



**THE UTTAR PRADESH ELECTRICITY REGULATORY COMMISSION  
LUCKNOW**

**Petition Nos. 647, 648, 649, 650, 651, 652, 653, 654, 655 and 656 of 2010**

**FILED BY**

**UP Rajya Vidyut Utpadan Nigam Limited (UPRVUNL)**

**IN THE MATTER OF:**

Determination of Multi Year Tariff (MYT) and approval of Annual Revenue Requirement (ARR) for Thermal Power Stations of U.P. Rajya Vidyut Utpadan Nigam Limited (UPRVUNL) for F.Y. 2009-10 to 2013-14.

**Anpara 'A'**

**Anpara 'B'**

**Obra 'A'**

**Obra 'B'**

**Panki**

**Harduaganj**

**Parichha**

**Parichha Extension**

**Harduaganj Extension**

**Parichha Extension Stage-II**

**Lucknow**

**Dated : 20<sup>th</sup> January, 2011**



## Multi Year Tariff of UPRVUNL for FY 2009-14

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## Multi Year Tariff of UPRVUNL for FY 2009-14

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**Petition Nos. 647, 648, 649, 650, 651, 652, 653, 654, 655 and 656 of 2010**

**BEFORE  
THE UTTAR PRADESH ELECTRICITY REGULATORY COMMISSION  
LUCKNOW**

**Date of Hearing :07.09.2010**

**Date of Order : 20 .01.2011**

**PRESENT:**

1. Hon'ble Shri Rajesh Awasthi, Chairman
2. Hon'ble Shri Shree Ram, Member
3. Hon'ble Smt Meenakshi Singh, Member

**IN THE MATTER OF:**

**Determination of Multi Year Tariff (MYT) and approval of Annual Revenue Requirement (ARR) for Anpara 'A', Anpara 'B', Obra 'A', Obra 'B', Panki, Harduaganj, Parichha, Parichha Extension, Harduaganj Extension and Parichha Extension Stage-II Thermal Power Stations of U.P. Rajya Vidyut Utpadan Nigam Limited (UPRVUNL) for F.Y. 2009-10 to 2013-14.**

**BETWEEN**

UP Rajya Vidyut Utpadan Nigam Limited (UPRVUNL),  
14<sup>th</sup> Floor, Shakti Bhawan Ext.,  
14, Ashok Marg, Lucknow

----- **Petitioner**

**AND**



1. The Chairman and Managing Director, U.P. Power Corporation Ltd., 7<sup>th</sup> Floor, Shakti Bhawan, 14, Ashok Marg, Lucknow
2. The Managing Director, Purvanchal Vidyut Vitran Nigam Ltd., 132KV Substation, Bhikharipur, Vidyut Nagar, Varanasi.
3. The Managing Director, Paschimanchal Vidyut Vitran Nigam Ltd., Victoria Park Meerut.
4. The Managing Director, Madhyanchal Vidyut Vitran Nigam Ltd., Gokhle Marg, Lucknow.
5. The Managing Director, Dakchinanchal Vidyut Vitran Nigam Ltd., Gailana Road, Agra.
6. The Managing Director, KESCO, Kesa House, Kanpur
7. The CEO, Noida Power Company Limited, H Block, Alpha II, Greater Noida.

----- Respondent(s)

**The following were present:**

1. Sri P. K. Agarwal, Director (Technical), UPRVUNL
2. Sri A. K. Agarwal, CGM (Finance), UPRVUNL
3. Sri Mahendra Kumar, CE (Comm.), UPRVUNL
4. Sri S. P. Choubey, SE (Comm.), UPRVUNL
5. Sri U. S. Gupta, EE (Comm.), UPRVUNL
6. Sri H. Aslam, EE (Comm.), UPRVUNL
7. Sri K. B. Singh, Dy. G.M., NTPC
8. Sri S. Mohan, Sr. Manager, (Comm.),
9. Sri NTPC Prashant Chaturvedi, Manager, NTPC
10. Sri. B. B. Jindal, Consultant
11. Sri B. S. Goel, Consultant
12. Sri Z. M. Farooqi, Consultant
13. Sri Bhusan Rastogi, Consultant



## Order

### 1. FOREWORD :

- 1.1 The U. P. Rajya Vidyut Utpadan Nigam Limited (UPRVUNL) filed petitions for determination of Multi Year Tariff (MYT) and approval of Annual Revenue Requirement (ARR) for Anpara 'A', Anpara 'B', Obra 'A', Obra 'B', Panki, Harduaganj, Parichha, Parichha Extension, Harduaganj Extension and Parichha Extension Stage-II Thermal Power Stations for F.Y. 2009-10 to 2013-14. The petitions were admitted by the Commission vide order dated August 16<sup>th</sup>, 2010 with direction to the Petitioner to publish the application in abridged form in at least two newspapers within 7 days from the date of order giving 7 days time for submission of suggestions and objections from all concerned. The Petitioner got the details published in newspapers on 30.08.2010 (Annexure-1). The Petitioner was also directed to put the petitions along with the relevant documents on its website and to make available hard copies of the same for inspection by any person during office hours at its Registered Office.
- 1.2 In the matter a Public Notice was given to the stakeholders and interested parties to give opportunity to submit comments/ objections/ suggestions to petitions in writing directly to the Commission's Office with an advance copy to the Petitioner, personally or by post. The Public Notice for hearing was published in Hindustan Times and Dainik Jagran on September 01, 2010 (Annexure-2) and hearing in the matter was held in the office of the Commission on 7.9.10 at 15:00 hrs.
- 1.3 In response to the public notice published in the above mentioned newspapers, the Commission did not receive any objections / suggestions / comments from any of the stakeholders till the date of hearing.



- 1.4** During the hearing, the representative of the Petitioner summarized the contents of the petitions. No specific concern against the petitions was raised by Respondents.
- 1.5** Based on the preliminary scrutiny of the petitions and the deliberations during the Public Hearing, the Commission directed UPRVUNL to submit some additional information within a week's time which was submitted by the Petitioner on September 15, 2010.
- 1.6** In its reply dated May 13, 2010 the Respondents have raised following issues:
- (1) Power Purchase Agreements (PPA) between UPPCL and UPRVUNL.
  - (2) Compliance of the directions of the Commission by UPRVUNL as per the Tariff Order for F.Y. 2005-06, 2006-07, 2007-08 and F.Y. 2008-09.
  - (3) Submission of certificates of Statutory Auditors by UPRVUNL in respect of Gross Calorific Values of Coal as well as Oil.
- 1.7** The Petitioner has made additional submissions in the matter required for determination of MYT on 08.06.2010, 06.09.2010, 15.09.2010 and 22.11.2010. The UPRVUNL was, however, advised by the Commission to forward a copy of the reply to the UPPCL for onward necessary action at their end. No reply from UPPCL has been received by the Commission till the time of writing of this order.

