peak hours as follows:

**Table 78: Differential Tariff for Hydro Stations**

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

5.23.6 The Commission in its Order dated September 12, 2010 in Case No. 102 of 2009 has decided to take a holistic review of the hydro tariff mechanism for the next Control Period. Therefore, MSPGCL's suggestions for modification to the hydro tariff mechanism are not being considered at this stage, and the existing mechanism is being continued.

5.23.7 The Commission shall review the excess revenue recovered on account of peaking tariff during the final True up for FY 2010-11.

## **6 TRUING UP FOR PARAS UNIT 3 AND PARLI UNIT 6**

### **6.1 Background and Brief History**

6.1.1 In exercise of powers conferred under Section 61 and 62 of the Electricity Act, 2003 and in accordance with the Maharashtra Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2005, the Commission issued the Order in Case 26 of 2008 on October 21, 2009 and in Case 95 of 2008 on December 15, 2009 in the matter of Maharashtra State Power Generation Company Limited's (MSPGCL) Petition for Determination of Tariff for Unit No. 6 of Parli Thermal Power Station and Unit No. 3 of Paras Thermal Power Station. The Commission in the respective Orders had disallowed certain claims made by MSPGCL, and accordingly, the approved Capital Cost was lower than the Capital Cost submitted by MSPGCL.

6.1.2 Aggrieved by the above referred Orders of the Commission, MSPGCL preferred Appeal No 72 of 2010 for Parli Unit 6 and Appeal No 99 of 2010 for Paras Unit 3 before the Hon'ble Appellate Tribunal for Electricity (ATE). The Hon'ble ATE delivered a Judgment dated May 24, 2011 in case of Paras Unit No. 3 and judgment dated April 27, 2011 in case of Parli Unit 6 and gave directions in regard to the following:-

- Reason for delay in commissioning of the Parli Unit no. 6 and consequential disallowance of the Capital Cost;
- Disallowance of actual Capital Cost incurred;
- Disapproval of Advance Against Depreciation (AAD);
- Deferment of Additional Capitalization;
- Disallowance of Return on Equity on investments;
- Non-consideration of carrying cost.

6.1.3 Based on the above directions, the Commission issued Orders dated July 26, 2011 in the matter of Case No. 74 of 2011 for Unit No. 6 of Parli Thermal Power Station and in the matter of Case No. 75 of 2011 for Unit No. 3 of Paras Thermal Power Station and addressed each of the above mentioned points.

6.1.4 MSPGCL in the second Section of the Petition for Truing up for the FY 2009-10 and Annual Performance Review for all thermal power stations of MSPGCL submitted the Annual Performance Review (APR) Petition for FY 2010-11 for Parli Unit -6 and Paras Unit -3. The Petition is based on the actual Audited expenditure for FY 2009-10 and actual expenses for FY 2010-11.

## 6.2 Summary of the Commission's Ruling in Case No. 74 of 2011 and for Case No. 75 of 2011

6.2.1 Based on the directions of the Hon'ble ATE, the Commission recomputed the Capital Cost for Unit 3 Paras TPS and Unit 6 Parli TPS. The revised Capital Cost as approved by the Commission is shown in the table below.

**Table 79: Revised Project Cost of Paras Unit 3 and Parli Unit 6 (Rs. Crore)**

Units	Cost as on Commissioning		
	Submitted by MSPGCL	Approved Previously by Commission	Revised by Commission as per ATE directions
Paras Unit 3	1,439.32	1,207.29	1,328.37
Parli Unit 6	1,315.38	1,155.35	1,264.02

6.2.2 The Commission vide Order dated April 13, 2011 in Case No. 107 of 2009 had approved Rs. 115.58 Crore additional Capitalization for Paras Unit 3 and Rs. 139.72 Crore additional Capitalization for Parli Unit 6. The above said additional capitalizations have been considered for finalization the Capital Cost of Paras Unit 3 and Parli Unit 6.

**Table 80: Capital Cost of Paras Unit 3 and Parli Unit 6 (Rs. Crore)**

Units	Capital Cost as on March 31, 2009
Paras Unit 3	1443.95
Parli Unit 6	1403.74

## 6.3 TRUING UP FOR PARAS UNIT 3 AND PARLI UNIT 6

### 6.4 Fuel Cost MSPGCL's Submission

6.4.1 MSPGCL submitted that the actual fuel expenses as per Audited Accounts of FY 2009-10 for the Parli Unit-6 have been at Rs 271.38 Crore and for Paras Unit - 3 have been at Rs. 254.09 Crore as against the Commission approval (incl. of other variable charges) of Rs 256.24 Crore for Parli Unit -6 and Rs. 233.21 Crore for Paras Unit - 3. MSPGCL submitted following reasons for the deviations in the fuel price:

**a) Expenditure on other variable charges (including water, chemicals, lubricants etc.)**

MSPGCL submitted that the increase in other variable charges for Parli Unit-6 is on account of increase in cost of water. The rationale for increase in such cost is due to poor rainfall during the FY 2009-10.

**b) Fuel expenses**

The Petitioner submitted that the other reasons for increase in Fuel cost are as follows:

**i. Increase in Transit Loss during FY 2009-10**

MSPGCL submitted that Transit Losses in the FY 2009-10 for Paras Unit-3 have been at 6.10 %. The Transit Losses in the FY 2009-10 have exceeded the normative limit of 0.8%. This was on account of judgment of the Hon'ble Supreme Court of India dated December 19, 2008 in contempt Petition No. 245 of 2007 by virtue of which MSPGCL had to necessarily give the contract of liaisoning work for arrangement of coal to M/s B.S.N. Joshi and Sons Ltd .

**ii. Impact of tripping and partial loading**

MSPGCL submitted that 42 nos of tripping occurred at Paras Unit 3 during FY 2009-10 which resulted into 129 kCal/kWh increase in heat rate due to cyclic deviations on account of extra fuel, DM water consumption used during light up at the time of synchronization of Unit. MSPGCL further submitted that Parli Unit 6 also had low availability and low PLF in FY 2009-10 due to major shutdown because of hydrogen leakage, high turbine shaft vibration and 23 occurrences tripping of Unit.

**Commission's Analysis and Ruling**

- 6.4.2 As regards Availability of the two Units, the Commission observes that since both the Units are new and have stabilized, they should operate at full efficiency. In case any defects exist, which have caused lower Availability or high number of forced outages, these would most likely be on account of deficiencies in quality control and quality assurance effected during erection, testing and commissioning of these Units. The Petitioner should have safety clauses with the contractors so that the Consumers are not affected due to inefficiencies and negligence by the contracted agencies. The Commission hence, finds no reasons to deviate from the operational norms specified in the MERC Tariff Regulations, 2005. The Commission, therefore, for FY 2009-10 approves Availability of 80% for full recovery of fixed charges for both the Units.
- 6.4.3 As regards Auxiliary Consumption, the Commission is of the views that since the two Units are new Units; the Units should operate at full efficiency. Any deficiencies need not be loaded on to the consumers and therefore, the Commission finds no reason to allow a higher Auxiliary Consumption for Parli Unit 6 and Paras Unit 3, as compared to the Auxiliary Consumption norm specified in the MERC (Terms and Conditions of Tariff) Regulations, 2005.
- 6.4.4 As regards Transit Loss, the Commission has considered normative Transit Loss of 0.8% as per the provisions of MERC Tariff Regulations, 2005, and the benefit in case of Parli Unit 6 and loss in case of Paras Unit 3 on account of variation between actual and normative Transit Loss is being shared between the Generating Company and the Distribution Licensee (MSEDCL) in accordance with mechanism of sharing of efficiency gains and losses specified in the MERC (Terms and Conditions of Tariff) Regulations, 2005.
- 6.4.5 As regards Station Heat Rate (SHR), the Commission has analysed the submissions made by MSPGCL and finds no merit in allowing higher heat rate on account of frequent failure of equipment as the two Units are new, the 250 MW Units are proven technologies and therefore ideally such issues should not arise and, therefore the Units are expected to operate efficiently. The Commission has adhered to the provisions of MERC (Terms and Conditions of Tariff) Regulations, 2005, while approving the heat rate for the two Units.



6.4.6 As regards Secondary Fuel Oil Consumption, the Commission observes that the Secondary Fuel Oil Consumption of both the Units is very high for FY 2009-10. This is despite the fact that the Units are new. The Commission finds no merit in allowing higher Secondary Fuel Oil Consumption on account of frequent breakdowns and tripping which is not expected from newly Commissioned Units. The cause of problems resulting into low on line capacity of the Units or due to frequent forced outages of the Units need to be addressed appropriately by the Petitioner. The Cost of these cannot be passed on to the Consumers. Therefore, the Commission has considered normative Secondary Fuel Oil Consumption of 2 ml/kWh as stipulated in the MERC Tariff Regulations, 2005.

6.4.7 The detail regarding the Commission's approved Availability, PLF, Transit Loss, Station Heat Rate (SHR) and Auxiliary Consumption for the Thermal power Units of the Petitioner are given in the table below.

**Table 81: Performance Parameters submitted by MSPGCL and approved by Commission for FY 2009-10**

Particulars	Paras Unit 3		Parli Unit 6	
	MSPGCL	Approved	MSPGCL	Approved
Installed Capacity (MW)	250	250	250	250
Availability (%)	69.89%	80%	67.49%	80%
PLF(%)	69.89%	80%	67.49%	80%
Gross Generation (MUs)	1477.73	1477.73	1430.51	1430.51
Auxiliary Consumption (%)	10.84%	9.00%	10.94%	9.00%
Station Heat Rate (Kcal/kWh)	2956.41	2500.00	2798.02	2500.00
SFOC (ml/kWh)	5.86	2.00	4.13	2.00
Transit Loss (%)	6.10%	0.8%	-	0.80%

6.4.8 For computing the fuel costs, the Commission has taken fuel price and calorific value as submitted by MSPGCL. The Commission has adjusted the fuel price to the extent of the allowable normative Transit Loss of 0.8% for FY 2009-10. The fuel prices and calorific value as considered by the Commission are as shown in the tables below.

**Table 82: Fuel Price Approved for FY 2009-10**

Generating Stations	Units	Paras Unit 3	Parli Unit 6
Domestic Coal	Rs/MT	1794.24	1951.84
Imported Coal	Rs/MT	0.00	6766.83
Washed Coal	Rs/MT	1981.00	1981.00
FO	Rs/KL	24090.40	24090.40
LDO	Rs/KL	33510.56	33510.56

6.4.9 Details of Fuel Cost, as approved by the Commission, are tabulated below:

**Table 83: Fuel cost of Paras Unit 3 for FY 2009-10**

Paras Unit 3	Units	April-March (Audited)	Approved in this Order
<b>Operational Parameters</b>			
Total Capacity	MW	250.00	250.00
Gross Generation	MU	1477.73	1477.73
Auxiliary Energy Consumption	%	10.84%	9.00%
Auxiliary Energy Consumption	MU	160.13	133.00
Net Generation	MU	1317.60	1344.74
Heat Rate	kcal/kWh	2956.41	2500.00
<b>Fuel Parameters (for each primary and secondary fuel)</b>			
<b>Calorific Value</b>		3708.54	
Fuel 1 (Indian Coal)	Kcal/Kg	3400.43	3400.43
Fuel 1 (Imported Coal)	Kcal/Kg	0.00	0.00
Fuel 1 (Washed Coal)	Kcal/Kg	3801.73	3801.73
Fuel 2 (F. O.)	Kcal/Kg	10321.19	10,321.19
Fuel 3 (L. D. O.)	Kcal/Kg	10719.53	10719.53
Fuel 4 (LSHS)	Kcal/Kg		
Fuel 3 (HSD)	Kcal/Kg		
<b>Landed Fuel Price per unit</b>			
Fuel 1 (Indian Coal)	Rs/MT	1895.45	1794.24
Fuel 1 (Imported Coal)	Rs/MT		
Fuel 1 (Washed Coal)	Rs/MT	1981.00	1981.00
Fuel 2 (F. O.)	Rs/KL	24090.40	24090.40
Fuel 3 (L. D. O.)	Rs/KL	33510.56	33510.56
Fuel 4 (LSHS)	Rs/KL		
Fuel 3 (HSD)	Rs/KL		

Paras Unit 3	Units	April-March (Audited)	Approved in this Order
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>			
<b>Specific Fuel Consumption</b>			
Fuel 1 (Indian Coal)	Kg/kWh	0.18	0.17
Fuel 1 (Imported Coal)	Kg/kWh	-	.
Fuel 1 (Washed Coal)	Kg/kWh	0.60	0.50
Fuel 2 (F. O.)	ml/kWh	5.44	1.86
Fuel 3 (L. D. O.)	ml/kWh	0.41	0.14
Fuel 4 (LSHS)	ml/kWh		
<b>Total Fuel Consumption</b>			
Fuel 1 (Indian Coal)	MT	268,376	250,367
Fuel 1 (Imported Coal)	MT	-	
Fuel 1 (Washed Coal)	MT	887,264	740,351
Fuel 2 (F. O.)	KL	8,042	2,746
Fuel 3 (L. D. O.)	KL	613	209
Fuel 4 (LSHS)	KL	-	
Fuel 3 (HSD)	KL	-	
<b>Heat Content (each fuel separately)</b>			
Fuel 1 (Indian Coal)	Million kcal	995,282	851,354
Fuel 1 (Imported Coal)	Million kcal	-	-
Fuel 1 (Washed Coal)	Million kcal	3,290,451	2,814,618
Fuel 2 (F. O.)	Million kcal	77,444	26,444
Fuel 3 (L. D. O.)	Million kcal	5,607	1,915
Fuel 4 (LSHS)	Million kcal		
Fuel 3 (HSD)	Million kcal		
<b>Total Heat Content</b>		4,368,784	3,694,330
<b>Total Fuel Cost</b>			
Fuel 1 (Indian Coal)	Rs Crore	50.87	44.92
Fuel 1 (Imported Coal)	Rs Crore	-	
Fuel 1 (Washed Coal)	Rs Crore	175.77	146.66
Fuel 2 (F. O.)	Rs Crore	19.37	6.62
Fuel 3 (L. D. O.)	Rs Crore	2.05	0.70
Fuel 4 (LSHS)	Rs Crore		
<b>Total Fuel Cost</b>		248.06	198.90

**Table 84: Fuel cost of Parli Unit 6 for FY 2009-10**

Parli Unit 3	Unit	April-March (Audited)	Approved by in this Order
<b>Operational Parameters</b>			
Total Capacity	MW	250.00	250.00
Gross Generation	MU	1430.51	1430.51
Auxiliary Energy Consumption	%	10.94%	9.00%

Auxiliary Energy Consumption	MU	156.50	128.75
Net Generation	MU	1274.00	1301.76
Heat Rate	kcal/kWh	2798.02	2500.00
<b>Fuel Parameters (for each primary and secondary fuel)</b>			
<b>Calorific Value</b>		3481.00	
Fuel 1 (Indian Coal)	Kcal/Kg	3818.00	3818.00
Fuel 1 (Imported Coal)	Kcal/Kg	6100.00	6100.00
Fuel 1 (Washed Coal)	Kcal/Kg	4009.00	4009.00
Fuel 2 (F. O.)	Kcal/Kg	10161.00	10,161.00
Fuel 3 (L. D. O.)	Kcal/Kg	10497.00	10497.00
Fuel 4 (LSHS)	Kcal/Kg		
Fuel 3 (HSD)	Kcal/Kg		
<b>Landed Fuel Price per unit</b>			
Fuel 1 (Indian Coal)	Rs/MT	1936.23	1951.84
Fuel 1 (Imported Coal)	Rs/MT	6766.83	6766.83
Fuel 1 (Washed Coal)	Rs/MT	2224.69	2224.69
Fuel 2 (F. O.)	Rs/KL	23433.39	23433.39
Fuel 3 (L. D. O.)	Rs/KL	35716.80	35716.80
Fuel 4 (LSHS)	Rs/KL		
Fuel 3 (HSD)	Rs/KL		
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>			
<b>Specific Fuel Consumption</b>			
Fuel 1 (Indian Coal)	Kg/kWh	0.64	0.52
Fuel 1 (Imported Coal)	Kg/kWh	0.00	0.00
Fuel 1 (Washed Coal)	Kg/kWh	0.15	0.12
Fuel 2 (F. O.)	ml/kWh	2.94	1.43
Fuel 3 (L. D. O.)	ml/kWh	1.19	0.57
Fuel 4 (LSHS)	ml/kWh		
<b>Total Fuel Consumption</b>			
Fuel 1 (Indian Coal)	MT	913,666	748,977
Fuel 1 (Imported Coal)	MT	70	36
Fuel 1 (Washed Coal)	MT	220,383	172,052
Fuel 2 (F. O.)	KL	4,206	2,039
Fuel 3 (L. D. O.)	KL	1,697	822
Fuel 4 (LSHS)	KL	-	
Fuel 3 (HSD)	KL	-	
<b>Heat Content (each fuel separately)</b>			
Fuel 1 (Indian Coal)	Million kcal	3,180,470	2,859,596
Fuel 1 (Imported Coal)	Million kcal	245	220
Fuel 1 (Washed Coal)	Million kcal	767,153	689,756
Fuel 2 (F. O.)	Million kcal	39,874	19,326