## **2. BACKGROUND:**

### **(A) Regulatory Framework:**

The Uttar Pradesh Electricity Reforms Act, 1999 (UP Act No. 24 of 1999, herein after referred to as the Reforms Act) set off the reforms in the power sector of Uttar Pradesh. According to the provisions of sub-sections (1) and (2) of section 23 of the Reforms Act, vide notification No. 149/P-1/2000-24, Lucknow, January 14, 2000, Uttar Pradesh Electricity Reforms Transfer Scheme, 2000 (hereinafter referred to as the Transfer Scheme) was notified. This transfer scheme had reorganized Uttar Pradesh State Electricity Board (UPSEB) by unbundling it into three separate entities i.e. Uttar Pradesh Power Corporation Limited (UPPCL), Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited (UPRVUNL) and Uttar Pradesh Jal Vidyut Nigam Limited (UPJVNL) w.e.f. 14.1.2000. UPPCL was vested with the responsibility of transmission and distribution of electricity, UPJVNL with the responsibility of hydro generation and UPRVUNL, a company which also existed prior to the date of reorganization of UPSEB, was vested with the responsibility of thermal generation.

The Electricity Act, 2003 (hereinafter referred to as EA, 03) came into effect from 10<sup>th</sup> June, 2003 and repealed all the erstwhile electricity Acts in the country viz. Indian Electricity Act, 1910 (9 of 1910), The Electricity (Supply) Act, 1948 (54 of 1948) and the Electricity Regulatory Commissions Act, 1998 (14 of 1998). Since the enforcement of this act, the power sector in India has undergone major organisational and functional changes. EA, 03 has specified in sub-section (3) of section 185 read with the schedule of enactments that the provisions of Uttar Pradesh Electricity Reforms Act, 1999, as far as not inconsistent with EA, 2003, shall apply. Under section 61 of EA, 03, the State Electricity Regulatory Commissions require to notify terms and conditions for determination of tariff of generation, transmission & distribution. Section 86 of the Act mandates the



Electricity Regulatory Commission to determine tariff in respect of Generating Companies and Licensees.

In exercise of powers conferred under 181 read with the provisions of the section 61 of EA, 03, UPERC notified the UPERC (Terms and Conditions of Generation Tariff) Regulations, 2004 effective from 18.6.05, the date of notification. Before expiry of the Regulations, the Commission had come up with UPERC (Terms and Conditions of Generation Tariff) Regulations, 2009 (hereinafter referred to as Generation Regulations, 09) w.e.f. 1.4.09 which shall remain effective till 31.3.2014 unless reviewed earlier or extended by the Commission.

For the regulation of generation of electricity from Captive and Non-Conventional Energy sources in the State, UPERC has separate Regulations recognized as CNCE Regulations.

**(B) Earlier Tariff Orders :**

- (i) Determination of tariff and approval of ARR for year 2005-06, 2006-07 & 2007-08, vide order dt. 26.3.2007:

The tariff order was issued for three financial years under Generation Regulations, 2004. The salient features of the order were as given below:

- (a) The tariff was determined for eight generating stations of UPRVUNL namely Anpara A, Anpara B, Harduaganj, Obra A, Obra B, Panki and Parichha and Parichha Extension with total derated capacity of 4297 MW as against installed capacity of 4430 MW. The tariff determined for the Parichha Extension was provisional with the condition that on Commissioning of unit no. 2, the Petitioner would bill the beneficiaries for the electricity supplied at the same rate as determined for unit-1 subject to retrospective revision.



- (b) The Commission had accepted the Gross Fixed Assets (GFA) submitted on 15.02.2007 i.e. ₹ 6271.46 Cr as on 14.1.2000 (opening balance under transfer scheme) and ₹ 6706.49 Cr as on 31.3.2005, total for all the power stations of UPRVUNL as these were found to be more consistent with the total GFA reflected in audited books of accounts of the Petitioner. **It was decided that this data would be used as base data for all future considerations and would not be subject to review.**
- (c) In the Tariff order of FY 2004-05, the Commission approved the depreciation for the power stations of UPRVUNL on the basis of Power Purchase Agreements (PPA) signed with UPPCL. However, the basis of tariff determination for FY 2005-06 to FY 2007-08 was taken as per the principles and guidelines outlined in Generation Regulations, 2004. It was decided that the weighted average rate of depreciation would be considered for tariff determination provided that the depreciation on capital spares, in case of plants which had lived up their useful life of 25 years, would not be allowed. In view of this, the Commission decided that for Obra A, Obra B, Panki & Harduaganj, where the vintage was more than 25 years, the weighted average rate of depreciation would be 3.54% and in case of Anpara A, Anpara B, Parichha & Parichha Extension 3.56% (computed by applying approved depreciation rates on the GFA as on 1.4.2005 with break-up of land, plant & machinery etc. taken from audited balance sheet of the Petitioner). **It was also decided that the truing up of depreciation would not be allowed.** Since UPRVUNL had not claimed any amount as Advance Against Depreciation (AAD) in its tariff petition, the Commission considered zero AAD.
- (d) **The Commission accepted total equity of UPRVUNL as ₹ 1798.55 Cr as on 31st March 2005** which was also consistent
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with the values of equity approved by the Commission for UPRVUNL in its previous tariff orders. In this order, the Commission had once again rejected the sum of ₹ 334.35 Cr, an amount provided by the GoUP for liquidation of coal dues of UPRVUNL, from the computation of equity on the basis of Para 4 of Preamble of 'Scheme of settlement of SEB dues' Annexure A of the report which observed that, "It is difficult to believe that SEBs can undertake reforms and simultaneously clear the overhang of past dues unless very large tariff increases are mandated beyond levels justified by current cost to cover past dues. In the circumstances, it is appropriate that **one time settlement of outstanding dues should be attempted** by shifting the burden of clearing these dues to the State Government." The Return on Equity (RoE) was considered as 14 % for the tariff period.