Fuel 3 (L. D. O.)	Million kcal	15,195	7,364
Fuel 4 (LSHS)	Million kcal		
Fuel 3 (HSD)	Million kcal		
<b>Total Heat Content</b>		<b>4,002,937</b>	3,576,263
<b>Total Fuel Cost</b>			
Fuel 1 (Indian Coal)	Rs Crore	176.91	146.19
Fuel 1 (Imported Coal)	Rs Crore	0.05	
Fuel 1 (Washed Coal)	Rs Crore	49.03	38.28
Fuel 2 (F. O.)	Rs Crore	9.86	4.78
Fuel 3 (L. D. O.)	Rs Crore	6.06	2.94
Fuel 4 (LSHS)	Rs Crore		
<b>Total Fuel Cost</b>	Rs Crore	<b>241.90</b>	192.18

6.4.10 On the issue of increase in fuel cost on account of increase in other variable charges, which in turn have increased mainly on account of increase in water charges, the Commission carried out the component wise analysis of the submission made by Petitioner as per its Audited Accounts.

6.4.11 The table below shows the other variable charges incurred by MSPGCL for FY 2009-10,

**Table 85: Other Variable Charges for FY 2009-10 for Paras Unit 3 and Parli Unit 6 (Rs. Crore)**

Particulars	FY 2009-10	
	Paras Unit 3	Parli Unit 6
<b>OTHER FUEL RELATED COST</b>		
Coal Handling Contract Charges	0.16	0.96
Demurrage on Coal Wagons	0.38	0.6
Siding charges	0.01	
Penalties for Overloading	-	
Commission to agents	0.09	0.23
Payments to Rly Staff Posted at TPS	-	0.02
Coal Stock Maintenance Cost	-	0
Other Coal Related Cost	0.22	1.1
Oil Handling Contract Charges	-	
Demurrage on Oil Tankers	0.02	
Stock shortages on Physical Verification of Coal Stock	2.45	0
Stock shortages on Physical Verification of Oil Stock	-	0
<b>OPERATING EXPENSES</b>	-	
Cost of Water	0.93	25.15

Particulars	FY 2009-10	
	Paras Unit 3	Parli Unit 6
Lubricants and Consumable Stores	1.77	1.42
Stations supplies	-	
<b>Total Other Variable Charges</b>	<b>6.03</b>	<b>29.48</b>

6.4.12 The Commission approves Other Variable Charges submitted by MSPGCL. The total approved fuel cost for both the Units is shown in the table below:

**Table 86: Total Variable Charges as Approved by the Commission (Rs. Crore)**

Generating Stations	FY 2009-10		
	Approved in APR	Actual/ Audited	Trued up
Paras Unit 3	233.20	254.09	204.93
Parli Unit 6	256.24	271.38	221.66

### Operation and Maintenance expenses

#### MSPGCL's Submission

6.4.13 In the APR Order for FY 2009-10, the Commission had approved O&M expenses of Rs 32.95 Crore each for Parli Unit -6 and Paras Unit -3. However, the Commission did not consider the impact of pay revision in the APR Order. The actual O&M expenses for Paras Unit 3 are Rs 27.02 Crore and for Parli Unit 6 are Rs 37.6 Crore.

6.4.14 MSPGCL requested the Commission to consider the O&M expenses at normative levels for the purpose of Truing-up along with the impact of pay revision. As per MSPGCL, the impact of pay revision leads to normative O&M expenses of Rs 14.40 lakhs/MW which translates into normative expenses of Rs 36 Crore for FY 2009-10. MSPGCL submitted that the Pay revision in FY 2008-09 had an impact of Rs. 95 Crore on the employee expenses. This impact is approximately 21% of the actual employee expense for FY 2007-08. Therefore, employee expense for FY 2007-08 was subjected to a one-time escalation of 21% to capture the impact of pay revision. After capturing the impact of pay revision, normal escalation of 5.29% was applied to work normative expenses for FY 2008-09. Further, to arrive at the O&M expense for FY 2010-11 and FY 2011-12, escalation rates of 5.48%, 7.86% and 7.86% were applied in FY 2009-10, FY 2010-11 and FY 2011-12 respectively over the normative expenses for FY 2008-09. The detailed calculations provided by the Petitioner are as follows:

**Table 87: O&M cost submitted by MSPGCL**

Particulars	FY 2005-06	FY 2006-07	FY 2007-08
Rs Lakhs/MW	10.82	11.25	11.86
Escalation rate over previous year		4.00%	5.38%

MSPGCL actual for FY 07-08	Expenses (Rs. Crore.)	Expenses (Rs. Lakhs/MW)
Employee expense	428.24	5.25
A&G expense	57.72	0.71
R&M expense	481.70	5.90
O&M expense	967.66	11.86

Particulars	FY 2008-09	FY 2009-10	FY 2010-11
Rs. Lakhs/MW	13.65	14.4	15.53
Escalation rate over previous year		5.48%	7.86%

**Commissions Analysis and Ruling**

6.4.15 The Commission has considered the O&M expenses on normative basis for FY 2005-06 as Rs. 10.82 Lakh/MW as specified in Regulation 34.6.2 of the MERC (Terms and Conditions of Tariff) Regulations, 2005 for a new generating station. Further, the Commission has considered an escalation rate of 4% per annum to arrive at O&M expenses for FY 2006-07. The normative O&M expenses for FY 2007-08, FY 2008-09 and FY 2009-10 have been considered based on respective escalation rates as approved by the Commission in the MYT Order and APR Orders of MSPGCL, in accordance with the increase in Wholesale Price Index (WPI) and Consumer Price Index (CPI).

6.4.16 The Commission has considered the sharing of efficiency gains in O&M expenses between MSPGCL and Distribution Licensee (MSEDCL) in accordance with the provisions of MERC (Terms and Conditions of Tariff) Regulations, 2005. The summary of O&M expenses as approved by the Commission is provided in the Table below:

**Table 88: O&M expenses Trued-up for FY 2009-10 (Rs. Crore)**

Particulars	Approved	Actual/Audited	Trued Up
Paras Unit 3	32.95	32.95	36.00
ParliUnit 6	32.95	37.58	36.00

## 6.5 Interest expense

### MSPGCL's Submission

6.5.1 MSPGCL submitted that the Commission in the APR Order for 2009-10 had approved net interest expenses of Rs 86.79 Crore for Parli Unit -6 and Rs. 90.59 Crore for Paras Unit -3. The actual capital cost as submitted by MSPGCL in its APR Petition (Scenario 1) was as follows:

**Table 89: Actual Capital Cost (Rs. Crore) as on March 31, 2009**

Particulars	Capital Cost (Rs. Crore)
Paras Unit 3	1596.61
ParliUnit 6	1511.50



6.5.2 MSPGCL submitted that as per the Audited Accounts, the interest expenses in FY 2009-10 work out to be Rs 95.64 Crore for Parli Unit-6 and Rs 104.32 Crore for Paras Unit-3. Interest expenses for FY 2009-10 in case of Parli Unit – 6 also include the other finance charge of Rs. 13.70 Crore.

#### **Commission’s Analysis and Ruling**

6.5.3 As summarized in Section 6.2 of this Order, the Commission approved the project cost for both Paras Unit 3 and Parli Unit 6 in its Order in Case no. 74 of 2011 for Unit 3 of Paras Thermal Power Station and Case no. 75 of 2011 for Unit No. 6 for Parli Thermal Power station and the additional Capitalization approved in Case No 107 of 2009.

6.5.4 Based on the approved project cost, the Commission computed the interest cost applying the effective rate of interest as submitted by MSPGCL and has considered the same for Truing up purpose. In case of Paras Unit 3 and Parli Unit 6, the Commission has approved the finance charges as submitted by MSPGCL. The table below shows the Interest cost as provided by MSPGCL and as Trued up by Commission.

**Table 90: Trued-up Interest Cost and Finance Charges (Rs. Crore)**

<b>Particulars</b>	<b>Actual/Audited</b>	<b>Trued Up</b>
Paras Unit 3	104.32	96.45
Parli Unit 6	95.64	89.39

#### **6.6 Depreciation and Advance Against Depreciation**

##### **MSPGCL’s Submission**

6.6.1 MSPGCL submitted that the Commission had permitted Depreciation of Rs. 47.89 Crore for Parli Unit 6 and Rs. 46.33 Crore for Paras Unit -3 but based on the actual GFA as per the specified rates by the Commission. The Depreciation claim works out to Rs 53.60 Crore for Parli Unit 6 and Rs. 57.35 Crore for Paras Unit 3. MSPGCL further submitted that the Commission has been approving Depreciation on opening GFA but based on the following finding in the Hon'ble ATE's Judgment in Appeal No 137 of 2008 dated July 15, 2009, Depreciation should be given on the assets which are added during the year of operation:

*“In view of the provisions of the Tariff Regulations the Companies Act and the Accounting Standard-6, we find full justification and rationale in the contention of the appellant that proportionate depreciation has to be allowed even for part of the year when the assets have been put to use. The asset once put to use will be exposed to wear and tear which will not wait to depreciate till the start of the new financial year. We, therefore, allow the appeal in this view of the matter also.”*

6.6.2 MSPGCL submitted that the Commission may allow the Depreciation on the asset added during the year as well. MSPGCL submitted that the Commission had not allowed the Advance Against Depreciation as it had considered the AAD for MSPGCL as a whole. MSPGCL requested the Commission to allow the recovery of station wise AAD. The table below shows MSPGCL's submission on Depreciation and Advance Against Depreciation.

**Table 91: MSPGCL's submission on Depreciation and Advance against Depreciation (Rs. Crore)**

Station	Depreciation	Loan Repayment	AAD
Parli Unit 6	53.60	114.16	60.55
Paras Unit 3	57.35	103.30	45.95

**Commission's Analysis and Ruling**

6.6.3 The Commission has computed the Depreciation as per the Regulation 34.4 of MERC (Terms and Conditions of Tariff) Regulations, 2005.

6.6.4 As per the Hon'ble ATE's Judgment in Appeal No 137 of 2008 dated July 15, 2009 the Commission has considered Depreciation on assets added during the year.

6.6.5 In case of Advance Against Depreciation the Commission had taken due cognizance of the following findings of the Hon'ble ATE's Judgment dated April 27, 2011 in Appeal No. 72 of 2010,:

*“This issue has already been decided by this Tribunal in its Judgment dated 27th April, 2011 in Appeal no. 191 of 2009 in the matter of Maharashtra State Power Generation Co. Ltd. vs. Maharashtra Electricity Regulatory Commission & Ors. which would apply to the present facts of this case. Accordingly, the State Commission is directed to re-determine station-wise AAD as per its Regulations by following the Judgment of this Tribunal referred to above.”*

6.6.6 The Commission has computed the AAD station wise based on the loan repayment, Depreciation and the difference thereof. The table below provides the Depreciation and AAD Trued up by the Commission.

**Table 92: Depreciation and Advance against depreciation Trued up for FY 2009-10 (Rs. Crore)**

<b>Depreciation</b>	<b>APR</b>	<b>Actual/Audited</b>	<b>Trued Up</b>
Paras Unit 3	47.64	57.35	51.95
ParliUnit 6	44.74	53.60	49.77
<b>AAD</b>	<b>APR</b>	<b>Actual/Audited</b>	<b>Trued Up</b>
Paras Unit 3	53.06	45.95	49.82
Parli Unit 6	47.22	60.55	48.80

## **6.7 Return on Equity (RoE)**

### **MSPGCL's Submission**

6.7.1 MSPGCL has submitted that the Return on Equity for Paras Unit 3 and Parli Unit 6 works out to Rs. 70.78 Crore and Rs. 62.67 Crore respectively.

### **Commission's Analysis and Ruling**

6.7.2 The Commission has recomputed the Return on Equity based on the approved project cost as per its Order dated July 26, 2011 in case no 74 and 75 of 2011 and due to additional capitalization as per the Commission's Order dated April 13, 2011 in case No. 107 of 2009. The Commission has considered 14% Return on Equity as specified in the Regulation 34.1 of MERC (Terms and Conditions of Tariff) Regulations, 2005. The table below shows the Return on Equity submitted by MSPGCL and allowed by the Commission.

**Table 93: Return on Equity (Rs. Crore)**

Station	Actual/Audited	Commission
Paras Unit 3	70.78	59.66
Parli Unit 6	62.67	58.54

## 6.8 Interest on Working Capital

### MSPGCL's Submission

6.8.1 MSPGCL submitted that Interest on Working Capital has been computed based on the norms and the actual O&M expenses, fuel expenses, maintenance spares and receivables as per the capital cost submitted by the Petitioner in APR Order for FY 2009-10. MSPGCL has considered the normative interest rate of 12.25% as considered by the Commission in the APR Order for FY 2009-10. The Interest on Working Capital at 12.25% works out to be Rs 17.10 Crore for Parli Unit 6 and Rs 16.69 Crore for Paras Unit 3.

### Commission's Analysis and Ruling

6.8.2 The Commission has computed the Interest on Working Capital on normative basis as per Section 34.5 of MERC (Terms and Conditions of Tariff) Regulations 2005. The Commission has considered rate of 12.25% for computing Interest on Working Capital as submitted by MSPGCL.

**Table 94: Interest on Working Capital Trued up (Rs. Crore)**

Station	APR	MSPGCL	Trued Up
Paras Unit 3	14.88	16.69	14.65
Parli Unit 6	14.12	17.29	14.64

## 6.9 Reduction in Annual Fixed Charges on account of Reduction in Availability

6.9.1 The actual Availability of Parli Unit 6 during FY 2009-10 was lower than that approved by the Commission. As per the Regulation 33.11 of MERC (Terms and Conditions of Tariff) Regulations, 2005 the target Availability for full recovery of Annual Fixed Charges is 80%. Accordingly the Annual Fixed Charges based on the approved Availability have been reduced by the Commission in accordance with Availability data submitted by MSPGCL. The tables below show the reduction in Annual Fixed Charges of Parli Unit 6 and Paras Unit 3, for FY 2009-10.

**Table 95: Reduction in Annual Fixed Charges of Parli Unit 6 and Paras Unit 3 for FY 2009-10 (Rs. Crore)**

Reduction of AFC for FY 2009-10	AFC after Truing up	Actual Availability	Normative Availability	Reduced AFC	AFC to be disallowed (Rs. CR)
Paras 3	308.54	71.86%	80.00%	277.14	31.40
Parli 6	297.14	68.95%	80.00%	256.11	41.03

## 6.10 Revenue side True-up for FY 2009-10

6.10.1 MSPFCL provided the revenue recovered by it in the FY 2009-10, which is tabulated below:

**Table 96: Revenue considered by MSPGCL in FY 2009-10 (Rs. Crore)**

Item	Paras Unit-3	Parli Unit-6
Revenue from sale of power (excluding FAC)	400.84	387.90
Revenue from FAC	41.86	21.91
<b>Sub-total</b>	<b>442.70</b>	<b>409.81</b>
Non-Tariff Income	0.85	0.98
<b>Total Revenue as per Accounts</b>	<b>443.55</b>	<b>410.79</b>

6.10.2 MSPGCL submitted a comparison of approved revenue vis-à-vis the actual revenue earned during the year as given in the Table below

**Table 97: Revenue side True up for FY 2009-10 (Rs. Crore)**

Revenue Side True-up	Approved (A)	Actual (B)	True-Up (B-A)
Parli U-6	490.49	344.73	145.76
Paras U-3	473.72	396.15	77.57

### Commission's Analysis and Ruling

6.10.3 The Commission has considered the actual Audited revenue submitted by MSPGCL for FY 2009-10 while carrying out Truing up of revenue.