- (e) After due reconciliation of data submitted, since the Petitioner had not provided the details of repayment and drawal of each of the loan and other source-wise details, the Commission decided that repayment would be equal to the depreciation allowed for all generating stations except for Paricha Extn. However, for Paricha Extn, the loan repayment considered at actual, as submitted by the Petitioner, had been accepted. **The approved debt as on 31.3.2005 was ₹ 1479.84 Cr** and rate of interest on loan was considered as 12.5 % except for Parichha Extension for which actual interest rates was to be taken for calculation of interest for future.
- (f) The Commission had allowed O&M expenses according to the norms as provided under the Generation Regulations, 2004 even if it amounted to approving higher than that sought for in case of some generating stations. The excess fund so created was to be



utilized for other power stations where higher than normative O&M expenses had been incurred.

- (g) The Commission had computed the working capital requirement of UPRVUNL according to the norms specified in Regulations. The interest on working capital was considered 10.25% as on 1st April 2005 and 1st April 2006, the PLR of State Bank of India was 10.25%.
- (h) According to the regulations the tax on income was directly recoverable from the beneficiaries. The mechanism of recovery of tax was through a Tax Escrow Account to be maintained by each of the beneficiaries. This account had to be maintained in a scheduled bank and an amount equivalent to two months liability, as informed by generating company prior to commencement of financial year, had to be maintained in such account. The generating company was liable to withdraw the amount for settling the tax liability according to the procedure specified in the regulations.
- (i) The UPRVUNL's claim for recovery of fixed cost on actual availability in comparison to the target availability, as specified by the Commission under Regulations, was accepted by the Commission.
- (j) The Commission relaxed the norms for Plant Load Factor (PLF) for year 2005-06 and 2006-07 in exercise of power conferred under regulation 13 of Generation Regulations, 2004. However, the auxiliary consumption, Gross Station Heat Rate (GSHR) & oil consumption were considered as specified in the Generation Regulations, 2004.
- (k) The Commission considered fuel price (both coal and secondary oil) and GCV at an average of the last three months price submitted



by UPRVUNL in Form no. 19. However, the recovery/adjustment, for any change in fuel cost based on actual audited cost of fuel and GCV to be claimed according to the provisions set out in the regulations was allowed on month to month basis.

- (l) For billing purposes, total energy charge was allowed to be equal to the rate of energy charge multiplied by actual energy sent out but on implementation of ABT in the State, it was to be the rate of energy charge multiplied by scheduled energy sent out.
- (m) The Commission had relaxed the norms for Plant Load Factor (PLF) therefore no incentive was allowed.
- (ii) Determination of tariff and approval of ARR for year 2008-09, vide order dt. 6.3.2009 :
- (a) The tariff was determined for seven generating stations of UPRVUNL namely Anpara A, Anpara B, Harduaganj, Obra A, Obra B, Panki and Parichha and Parichha Extension with total derated capacity of 4022 MW as against installed capacity of 4544 MW.
- (b) The Commission had accepted the Gross Fixed Assets (GFA) ₹ 6706.61 Cr as on 31.3.2005 with a small correction of ₹ 0.12 Cr in earlier approved GFA which was ₹ 6706.49 Cr, total for all the power stations of UPRVUNL. GFA on 31.3.09 was approved as ₹ 8518.70 Cr. For FY 2008-09, **the Commission decided to allow true up for additional capitalization provided that the UPRVUNL would submit annual audited account within two years.**
- (c) The Commission, while determining GFA, had taken the gross block as approved on 1.4.05 and allowed additional capitalization in
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2005-06, 2006-07 & 2007-08. The additional capital expenditure incurred in year 2008-09 was to be allowed after Commissioning of assets. UPRVUNL was to file petition for allowing additional capitalization. Since, the Commission had allowed capital expenditure to be capitalized in 2005-06, 2006-07 & 2007-08, the years for which the tariff had already been determined in tariff order dt. 26.3.07, the Commission decided to follow depreciation norms as decided in tariff order dt. 26.3.07 i.e. for Obra A, Obra B, Panki & Harduaganj 3.54% and for Anpara A, Anpara B, Parichha & Parichha Extension 3.56%. It was also decided that in case of additional capital expenditure during 2008-09, depreciation shall be calculated in Form 12 of the Generation Regulations. Since UPRVUNL had not claimed any amount as Advance Against Depreciation (AAD) in its tariff petition, the Commission considered zero AAD.

- (d) Considering equity addition as zero during the financial year 2008-09, **the Commission allowed total equity of UPRVUNL as ₹ 2181.09 Cr as on 31st March 2009** which was also consistent with the values of equity approved by the Commission for UPRVUNL in its previous tariff orders. The Return on Equity (RoE) was considered as 14 % for the tariff period.
- (e) The approved debt as on 31.3.2008 was ₹ 2571.61 Cr and on 31.3.09 ₹ 2267.93 Cr. The rate of interest on loan was considered as weighted average of rate of interest on all loans.
- (f) The Commission had considered higher O&M than normative as provided under the Regulations for Obra A, Panki, Haduaganj & Parichha for the year 2008-09. In this way, the Commission had approved higher O&M to felicitate proper maintenance in view of the shortfall of funds experienced due to non-payment of dues.



Some additional O&M expenditures were also allowed to meet out the charges such as finance & bank charges, water cess, payment to pollution board, Regulatory fee and impact of Sixth Pay Commission.

- (g) The working capital requirement of UPRVUNL was approved according to the norms specified in the Regulations and the interest on working capital was considered 12.75% for FY 2008-09.
- (h) Tax on income was directly to be recoverable from the beneficiaries through a Tax Escrow Account. The generating company was liable to withdraw the amount for settling the tax liability according to the procedure specified in the regulations.
- (i) For recovery of fixed costs, the projected availability in comparison to the target availability, as specified by the Commission under Regulations, was approved by the Commission.
- (j) The PLF and specific oil consumption for year 2008-09 were considered as provided under Regulations. However, the auxiliary consumption and GSHR & were relaxed for Obra A, Obra B, Panki, Harduaganj and Parichha (only auxiliary consumption).
- (k) The fuel price was considered at an average of the last three months price. Any variation in fuel cost was allowed to be claimed based on actual audited costs on month to month basis.

**(C) Baseline data :**

To arrive at baseline data, the figures approved for previous years under different heads vide above mentioned orders, have been tabulated so that a wide and complete picture could be drawn and data gaps could be avoided. The baseline

data so arrived has been utilized for ascertaining the tariff for FY 2009-10 to 2013-14.

**Table 2.1**

**Gross Fixed Asset (GFA)**

As On	Approved GFA	Addition
14.1.2000	6271.46	-
31.3.2000	6526.88	255.42
31.3.2001	6546.36	19.48
31.3.2002	6616.86	70.5
31.3.2003	6661.73	44.87
31.3.2004	6686.78	25.05
31.3.2005	6706.61*	19.83
31.3.2006	6754.89	48.28
31.3.2007	7609.88	854.99
31.3.2008	8547.26	937.38
31.3.2009	8518.7	-28.56**

\*with allowed variation of 0.12 Cr vide tariff order dt. 6.3.09

\*\* Figure is negative due to deletion of unit

**Table 2.2**

**Equity**

As On	Approved Equity	Addition
31.3.2005	1798.54	
31.3.2006	1813.02	14.48
31.3.2007	1986.19	173.17
31.3.2008	2181.09	194.9
31.3.2009	2181.09	0.00

**Table 2.3****Debt**

As On	Approved Debt	Addition	Repayment
31.3.2005	1479.84	118.83	239.40
31.3.2006	1359.27	1401.03*	240.25
31.3.2007	2520.05	379.56	328
31.3.2008	2571.61	0.00	303.68
31.3.2009	2267.93	-	-

\*Adding debt of Parichha Extension

**Table 2.4****Depreciation**

As On	Approved Dep.	Addition
31.3.2005	3713.26	235.18
31.3.2006	3952.66	239.40
31.3.2007	4203.86	251.20
31.3.2008	4506.55	302.69
31.3.2009	4810.24	303.69

**3. METHODOLOGY FOR DETERMINATION OF TARIFF:**

Tariff in respect of the generating stations has been determined under UPERC (Terms and Conditions of Generation Tariff) Regulations, 2009. Some of the pre-requisites for a generating company to file an application for determination of tariff, as provided under Regulations, are as below:

- (1) The application shall be filed for a period of 5 years as per clause - 5 of Regulation – 2 on the basis of terms and conditions for determination of tariff approved by the Commission in a Power Purchase Agreement.



- (2) In the case of existing generating stations, the generating company shall make an application for determination of tariff as per Appendix - I of the Regulations.
- (3) In the case of generating stations under construction provisional tariff may be determined in advance based on capital expenditure actually incurred up to the date of making of the application, duly audited and certified by the statutory auditors, which shall be applicable from the date of commercial operation. On commencement of commercial operation of the plant a fresh application shall be made by the generating company as per Appendix – I for determination of the final tariff based on actual capital expenditure incurred up to the date of commencement of commercial operation of the generating station. The over or under recovery of charges on account of provisional tariff shall be subject to retrospective adjustment along with simple interest calculated at rate equal to short term Prime Lending Rate of State Bank of India prevailing as on 1st April of the relevant year.

Tariff for sale of electricity from a thermal power generating station comprise of two parts, namely,

- (i) The annual capacity (fixed) charges consisting of:
- (a) Interest on loan capital;
  - (b) Depreciation, including Advance Against Depreciation;
  - (c) Return on equity;
  - (d) Operation and maintenance expenses including insurance;
  - (e) Interest on working capital; and
  - (f) Contribution towards R&M or any compensation allowance, whichever is permitted.
- (ii) The energy (variable) charges covering fuel cost.

The baseline data has been taken from the past approvals of the Commission under tariff orders dated 26.3.07 and 6.3.09.

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**4. MULTI YEAR TARIFF PETITION FOR FY 2009-10 to 2013-14 :**

**(A) Generation Capacities of UPRVUNL :**

**(i) Existing Capacity :**

The Petitioner, Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited (UPRVUNL), is a company incorporated on 25<sup>th</sup> August, 1980 with the objective of augmentation of thermal generation in the State. Due to restructuring and unbundling of erstwhile UPSEB on 14<sup>th</sup> January, 2000, all thermal generating stations of the State belonging to UPSEB were transferred to UPRVUNL. Unchahar thermal power plant (2x210 MW) which was commissioned by UPRVUNL in February, 1992 was later transferred to NTPC.

As on date, against total installed capacity of 4544 MW, total derated capacity of UPRVUNL is 4,082 MW. Deleted units since the year 2007 are as enumerated below:

- a. Harduaganj TPS Unit No 2 (50MW) and Unit No 4 (55MW) w.e.f. 27<sup>th</sup> June 2008.
- b. Harduaganj TPS Unit No 1 (40MW) and Unit No 6 (60 MW) w.e.f. 08<sup>th</sup> February 2007.
- c. Obra 'A' TPS Unit No 3, 4 & 5 of (50MW each) w.e.f. from 16<sup>th</sup> September 2008.

Under tariff order 6.3.09 for FY 08-09, the derated capacity was 4022 MW which has increased to 4082 MW (an addition of 60MW) due to completion of refurbishment of Unit No 1 (50MW) Obra ATPS w.e.f. from 01<sup>st</sup> May 2009, earlier derated to 0 MW, and Unit No 2 (50MW) Obra ATPS w.e.f. 05<sup>th</sup> February 2009, earlier derated to 40 MW.