### 6.11 Truing up summary for Parli Unit 6 and Paras Unit 3

6.11.1 The Commission, in accordance with the provisions of MERC (Terms and Conditions of Tariff) Regulations, 2005, has allowed the expenses for FY 2009-10 based on performance parameters approved in the Order and has carried out the sharing of efficiency gains and losses under following heads:

- Sharing of losses in fuel expenses:
- Sharing of gains in O&M expenses:
- Sharing on account of Interest on Working Capital:

6.11.2 In accordance with the MERC (Terms and Conditions of Tariff) Regulations, 2005, the Commission has shared 1/3rd of the gains and losses with the Distribution Licensees, while 2/3rd of gains are allowed to be retained by MSPGCL and 2/3rd of losses are to be borne by MSPGCL. The summary of Truing up for FY 2009-10 considering sharing of gains and losses is given in following table:

**Table 98: Summary of Truing up of Paras Unit 3 for FY 2009-10 (Rs Crore)**

Particulars (Paras Unit 3 for FY 2009-10)	Actual/Audited	Trued Up	Deviation	Efficiency gain and Loss	Net Entitlement
Expenses Side True-up					
Cost of Generation	254.09	204.93	(49.16)	(16.39)	221.32
O & M Expenses	32.95	36.00	3.05	1.02	34.98
Depreciation	57.35	51.95			51.95
AAD	45.95	49.83			49.83
Interest and Finance Charges on Long Term Loans	104.32	96.45			96.45

<b>Particulars (Paras Unit 3 for FY 2009-10)</b>	<b>Actual/Audited</b>	<b>Trued Up</b>	<b>Deviation</b>	<b>Efficiency gain and Loss</b>	<b>Net Entitlement</b>
Interest on working capital	16.69	14.65	(2.04)	(0.68)	15.33
Income tax			-		-
Return on Equity	70.78	59.66			59.66
<b>Aggregate Revenue Requirement</b>	582.14	513.47			529.52
Total Revenue (including FAC and NTI)	396.15	396.15			396.15
Gap/(surplus)					133.37
Reduction in AFC					31.40
Gap after adjusting for AFC					101.97
Total Gap/(Surplus)					101.97

**Table 99: Summary of Truing up of Parli Unit 6 for FY 2009-10 (Rs Crore)**

<b>Particulars (Parli Unit 6 for FY 2009-10)</b>	<b>Actual/Audited</b>	<b>Trued Up</b>	<b>Deviation</b>	<b>Efficiency gain and Loss</b>	<b>Net Entitlement</b>
Expenses Side True-up					
Cost of Generation	271.38	221.66	(49.72)	(16.57)	238.23
O & M Expenses	32.95	36.00	3.05	1.02	34.98
Depreciation	53.60	49.77			49.77
AAD	60.55	48.80			48.80
Interest and Finance Charges on Long Term Loans	95.64	89.39			89.39
Interest on working capital	17.10	14.64	(2.46)	(0.82)	15.46
Income tax			-		-
Return on Equity	62.67	58.54			58.54
<b>Aggregate Revenue Requirement</b>	593.89	518.80			535.17
Total Revenue (including FAC and NTI)	344.73	344.73			344.73
Gap/(surplus)					190.44
Reduction in AFC					41.03
Gap after adjusting for AFC					149.41
Total Gap/(Surplus)					149.41

6.11.3 As observed from the above tables, after final True up, Paras Unit 3 has a gap of Rs. 101.97 Crore and Parli Unit 6 has a gap of Rs. 149.41 Crore respectively in FY 2009-10.



## **7 ANNUAL PERFORMANCE REVIEW FOR FY 2010-11**

### **7.1 Availability and PLF of Parli Unit 6 and Paras Unit 3 Parli Unit 6**

7.1.1 MSPGCL submitted that the Availability during FY 2010-11 for Parli Unit 6 has been 74%. MSPGCL submitted that the key reasons for the deviation from the normative Availability are as follows:

- From April 2010 to Feb 2011 loss of Generation due to CHP problem has been around 185.93 MUs (35% of total loss of generation). Only one-coal stream was provided at Parli Unit-6. Due to CHP breakdown, load on the Unit was reduced, which resulted in generation loss.
- Loss of generation due to PCQ was 102.102 MUs in the period April 2010 to Feb 2011 (19.73 % of total loss of generation)
- Loss of Generation due to wet coal during rainy season was 64.40 MUs (12.45 % of total loss of generation)
- Loss of generation due to Boiler Tube Leakage was 43 MUs (8.33 % of total loss of generation).

#### **Paras Unit 3**

7.1.2 MSPGCL submitted that the Availability in FY 2010 -11 for Paras Unit 3 had been 70.32%. The Unit observed low Availability due to 24 tripping and high partial incidences loading.

7.1.3 MSPGCL further submitted that in the second quarter of FY 2010-11, the performance has deteriorated due to CHP constraints, exorbitant monsoon rains and BTL. During the April to December period of FY 2010-11, the total forced outages were 9.05% and planned outages were 1.05%. (i.e. total outages 10.10% - 503.03 MU's). The partial loss apart from these outages was 25.10% - 296.71 MU's. This partial loss was mainly on account of loss of generation due to coal handling plant problems – 13.72%. This huge loss had occurred due to single stream coal conveying system at Paras TPS. Problems to coal conveyor belt C1 to C4 either resulted into stoppage of coal stacking or coal bunkering or both.

#### **Commission's Analysis and Ruling**

- 7.1.4 The Commission has observed that from the time the Unit has achieved CoD and has come into operation it has not achieved the target PLF and Availability. The Commission is of the view that MSPGCL has not followed standard industry practices and has declared Commercial Operation Date (CoD) of both the Units within 6 months from the date of synchronization without conducting necessary checks and Performance Guarantee tests.
- 7.1.5 As regards Availability of the two Units the Commission observes that since the Units are new, these are expected to operate at full efficiency. The Commission hence, finds no reasons to deviate from the operational norms specified in the MERC (Terms and Conditions of Tariff) Regulations, 2005. The Commission, therefore, for FY 2010-11 approves Availability of 80% for full recovery of fixed charges for both the Units.
- 7.1.6 The Commission for the Annual Performance Review Exercise approves the normative Availability and PLF of 80% and at the time of final Truing up the Commission will examine the reasons for deviations if any and may address the issue appropriately. The table below shows the PLF and Availability of Paras Unit 3 and Parli Unit 6 as approved by submitted by MSPGCL as well as that approved by Commission.
- 7.1.7 As regards to Transit Loss, the Commission has considered normative Transit Loss of 0.8% as per the provisions of MERC (Terms and Conditions of Tariff) Regulations, 2005, and the benefit in case of Parli Unit 6 and loss in case of Paras Unit 3 on account of variation between actual and normative Transit Loss is being shared between the Generating Company and the Distribution Licensee (MSEDCL) in accordance with mechanism of sharing of efficiency gains and losses specified in the MERC (Terms and Conditions of Tariff) Regulations, 2005.

**Table 100: Performance Parameters for MSPGCL for FY 2010-11**

Particulars	Paras Unit 3		Parli Unit 6	
	MSPGCL	Approved	MSPGCL	Approved
Installed Capacity (MW)	250	250	250	250
Availability (%)	70.33%	80.00%	74.00%	80.00%
PLF (%)	70.32%	80.00%	74.00%	80.00%
Gross Generation (MUs)	1462.35	1752.00	1620.55	1752.00
Transit Loss (%)	1.50%	0.80%	-	0.80%

## 7.2 Auxiliary Consumption

### MSPGCL's Submission

#### Parli Unit 6

- 7.2.1 MSPGCL submitted that Auxiliary Consumption for Parli Unit-6 had been at 10.82% in FY 2010-11. The consumption was on higher side on account of Partial loading on Unit due to shortage of coal because of CHP problem.

#### Paras Unit 3

- 7.2.2 MSPGCL submitted that Auxiliary Consumption in FY 2010-11 for Paras Unit 3 had been 10.50%. The consumption was on higher side on account of low PLF of the Units.

### Commission's Analysis and Ruling

- 7.2.3 As regards to Auxiliary Consumption, the Commission is of the view that since, the two Units are new, the Units should operate at full efficiency and therefore, the Commission finds no reason to allow a higher Auxiliary Consumption for Parli Unit 6 and Paras Unit 3, as compared to the Auxiliary Consumption norm specified in the MERC (Terms and Conditions of Tariff) Regulations, 2005.

**Table 101: Auxiliary Consumption for FY 2010-11**

Particulars	MSPGCL	Approved
Paras Unit 3	10.50%	9.00%
Parli Unit 6	10.82%	9.00%

## 7.3 Station Heat Rate (SHR)

### MSPGCL's Submission

#### Parli Unit 6

- 7.3.1 MSPGCL submitted that SHR of the Unit 6 of Parli had been 2556 kCal/kWh in FY 2010-11. MSPGCL further submitted that the SHR of Parli Unit 6 has been slightly higher than the normative rate because of Partial loading on unit due to shortage of coal because of CHP problem. Even the flue gas temperature at Air heater outlet was more (up to 150 deg C) than that of design value i.e.128 deg C.