Accordingly the details of Installed and Derated Capacity of the generating stations of UPRVUNL are listed in table as below:

**Table 4.1**  
**Generation Capacities of the UPRVUNL**

SN	Thermal Power Station	Unit No.	Installed Capacity	Derated Capacity	Date of Commercial Operation
1	Anpara - A	1	210 MW	210 MW	01-01-87
2		2	210 MW	210 MW	01-08-87
3		3	210 MW	210 MW	01-04-89
4	Anpara - B	4	500 MW	500 MW	01-03-94
5		5	500 MW	500 MW	01-10-94
6	Obra - A	1	50 MW	50 MW	15-08-67
7		2	50 MW	50 MW	11-03-68
8		3	50 MW	Nil*	13-10-68
9		4	50 MW	Nil*	16-07-69
10		5	50 MW	Nil*	30-Jul-71
11		6	100 MW	94 MW	04-10-73
12		7	100 MW	94 MW	14-12-74
13		8	100 MW	94 MW	01-01-76
14	Obra - B	9	200 MW	200 MW	15-03-80
15		10	200 MW	200 MW	06-03-79
16		11	200 MW	200 MW	14-03-78
17		12	200 MW	200 MW	29-05-81
18		13	200 MW	200 MW	29-07-82
19	Panki	1	32 MW	Nil*	-
20		2	32 MW	Nil*	-
21		3	110 MW	105 MW	29-01-77
22		4	110 MW	105 MW	29-05-77
23	Harduaganj	1	50 MW	Nil*	21-04-68
24		2	50 MW	Nil*	23-01-69
25		3	55 MW	55 MW	Mar-72
26		4	55 MW	Nil*	18-09-72
27		5	60 MW	60 MW	14-05-77
28		6	60 MW	Nil*	26-10-77
29		7	110 MW	105 MW	Aug-78
30	Parichha	1	110 MW	110 MW	01-10-85
31		2	110 MW	110 MW	25-02-85
30	Parichha Extn.	3	210 MW	210 MW	24-11-06
31		4	210 MW	210 MW	01-12-07
	<b>Total</b>	<b>33</b>	<b>4544 MW</b>	<b>4082 MW</b>	

\* These units have been closed and excluded from Installed Capacity.

**(ii) Augmentation Plan :**

The plan for augmentation of generation capacity with the expected dates of Commissioning as submitted by UPRVUNL is as follows:

**Table 4.2  
Generation Capacity Augmentation Plan**

Name of Project	Capacity (MW)	Likely Commissioning Dates
Parichha Extn. (2x250 MW)	500 MW	U# 5 in April 2010 U# 6 in June 2010
Harduaganj Extn (2x250 MW)	500 MW	U# 5 in April 2010 U# 6 in June 2010
Anpara D (2x500 MW)	1000 MW	2011-12
Obra C (2x660 MW)	1320 MW	12th Plan
Meja (2x660 MW) (In JV with NTPC)	1320 MW	12th Plan
Anpara E (2x660 MW)	1320 MW	12th Plan
Fatehpur (In JV with Neyvile Lignite)	2000 MW	12th Plan

**(iii) Plan for Renovation and Modernization (R & M) :**

The average age of the thermal generating stations of UPRVUNL is around 27 years (excluding Parichha Extn). As the useful life of a thermal power plant is considered as 25 years, to cope up with the vintage effect, UPRVUNL has planned R&M, Refurbishment & Up-rating plans for its power stations which are under various stages of implementation.

A snapshot of the various completed / ongoing & proposed R&M / Refurbishment & Up-rating Schemes as submitted by UPRVUNL is presented below:



**Table 4.3**

**R&M / Refurbishment & Up-rating Schemes**

<b>Completed R&amp;M/ Refurbishment &amp; Up-rating Schemes :</b>					
<b>NAME OF THE SCHEME</b>	<b>NATURE OF SCHEME</b>	<b>CAPACITY</b>	<b>AGENCY</b>	<b>PROJECT COST (₹)</b>	<b>BENEFITS FROM THE SCHEME</b>
Obra A (U#1 & U#2)	Refurbishment	100 MW	M/s. Techno Prome Exports (TPE) Russia & others	189.39	- Increase in PLF - LE by 15 yrs - Increase in Gen Capacity 1x10+1x50
Obra U# 6	R & M	94 MW	BHEL	52.47	- Increase in PLF
Harduaganj U# 7 & U# 5	R & M	165 MW	BHEL	55.34	- Increase in PLF
<b>Ongoing R&amp;M/Refurbishment &amp; Up-rating Schemes :</b>					
<b>Name of the Scheme</b>	<b>Nature of Scheme</b>	<b>Capacity</b>	<b>Agency</b>	<b>Project Cost (₹)</b>	<b>Benefits from the Scheme</b>
Obra B (5x200 MW)	Refurbishment	1000 MW	BHEL	1635.00	-Increase in PLF -LE by 15 years - Increase in Gen Capacity 5x16 MW
Anpara A (3 x 210)	Refurbishment	630 MW	BHEL	787.50	-To keep PLF stable
Harduaganj U# 7	Up-rating	120 MW	BHEL	392.00	Improve PLF, LE by 15 years, Increase in Capacity by 1x10 MW
Obra A U#7 & U#8	R&M	188 MW	BHEL	178.00	-Increase in PLF
<b>Proposed R&amp;M / Refurbishment &amp; Up-rating Schemes :</b>					
<b>Name of the Scheme</b>	<b>Nature of Scheme</b>	<b>Capacity</b>	<b>Agency</b>	<b>Project Cost (₹)</b>	<b>Benefits from the Scheme</b>
Parichha U#1 & U#2	Refurbishment	220 MW	BHEL	275.00	-Increase in PLF, LE by 15 years. -Increase in PLF,



## Multi Year Tariff of UPRVUNL for FY 2009-14

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Panki U# 3 & U# 4	Up-rating	240 MW	BHEL	550.00	-LE by 15 years, Increase in capacity by 2x10 MW
Anpara B (2x500 MW)	R&M	1000 MW	BHEL	691.97	-Stabilize PLF

### **(iv) Investment Plan under Corporate Responsibility for Environment Protection (CREP) :**

UPRVUNL submitted that it has undertaken a scheme to retrofit the dust collection system of flue gas from boiler outlets for Harduaganj & Parichha TPS to meet the statutory requirements of emission norms of not more than 100 mg/Nm<sup>3</sup> SPM with a 99.8% efficiency of ESPs. Replacement of old ESPs with new ones having improved design and maximum collection efficiency is mandated under the Charter of Corporate Responsibility for Environmental Protection (CREP) as per Air (Prevention and Control of Pollution) Act, 1981 and Rules, 1981. This work has been awarded to M/s BHEL.

### **(B) ARR & Tariff submitted by UPRVUNL :**

The Multi Year Tariff (MYT) petition submitted by UPRVUNL has average of tariffs and total ARR for FY 2009-10 to 2013-14 for all the generating stations as indicated as follows:

**Table 4.4**

SN	UPRVUNL	FY 09 - 10	FY 10 - 11	FY 11 - 12	FY 12 - 13	FY 13 - 14
1	Anpara 'A'	1.54	1.61	1.68	1.87	2.12
2	Anpara 'B'	1.95	2.10	2.27	2.35	2.41
3	Obra 'A'	2.43	2.51	2.70	2.80	2.86
4	Obra 'B'	1.97	2.24	2.59	2.64	2.65
5	Panki	3.48	3.6	3.89	4.47	4.79
6	Harduaganj	4.73	5.2	5.89	5.97	5.91
7	Parichha	3.33	3.56	3.77	4.14	4.23
8	Parichha Extension	3.31	3.51	3.59	3.7	3.79
9	Harduaganj Extension	3.53	3.82	4.06	4.13	3.53
10	Parichha Extn Stage-II	3.35	3.7	3.8	3.88	3.35

**Table 4.5**

UPRVUNL	FY10	FY11	FY12	FY13	FY14
Energy Sent out (MU)	22910	23258	23896	24471	25143
Fixed Charges (₹)	0.90	1.01	1.16	1.23	1.25
Variable Charges (₹)	1.41	1.48	1.55	1.63	1.71
Total Charges (₹)	<b>2.31</b>	<b>2.49</b>	<b>2.71</b>	<b>2.86</b>	<b>2.96</b>
ARR (₹ In Cr.)	<b>5292.21</b>	<b>5791.24</b>	<b>6475.81</b>	<b>6998.70</b>	<b>7442.32</b>

## 5. TARIFF DESIGN

The tariff is structured on the following basis:

- a. The data of GFA, NFA, Debt and Equity on 31.03.09, as approved by the Commission under earlier tariff orders, has been considered as baseline data for calculation of tariff and ARR for UPRVUNL for the MYT period from FY 2009 - 10 to FY 2013 - 2014. The Accumulated Depreciation has been considered on normative basis



as derived from the approved values of GFA, NFA, Debt and Equity on 31.03.09

- b. The sum of ₹ 334.35 Cr, provided by the GoUP for liquidation of coal dues of UPRVUNL has not been taken into account for computation of equity.
- c. Return on Equity has been considered as 15.5 % as provided in the UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009.
- d. Interest on Loans has been primarily considered equal to the weighted average of interest on loans as per the Regulations. In case of any unrealistic figures of interest on loan, the weighted average of only realistic figures has been considered.
- e. Depreciation has been allowed as submitted by UPRVUNL on Form - 12 of the Regulations. However, Advance Against Depreciation (AAD) has been permitted only if the cumulative repayment up to a particular year exceeds the cumulative depreciation up to that year and has been restricted to the extent of difference between cumulative repayment and cumulative depreciation up to that year. In cases where cumulative repayment of loan for old plants is not known then repayment of loan has been considered as equal to depreciation for that particular year and therefore no AAD has been allowed. In case of approved additional capitalization AAD has been considered as per the Regulations.
- f. The petitioner has prayed to allow higher O&M expenditure in view of hike in pay due to Sixth Pay Commission with the understanding that the Commission had not considered the effect of pay revision at the time of making the Regulations. It is to elucidate here that the hike in pay due to Sixth Pay Commission



had already been declared when the Commission provided for O&M expenditure in the Regulations in the year 2008 – 2009 based on the exercise undertaken through public hearing and data available from CEA, CERC and State Power Stations etc. Hence the Commission reckons that the contention of the petitioner in this regard is incorrect as the impact of yearly pay revision has already been considered in the O&M expenditure approved under the Regulations. However, the payment of arrears due for earlier years but paid in the FY 2009 - 10 to FY 2013 - 14 shall be paid additionally as per actuals. Thus, the O&M expenditure has been allowed as per the normative values provided in the Regulations. The petitioner has submitted that the actual O&M expenditure for vintage plants like Obra - A, Harduaganj, Panki and Parichha has been higher than that approved by the Commission in earlier tariff orders. The petitioner also prayed that in the Regulations, 2009 the O&M expenditure for these plants is not sufficient to meet out the actual O&M expenditure. Therefore, keeping in view the vintage and other factors as above, the O&M expenditure for Obra - A, Harduaganj, Panki and Parichha has been considered same as that submitted in the petition. Any under or over recovery may be considered retrospectively by the Commission at the time of True-up.

- g. In case of Parichha Extension Stage-II and Harduaganj Extension generating stations for which provisional tariffs have been sought, the provisional tariff has been determined based on proposed capital expenditure subject to the condition that on completion of the project UPRVUNL shall file the details of capital expenditure actually incurred, duly audited and certified by the statutory auditors, for the consideration of the Commission. UPRVUNL shall also make a fresh application as per Appendix – I to UPERC



(Terms & Conditions of Generation Tariff) Regulations, 2009 for determination of final tariff for these generating stations. Any over or under recovery of charges by the generating company on account of provisional tariff shall be subject to retrospective adjustments on the basis of final tariff determined by the Commission under Regulation 5 of UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009.

- h. Vide Tariff Order dated March 26, 2007, the Commission, in respect to the data submitted by the Petitioner, had determined as under:

**“The Commission has accepted the data submitted on 15.02.2007, as this is found to be more consistent with the total GFA reflected in audited books of accounts of the Petitioner. This data shall be the basis for all future considerations, and it will not be subject to review, as the Petitioner has already been provided reasonable opportunities to submit reliable data for Tariff Computation.”**

Nevertheless, UPRVUNL in its petition has made some changes in the values of GFA. They have stated that these changes have taken place on the basis of report of M/s. Protocol Surveyors & Engineers Pvt. Ltd. and M/s. Vinay Krishna & Company, Chartered Accountants who have conducted a Fixed Assets Variation and Valuation exercise for them. Since the overall difference is not considerable and does not have any material effect on the overall cost of generation, the Commission has admitted the value of Fixed Assets as modified by UPRVUNL for the purpose of determination of Multi Year Tariff. The small difference of ₹0.03 Cr. in total GFA for seven old power stations of UPRVUNL are as detailed in the table below:

Table 5.1

## Difference of GFA based on Fixed Assets Variation and Valuation exercise.

(₹ in Cr..)