### **Paras Unit 3**

- 7.3.2 MSPGCL submitted that SHR of Paras Unit 3 has been 2633.05 kCal/kWh for FY 2010-11. The Station Heat Rate was high due to coal yard problems, heavy rainfall, muddy and sticky coal and bunkering problems owing to single stream design of CHP, the excessive oil support was required to be availed. Thus, this Unit consumed 47399 MkCal extra heat input on account of oil (5164.24 KL Extra oil consumption). This resulted into about 44.77 kCal/kWh increase in heat rate. MSPGCL further submitted that there were large number of trippings in FY 2010-11 which resulted into increase in Station Heat Rate due to cyclic deviations on account of extra fuel, higher DM water consumption during light up to synchronization of Unit.
- 7.3.3 MSPGCL submitted that the PLF during this period was low, as most of the time this Unit was under partial loading due to CHP problem, CHP bunkering problems, heavy rainfall, wet / sticky / muddy coal etc. These factors led to partial loading and resulted into additional heat input.

### **Commission's Analysis and Ruling**

- 7.3.4 As regards to Station Heat Rate (SHR), the Commission has analyzed the submissions made by MSPGCL. The Commission observes that some of these problems such as deficient working of the air pre-heaters, thereby partial recovery of heat from the flue gases are due to technical deficiencies, some problems such as CHP problem or BTL problems are due to procurement of inferior quality coal, the problems such as provision of single conveyor stream system are possibly due to deficient basic design of the system. The cost of these flaws should not be passed on to the Consumers. During the Public hearings held at various locations in Maharashtra, the Consumer representatives have indicated that they all are well aware of these deficiencies and have pinpointed the areas where improvement is essential. Under such background, the Commission finds no merit in allowing higher heat rate on account of frequent failure of equipment. The Commission observes that the two Units are new and the 250 MW Units are proven technologies and therefore ideally such issues should not arise as the Units are expected to operate efficiently. The Commission has adhered to the provisions of MERC Tariff Regulations, 2005, while approving the heat rate for the two Units.

**Table 102: Station Heat Rate (kCal/kWh) for FY 2010-11**

Particulars	MSPGCL	Approved
Paras Unit 3	2633.05	2500.00
Parli Unit 6	2556.00	2500.00

**7.4 Specific Oil Consumption****MSPGCL's Submission****Parli Unit 6**

7.4.1 MSPGCL submitted that Specific Oil Consumption in FY 2010-11 has been at 3.93 ml/ kWh. The key reason for the same is the low PLF in FY 2010-11.

**Paras Unit 3**

7.4.2 MSPGCL submitted that the Specific Oil consumption was 5.45 ml/kWh in FY 2010-11. This was due to the heavy and continuous rainfall in Vidarbha Region in the monsoons, large number of startups during this period and load restriction due to partial loading. It further submitted that after the monsoon season, the Specific Oil Consumption was reduced and it was close to the normative parameter.

**Commission's Analysis and Ruling**

7.4.3 As regards Secondary Fuel Oil consumption, the Commission observes that the secondary fuel oil consumption of both the Units is very high for FY 2010-11. This is despite the fact the Units are new. The Commission finds no merit in allowing higher Secondary Fuel Oil consumption on account of frequent breakdowns and tripping which is not expected from newly Commissioned Units. Further, the Commission would not like to approve extra cost incurred due to problem in basic design of coal yard and due to procurement of low quality coal therefore, the Commission has considered normative Secondary Fuel Oil consumption of 2 ml/kWh as stipulated in the MERC (Terms and Conditions of Tariff) Regulations, 2005.

**Table 103: Specific Oil Consumption (ml/kWh) for FY 2010-11**

Particulars	As submitted by MSPGCL	As approved by Commission
Paras Unit 3	5.45	2.00
Parli Unit 6	3.93	2.00

## 7.5 Gross and Net Generation

7.5.1 The Commission, based on the approach mentioned in above paragraphs has approved gross and net generation for both the Units as shown in the tables below.

**Table 104: Approved Gross and Net Generation (MU) for Paras Unit 3 and Parli Unit No. 6**

Particulars	Gross Generation		Net Generation	
	MSPGCL	Approved	MSPGCL	Approved
Paras Unit 3	1462.35	1752.00	1308.81	1594.32
Parli Unit 6	1620.55	1752.00	1445.29	1594.32

## 7.6 Variable Cost for Parli Unit 6 and Paras Unit 3

### 7.6.1 Fuel Cost for FY 2010-11

7.6.2 Based on the technical parameters approved above paragraphs for FY 2010-11, the Commission has computed the cost of fuel for FY 2010-11.

**Table 105: Fuel Cost of Paras Unit 3 for FY 2010-11**

Paras Unit 3	Units	April - March (Actuals)	Approved
<b>Operational Parameters</b>			
Total Capacity	MW	250.00	250.00
Availability	%	70.32%	80.00%
PLF	%	0.70	80.00%
Gross Generation	MU	1462.35	1752.00
Auxiliary Energy Consumption	%	10.50%	9.00%
Auxiliary Energy Consumption	MU	153.55	157.68
Net Generation	MU	1308.81	1594.32
Heat Rate	kcal/kWh	2633.05	2500.00
<b>Fuel Parameters (for each primary and secondary fuel)</b>			
<b>Calorific Value</b>		3308.66	
Fuel 1 (Indian Coal)	Kcal/Kg	3152.01	3152.01
Fuel 1 (Imported Coal)	Kcal/Kg	0.00	0.00
Fuel 1 (Washed Coal)	Kcal/Kg	3366.05	3366.05
Fuel 2 (F. O.)	Kcal/Kg	10267.13	10,267.13
Fuel 3 (L. D. O.)	Kcal/Kg	10718.96	10718.96
Fuel 4 (LSHS)	Kcal/Kg		
Fuel 3 (HSD)	Kcal/Kg		
<b>Landed Fuel Price per unit</b>			
Fuel 1 (Indian Coal)	Rs/MT	1858.02	1844.91
Fuel 1 (Imported Coal)	Rs/MT		
Fuel 1 (Washed Coal)	Rs/MT	2169.91	2169.91
Fuel 2 (F. O.)	Rs/KL	27204.01	27204.01
Fuel 3 (L. D. O.)	Rs/KL	36660.23	36660.23
Fuel 4 (LSHS)	Rs/KL		
Fuel 3 (HSD)	Rs/KL		
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>			
<b>Specific Fuel Consumption</b>			
Fuel 1 (Indian Coal)	Kg/kWh	0.21	0.21
Fuel 1 (Imported Coal)	Kg/kWh	-	-

Paras Unit 3	Units	April - March (Actuals)	Approved
Fuel 1 (Washed Coal)	Kg/kWh	0.57	0.54
Fuel 2 (F. O.)	ml/kWh	4.73	1.74
Fuel 3 (L. D. O.)	ml/kWh	0.72	0.26
Fuel 4 (LSHS)	ml/kWh		
<b>Total Fuel Consumption</b>			
Fuel 1 (Indian Coal)	MT	305,881	369,748
Fuel 1 (Imported Coal)	MT	-	
Fuel 1 (Washed Coal)	MT	834,925	945,080
Fuel 2 (F. O.)	KL	6,923	3,043
Fuel 3 (L. D. O.)	KL	1,050	461
Fuel 4 (LSHS)	KL	-	
Fuel 3 (HSD)	KL	-	
<b>Heat Content (each fuel separately)</b>			
Fuel 1 (Indian Coal)	Million kcal	1,012,055	1,165,450
Fuel 1 (Imported Coal)	Million kcal		
Fuel 1 (Washed Coal)	Million kcal	2,762,483	3,181,186
Fuel 2 (F. O.)	Million kcal	66,315	29,146
Fuel 3 (L. D. O.)	Million kcal	9,599	4,219
Fuel 4 (LSHS)	Million kcal		
Fuel 3 (HSD)	Million kcal		
<b>Total Heat Content</b>		<b>3,850,452</b>	<b>4,380,000</b>
<b>Total Fuel Cost</b>			
Fuel 1 (Indian Coal)	Rs Crore	56.83	68.22
Fuel 1 (Imported Coal)	Rs Crore	-	
Fuel 1 (Washed Coal)	Rs Crore	181.17	205.07
Fuel 2 (F. O.)	Rs Crore	18.83	8.28
Fuel 3 (L. D. O.)	Rs Crore	3.85	1.69
Fuel 4 (LSHS)	Rs Crore		
<b>Total Fuel Cost</b>	Rs Crore	<b>260.69</b>	<b>283.26</b>

**Table 106: Fuel cost of Parli Unit 6 for FY 2010-11**

Parli Unit 6	Units	April - March (Actuals)	Approved
<b>Operational Parameters</b>			
Total Capacity	MW	250.00	250.00
Availability	%	73.998%	80.00%
PLF	%	73.998%	80.00%
Gross Generation	MU	1620.55	1752.00
Auxiliary Energy Consumption	%	10.82%	9.00%
Auxiliary Energy Consumption	MU	175.27	157.68
Net Generation	MU	1445.29	1594.32
Heat Rate	kcal/kWh	2556.00	2500.00



Parli Unit 6	Units	April - March (Actuals)	Approved
<b>Fuel Parameters (for each primary and secondary fuel)</b>			
<b>Calorific Value</b>		3342.00	
Fuel 1 (Indian Coal)	Kcal/Kg	3673.00	3673.00
Fuel 1 (Imported Coal)	Kcal/Kg	6336.00	6336.00
Fuel 1 (Washed Coal)	Kcal/Kg	4262.00	4262.00
Fuel 2 (F. O.)	Kcal/Kg	10072.00	10072.00
Fuel 3 (L. D. O.)	Kcal/Kg	10659.00	10659.00
Fuel 4 (LSHS)	Kcal/Kg		
Fuel 3 (HSD)	Kcal/Kg		
<b>Landed Fuel Price per unit</b>			
Fuel 1 (Indian Coal)	Rs/MT	2249.14	2267.28
Fuel 1 (Imported Coal)	Rs/MT	5841.97	5841.97
Fuel 1 (Washed Coal)	Rs/MT	2361.97	2361.97
Fuel 2 (F. O.)	Rs/KL	27382.98	27382.98
Fuel 3 (L. D. O.)	Rs/KL	38369.30	38369.30
Fuel 4 (LSHS)	Rs/KL		
Fuel 3 (HSD)	Rs/KL		
<b>Fuel Consumption and Heat Contribution (for each fuel separately)</b>			
<b>Specific Fuel Consumption</b>			
Fuel 1 (Indian Coal)	Kg/kWh	0.44	0.40
Fuel 1 (Imported Coal)	Kg/kWh	0.01	0.01
Fuel 1 (Washed Coal)	Kg/kWh	0.30	0.23
Fuel 2 (F. O.)	ml/kWh	2.90	1.48
Fuel 3 (L. D. O.)	ml/kWh	1.03	0.52
Fuel 4 (LSHS)	ml/kWh		
<b>Total Fuel Consumption</b>			
Fuel 1 (Indian Coal)	MT	720,810	698,221
Fuel 1 (Imported Coal)	MT	20,632	11,585
Fuel 1 (Washed Coal)	MT	480,447	401,075
Fuel 2 (F. O.)	KL	4,700	2,586
Fuel 3 (L. D. O.)	KL	1,668	918
Fuel 4 (LSHS)	KL		
Fuel 3 (HSD)	KL		
<b>Heat Content (each fuel separately)</b>			
Fuel 1 (Indian Coal)	Million kcal	2,408,946	2,564,567
Fuel 1 (Imported Coal)	Million kcal	68,951	73,405
Fuel 1 (Washed Coal)	Million kcal	1,605,653	1,709,380
Fuel 2 (F. O.)	Million kcal	44,167	24,303
Fuel 3 (L. D. O.)	Million kcal	15,166	8,345

<b>Parli Unit 6</b>	<b>Units</b>	<b>April - March (Actuals)</b>	<b>Approved</b>
Fuel 4 (LSHS)	Million kcal		
Fuel 3 (HSD)	Million kcal		
<b>Total Heat Content</b>		<b>4,142,882</b>	<b>4,380,000</b>
<b>Total Fuel Cost</b>			
Fuel 1 (Indian Coal)	Rs Crore	162.12	158.31
Fuel 1 (Imported Coal)	Rs Crore	12.05	
Fuel 1 (Washed Coal)	Rs Crore	113.48	94.73
Fuel 2 (F. O.)	Rs Crore	12.87	7.08
Fuel 3 (L. D. O.)	Rs Crore	6.40	3.52
Fuel 4 (LSHS)	Rs Crore		
<b>Total Fuel Cost</b>	Rs Crore	<b>306.92</b>	<b>263.64</b>

7.6.3 MSPGCL in the formats submitted that the total fuel cost for Parli Unit 6 and Paras Unit 3, is Rs. 269.07 Crore and Rs. 333.14 Crore, respectively..

7.6.4 The Commission approves the entire Other Variable Charges as submitted by the MSPGCL for the FY 2010-11

**Table 107: Fuel cost Approved for Parli Unit 6 and Paras Unit 3 for FY 2010-11 (Rs. Crore)**

<b>Particulars</b>	<b>MSPGCL</b>	<b>Approved</b>
Paras Unit 3	269.07	291.64
Parli Unit 6	333.14	289.86

## **7.7 Operation and Maintenance expenses**

7.7.1 MSPGCL submitted that it has considered the O&M expenses approved for FY 2010-11 in the APR Order of FY 2009-10. However the Petitioner has requested the Commission to take into cognizance the impact of pay revision at the time of APR of FY 2010-11. As per MSPGCL, the normative O&M expenses work out as Rs. 38.83 Crore (@ 15.53 lakhs/ MW). The Table below shows the O&M expenses projected by Petitioner for FY 2010-11.

**Table 108: O&M expenses as submitted by MSPGCL for Paras Unit 3 & Parli Unit 6 for FY 2010-11 (Rs. Crore)**

<b>Particulars</b>	<b>MSPGCL</b>
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Particulars	MSPGCL
Paras Unit 3	38.83
Parli Unit 6	38.83

### Commission's Analysis and Ruling

- 7.7.2 The Commission has considered the normative O&M expense as per the MERC (Terms and Conditions of Tariff) Regulation 2005. The Commission has escalated the normative O&M expense approved for FY 2009-10 at 7.02% to arrive at the O&M expense for FY 2010-11.

**Table 109: O&M expenses approved by Commission for FY 2010-11(Rs. Crore)**

Particulars	MSPGCL	Approved
Paras Unit 3	38.83	38.53
Parli Unit 6	38.83	38.53

## 7.8 Capital Expenditure and Capitalization

### MSPGCL's Submission

- 7.8.1 MSPGCL in the formats has submitted the additional capitalization of Rs. 3.24 Crore for Paras Unit 3 and Rs.45.03 Crore for Parli Unit 6.

### Commission's Analysis and Ruling

- 7.8.2 Capital expenditure and capitalization are two important variables that influence computation of various critical parameters such as depreciation, advance against depreciation, and interest on long term debt and return on equity.
- 7.8.3 The Commission at this stage approves Rs. 3.24 Crore for Paras Unit 3 and Rs.45.03 Crore for Parli Unit 6 for FY 2010-11 as submitted by MSPGCL and the same shall be Trued up based on the Audited Accounts at the final True up for FY 2010-11

## 7.9 Depreciation and Advance Against Depreciation

### MSPGCL's Submission

- 7.9.1 MSPGCL has calculated depreciation, on the opening Gross Fixed Assets of Parli Unit-6 and Paras Unit-3, at the rates specified in the MERC (Terms and Conditions of Tariff) Regulations, 2005 for FY 2010-11. MSPGCL has submitted depreciation and AAD for Parli Unit 6 as Rs. 105.91 Crore and Rs. 95.75 Crore for Paras Unit 3.
- 7.9.2 For the purpose of this Petition, MSPGCL has considered the opening Gross Fixed Assets for FY 2010-11 on the basis of Capital cost submitted by the Petitioner in the APR Petition (Scenario I). Further, GFA for both the Units is considered based on the capitalization plan for FY 2010-11.
- 7.9.3 MSPGCL has also submitted the AAD for both the stations.
- 7.9.4 MSPGCL has requested the Commission to allow the depreciation on the asset added during the year pursuant to the following finding in Hon'ble ATE's Judgment dated July 15, 2009 in Appeal No 137 of 2008:

*“In view of the provisions of the Tariff Regulations the Companies Act and the Accounting Standard-6, we find full justification and rationale in the contention of the appellant that proportionate depreciation has to be allowed even for part of the year when the assets have been put to use. The asset once put to use will be exposed to wear and tear which will not wait to depreciate till the start of the new financial year. We, therefore, allow the appeal in this view of the matter also.”*

#### **Commission's Analysis and Ruling**

- 7.9.5 The Commission has computed the Depreciation on the revised capital cost as per the Hon'ble ATE judgment vide Order date July 26, 2011 on Case no 74 and 75 of 2011. The Commission has also taken due cognizance of Hon'ble ATE Judgment for computing Depreciation and has allowed Depreciation on assets added during the year. The table below shows the Depreciation and AAD submitted by Petitioner and approved by the Commission.