S N	Description	Anpara 'A'	Anpara 'B'	Obra 'A'	Obra 'B'	Panki	Hardua - ganj	Pari – chha	HQ	Total
1	GFA as on 01.04.2004	778.35	4703.32	181.34	410.27	152.28	250.04	209.81	1.37	<b>6686.78</b>
2	GFA as on 01.04.2004 (after allocation of HQ to power stations)	778.57	4703.67	181.50	410.62	152.36	250.17	209.89	0.00	<b>6686.78</b>
3	Addition during 2004-05	1.73	1.80	1.76	3.97	8.63	0.06	1.70	0.11	<b>19.76</b>
4	Allocation of HQ addition	0.02	0.03	0.01	0.02	0.01	0.01	0.01	-0.11	<b>0.00</b>
5	GFA as approved by the Commission as on 01.04.2005	<b>780.32</b>	<b>4705.50</b>	<b>183.25</b>	<b>414.59</b>	<b>160.98</b>	<b>250.24</b>	<b>211.60</b>	<b>0.00</b>	<b>6706.48</b>
6	As reported by UPRVUNL	<b>779.81</b>	<b>4707.94</b>	<b>112.83</b>	<b>483.99</b>	<b>161.17</b>	<b>249.84</b>	<b>210.87</b>		<b>6706.45</b>
7	Difference	<b>0.51</b>	<b>-2.44</b>	<b>70.42</b>	<b>-69.40</b>	<b>-0.19</b>	<b>0.40</b>	<b>0.73</b>	<b>0.00</b>	<b>0.03</b>

- i. Swapping of LIC Loans: The Petitioner has added the burden of LIC's swapped loans in the tariff which does not have sufficient ground for consideration. The depreciation on these plants has regularly been allowed by the Commission for timely payment of instalments of loans. Any non payments accruing in increase in liabilities and later swapped with other loans have not been considered for repayments. Therefore, swapping of such LIC loans can not be considered for recovery in tariff.
- j. Capitalization of R&M Schemes: The R&M Schemes for life extension and improvement of performance have been approved by the Commission by order on petitions filed by UPRVUNL from time to time. The details of such approved schemes are as under:

**Table 5.2**

S.N.	Projects	Approved R & M Costs (Rs. Cr)	Commission's Order Dated
1	Anpara-B	691.97	08.12.09
2	Obra –A	178.00	08.12.09
3	Obra-B	1635.00	07.11.06
4	Harduaganj	392.00	18.02.10

In the subject petitions, the Petitioner has also included those proposals which have not yet been submitted to the Commission for approval. The Commission does not find any reason to consider such schemes at this stage for determination of MYT as the details of proposed capitalization and audited accounts are not available. Therefore, only the schemes approved by the Commission have been considered for determination of MYT and rest of the schemes would be considered at the time of actual capitalization and on submission of petition by the Petitioner.

The capitalization of the approved R & M schemes would be allowed along with the improved operating parameters for the MYT period under consideration. UPRVUNL shall submit the details of completion of R & M works along with audited accounts to the Commission. Any over and under recovery due to early Commissioning or delay in Commissioning shall be adjusted with the retrospective effect along with the simple rate of interest calculated at rate equal to short term prime lending rate of SBI prevailing as on 1<sup>st</sup> April of the relevant year.



- k. Thus the MYT for Thermal Power Stations of U.P. Raja Vidyut Utpadan Nigam Limited (UPRVUNL) for FY 2009 – 2010 to FY 2013 – 2014 has been worked out adopting the above elaborated methodology.

**6. COMMISSION'S APPROACH FOR DETERMINATION OF MYT :**

In its Multi Year ARR and Tariff proposal, UPRVUNL has claimed Generation Tariff for ten Power Stations, namely Anpara 'A', Anpara 'B', Obra 'A', Obra 'B', Harduaganj, Panki, Parichha, Parichha Extension, Harduaganj Extension and Parichha Extension Stage-II. Out of these ten Power Stations, seven are those which were vested in UPRVUNL by the State Government after unbundling of erstwhile UPSEB on January the 15th, 2000. The seven Power Stations are Anpara 'A', Anpara 'B', Obra 'A', Obra 'B', Harduaganj, Panki and Parichha Power station. These have been taken together for determination of tariff based on earlier orders of the Commission. Parichha Extension Power Station has been considered separately as it has come into operation in the year 2006 and 2007 i.e. after the unbundling process. Tariff of Harduaganj Extension and Parichha Extension Stage-II has been decided provisionally on the basis of proposed capital expenditure submitted by UPRVUNL.

- 6.1 Accordingly, the value of the Net Fixed Assets as well as Gross Fixed Assets along with financing thereof, as per Tariff Order dated 06.03.2009 in the Petition No.553/08 filed by UPRVUNL for F.Y. 2008 - 09 for seven power stations transferred to UPRVUNL under transfer scheme, as on 31.03.09 is as under:

Table 6.1

**GFA and NFA on 31.03.2009  
as earlier approved by the Commission**

(with corrections as approved under para 5 h above)

(₹ in Cr.)

F.Y.	Anpara 'A'	Anpara 'B'	Obra 'A'	Obra 'B'	Panki	Hardua - ganj	Parichha	Total
Equity	229.32	1273.80	42.85	114.30	43.51	79.04	57.22	<b>1840.04</b>
Debts	85.08	345.27	60.96	422.82	39.44	23.81	35.01	<b>1012.39</b>
Net FA	314.40	1619.07	103.81	537.12	82.95	102.85	92.23	<b>2852.43</b>
Cum. Dep.	494.50	3104.12	108.94	-122.36	82.46	162.42	130.68	<b>3960.76</b>
G.F.A.	808.90	4723.19	212.75	414.76	165.41	265.27	222.91	<b>6813.19</b>
Corrections	0.51	-2.44	70.42	-69.40	-0.19	0.40	0.73	<b>0.03</b>
Mod. GFA	809.41	4720.75	283.17	345.36	165.22	265.67	223.64	6813.22
<b>Financing:</b>								
Equity	<b>229.32</b>	<b>1273.80</b>	<b>42.85</b>	<b>114.30</b>	<b>43.51</b>	<b>79.04</b>	<b>57.22</b>	<b>1840.04</b>
Mod. Debts	85.59	342.83	131.38	353.42	39.25	24.21	35.74	1012.42
Mod. NFA	314.91	1616.63	174.23	467.72	82.76	103.25	92.96	<b>2852.46</b>
Cum. Dep.	<b>494.50</b>	<b>3104.12</b>	<b>108.94</b>	<b>-122.36</b>	<b>82.46</b>	<b>162.42</b>	<b>130.68</b>	<b>3960.76</b>
Mod. GFA	809.41	4720.75	283.17	345.36	165.22	265.67	223.64	6813.22