**Table 110: Depreciation and AAD approved by Commission for FY 2010-11**

<b>Station</b>	<b>MSPGCL</b>	<b>Approved</b>
Paras Unit 3	95.75	95.75
ParliUnit 6	105.91	103.67

## 7.10 Interest on Long term Loans and Finance Charges

### MSPGCL's Submission

- 7.10.1 For computation of interest charges, the Petitioner has considered the actual interest rate as applicable to existing loans and has considered an interest rate of 12.00% for 2010-11 for the projected loan capital to be borrowed during FY 2010-11. The Petitioner also submitted that any deviation in interest expenses on account of variation of interest rate shall be considered based on actual, subject to prudence check, for the purpose of Truing up during subsequent Annual Performance Review. The Petitioner will accordingly approach the Commission for Truing-up on interest expenses based on Audited Accounts.
- 7.10.2 The Petitioner has submitted that the interest and finance charges for FY 2010-11 for Paras Unit 3 and Parli Unit 6 are Rs 91.29 Crore and Rs 91.28 Crore. Finance Charges for Parli Unit 6 are to the tune of Rs. 11.72 Crore.

### Commission's Analysis and Ruling

- 7.10.3 The Commission has computed the interest on long term loans based on the revised capital cost as approved by the Commission in the Case no. 74 and 75 of 2011. The Commission has approved the additional capitalization as submitted by MSPGCL and has also accepted the funding pattern for the same for computation of Interest on Long term loans. The Commission has also accepted the Finance charges as submitted by the MSPGCL. The table below shows the interest and finance charges approved by Commission for Paras Unit 3 and Parli Unit 6 for FY 2010-11.

**Table 111: Interest on Long Term Loans and Finance Charges (Rs. Crore)**

Station	MSPGCL	Approved
Paras Unit 3	91.29	83.40
ParliUnit 6	91.28	81.89

## 7.11 Interest on Working Capital

### MSPGCL's Submission

7.11.1 The Petitioner has worked out the working capital requirement based on the normative parameters. The Petitioner has computed revised estimates for FY 2010-11 for interest on working capital based at an interest rate of 11.75% for FY 2010-11.

#### **Commission's Analysis and Ruling**

7.11.2 Commission has computed Interest on Working capital based on the normative basis and has accepted the rate of 11.75% for FY 2010-11 for the same. The table below shows the Interest on Working Capital submitted by MSPGCL and approved by the Commission.

**Table 112: Interest on Working Capital for FY 2010-11 (Rs. Crore)**

<b>Station</b>	<b>MSPGCL</b>	<b>Approved</b>
Paras Unit 3	16.33	16.55
ParliUnit 6	18.36	16.37

#### **7.12 Return on Equity**

##### **MSPGCL's Submission**

7.12.1 MSPGCL has submitted that the capital cost submitted in the APR Petition (Scenario D) has been considered for computing the opening equity base for ROE calculation. MSPGCL has considered a return for FY 2010-11 at 14% of the opening balance of equity. The table below shows the Return on Equity submitted by MSPGCL for APR of FY 2010-11.

**Table 113: Return on Equity as submitted by MSPGCL (Rs. Crore)**

<b>Particulars</b>	<b>Parli Unit 6</b>	<b>Paras Unit 3</b>
Opening Balance of Equity (A)	447.64	505.58
Return on Equity [(A+B)*14%]	62.67	70.78

#### **Commission's Analysis and Ruling**

7.12.2 The Commission has computed Return on Equity based on the project cost approved by it as per the Order in case no 74 of 2011 for Parli Unit 6 and Order in Case no. 75 of 2011 for Paras Unit 3. The table below shows the Return on Equity computed by Commission at the rate of 14%.

**Table 114: Return on Equity for FY 2010-11 (Rs. Crore)**

Particulars	MSPGCL	Approved
Paras Unit 3	70.78	59.66
Parli Unit 6	62.67	58.54

### 7.13 Income Tax

#### MSPGCL's Submission

7.13.1 The Petitioner has considered income tax in FY 2010-11 on the eligible return on equity at the MAT rate of 19.93 % (18.50% base rate + 5% surcharge +3% cess).

**Table 115: Income Tax as submitted by MSPGCL for FY 2010-11 (Rs. Crore)**

Particulars	Parli Unit 6	Paras Unit 3
Return on Equity	62.67	70.78
Income Tax	12.49	14.11

#### Commission's Analysis and Ruling

7.13.2 The Commission has computed income tax based on the Return on Equity computed by it in the above para and as per MAT rate of 19.93 % (18.50% base rate + 5% surcharge+ 3% cess).

**Table 116: Income Tax approved by Commission for FY 2010-11 (Rs. Crore)**

Particulars	MSPGCL	Approved
Paras Unit 3	14.11	11.89
Parli Unit 6	12.49	11.67

### 7.14 Non-tariff Income

#### MSPGCL's Submission

7.14.1 MSPGCL submitted that the Non-tariff income for Paras Unit 3 for FY 2010-11 is Rs 2.41 Crore and for Parli Unit 6 is Rs. 1.50 Crore.

### Commission's Analysis and Ruling

7.14.2 The Commission has approved the non tariff income as per MSPGCL's submission which is Rs 2.41 Crore for Paras Unit 3 and Rs. 1.50 Crore for Parli Unit 6.

**Table 117: Summary of Annual Performance Review of Paras Unit 3 for FY 2010-11 (Rs. Crore)**

Particulars (Paras Unit 3 for FY 2010-11)	MERC Approved	Actual	Approved in the Order (Rs. Crore)
Cost of Generation	251.72	269.07	291.64
O & M Expenses	35.27	35.27	38.53
Depreciation including AAD	47.49	95.75	95.75
Interest and Finance Charges on Long Term Loans	80.5	91.29	83.40
Interest on working capital	13.78	16.33	16.55
Income tax		14.11	11.89
Return on Equity	55.57	70.78	59.66
<b>Gross Aggregate Revenue Requirement</b>	484.33	592.60	597.43
Non Tariff Income	0.84	2.41	2.41
<b>Net Aggregate revenue Requirement</b>	<b>483.49</b>	<b>590.20</b>	<b>595.02</b>

**Table 118: Summary of Annual Performance Review of Parli Unit 3 for FY 2010-11 (Rs. Crore)**

Particulars (Parli Unit 6 for FY 2010-11)	MERC Approved	Actual	Provisional Truing up (Rs. Crore)
Cost of Generation	273.45	333.14	289.86
O & M Expenses	35.27	35.27	38.53
Depreciation including AAD	46	105.91	103.67
Interest and Finance Charges on Long Term Loans	78.09	91.28	81.89
Interest on working capital	14.33	18.36	16.37
Income tax		12.49	11.67
Return on Equity	54.59	62.67	58.54
<b>Aggregate Revenue Requirement</b>	501.73	659.11	600.53
Non tariff Income	2	1.5	1.5



<b>Particulars (Parli Unit 6 for FY 2010-11)</b>	<b>MERC Approved</b>	<b>Actual</b>	<b>Provisional Truing up (Rs. Crore)</b>
<b>Net Aggregate revenue Requirement</b>	<b>499.73</b>	<b>657.61</b>	<b>599.03</b>

7.14.3 The Annual Revenue Requirement for FY 2010-11 is Rs.595.02 Crore for Paras Unit 3 and Rs. 599.03 Crore for Parli Unit 6 respectively without considering the Revenue gap of FY 2009-10.

### **7.15 Applicability of the Order**

7.15.1 This Order shall come into force with immediate effect. The Commission acknowledges the efforts taken by the Consumer Representatives and other individuals and Organizations for their valuable contribution in the True up and APR determination process.

Sd/-

(Vijay L Sonavane)

Member

Sd/-

(V.P. Raja)

Chairman

**Appendix 1: List of People Participated in the Public Hearing**

Annexed as a separate Appendix.