From the above table it can be seen that in case of Obra-B thermal power station, when the figures of debt, equity and GFA are taken as approved by the Commission in earlier orders, the cumulative depreciation comes in negative which is unrealistic. It has happened because the value of debt might have included that amount of debt which has not actually been capitalized in the FY 2008-09. In the petition, the petitioner has claimed the GFA on 31.03.2009 as ₹ 484.60 Cr whereas, the actual modified GFA as approved by the Commission in its orders is ₹ 345.36 Cr. meaning thereby that an amount of ₹ 139.69 Cr. has been utilized for capitalization of fixed assets which has increased the amount of GFA in FY 2008-09. The accumulated depreciation as approved under the Commission's orders and also claimed by petitioner is ₹ 285.38 Cr. From these figures, the amount of debt on 31.03.2009 is construed as ₹ 154.34 Cr. The balance ₹268.64 Cr. (i.e. the difference of earlier approved debt of ₹

422.82 Cr. and now approved ₹ 154.34 Cr.) has been adjusted towards the capitalization of R&M Works during FY 2009-10 which is amounting to ₹303.50 Cr.

Therefore, the revised GFA, Equity, Debt and Accumulated depreciation as approved by the Commission are as given in the table below:

**Table 6.2**

**Revised table of GFA and NFA on 31.03.2009  
as approved by the Commission**  
(with corrections as approved under para 5 h above)

( ₹ in Cr.)

F.Y.	Anpara 'A'	Anpara 'B'	Obra 'A'	Obra 'B'	Panki	Hardua ganj	Parichha	Total
Equity	229.32	1273.80	42.85	114.30	43.51	79.04	57.22	<b>1840.04</b>
Debts	85.08	345.27	60.96	154.34	39.44	23.81	35.01	<b>743.91</b>
Net FA	314.40	1619.07	103.81	268.64	82.95	102.85	92.23	<b>2583.95</b>
Cum. Dep.	494.50	3104.12	108.94	285.38	82.46	162.42	130.68	<b>4368.50</b>
G.F.A.	<b>808.90</b>	4723.19	212.75	554.02	165.41	265.27	222.91	<b>6952.45</b>
Corrections	0.51	-2.44	70.42	-69.40	-0.19	0.40	0.73	<b>0.03</b>
Mod. GFA	809.41	4720.75	283.17	484.62	165.22	265.67	223.64	<b>6952.48</b>
<b>Financing :</b>								
Equity	<b>229.32</b>	<b>1273.80</b>	<b>42.85</b>	<b>114.30</b>	<b>43.51</b>	<b>79.04</b>	<b>57.22</b>	<b>1840.04</b>
Mod. Debts	85.59	342.83	131.38	84.94	39.25	24.21	35.74	<b>743.94</b>
Mod. NFA	314.91	1616.63	174.23	199.24	82.76	103.25	92.96	<b>2583.98</b>
Cum. Dep.	<b>494.50</b>	<b>3104.12</b>	<b>108.94</b>	<b>285.38</b>	<b>82.46</b>	<b>162.42</b>	<b>130.68</b>	<b>4368.50</b>
Mod. GFA	809.41	4720.75	283.17	484.62	165.22	265.67	223.64	<b>6952.48</b>

6.2 The value of the Net Fixed Assets as well as Gross Fixed Assets along with financing thereof, as per Tariff Order dated 06.03.2009 in the Petition No.553/08 filed by UPRVUNL for F.Y. 2008-09 for Parichha Extension Power Station, as on 31.03.09 is as under:

**Table 6.3**



**GFA and NFA on 31.03.2009  
as approved by the Commission**  
( ₹ in Cr.)

F.Y.	Parichha Extension
Equity	341.05
Debts	1234.13
Net FA	1575.18
Cum. Dep.	135.09
G.F.A.	1710.27

- 6.3 The fixation of generation tariff of Harduaganj Extension and Parichha Extension Stage-II has been decided provisionally on the basis of the value of the Gross Fixed Assets admitted by the Commission after prudence check as these Power Stations have not yet been Commissioned and put on commercial load. On Commissioning of the power stations, based on capital expenditure actually incurred, duly audited and certified by the statutory auditors, the tariff shall be decided by the Commission on a fresh application to be made by the generating company as per Appendix - I as provided under the UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009. The over or under recovery of charges on account of provisional tariff shall be subject to retrospective adjustment along with simple interest calculated at rate equal to short term Prime Lending Rate of State Bank of India prevailing as on 1st April of the relevant year.

**Table 6.4  
GFA and NFA on 31.03.2011 (FY 2010-11)  
as provisionally approved by the Commission**

( ₹ in Cr.)

F.Y. (2010-11)	Harduaganj Extension	Parichha Extension Stage-II
Equity	781.50	706.72
Debts	1729.60	1564.38
Net FA	2511.10	2271.10
Cum. Dep	93.90	84.90
G.F.A.	2605.00	2356.00



**7. APPROVED MULTI YEAR TARIFF AND ARR :**

**Generating station wise approved MYT and ARR for FY 2009 - 10 to FY 2013 - 14 shall be as detailed in following sections.**

- 7.1 - Section - 1** Anpara 'A'
- 7.2 - Section - 2** Anpara 'B'
- 7.3 - Section - 3** Obra 'A'
- 7.4 - Section - 4** Obra 'B'
- 7.5 - Section - 5** Panki
- 7.6 - Section - 6** Harduaganj
- 7.7 - Section - 7** Parichha
- 7.8 - Section - 8** Parichha Extension
- 7.9 - Section - 9** Harduaganj Extension
- 7.10 - Section -10** Parichha Extension Stage-II



## Multi Year Tariff of UPRVUNL for FY 2009-14

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**7.1**

**Section-1  
Multi Year Tariff**

**for**

**Anpara 'A'  
Thermal Power Station**

**for**

**FY 2009 - 10 to FY 2013 - 14**



## Multi Year Tariff of UPRVUNL for FY 2009-14

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### 7.1.1 ARR and MYT as according to petition :

In the petition, UPRVUNL has proposed the fixed, variable and total charges for the electricity sent out as given in the table below:

**Table 7. 1.1**

<b>Anpara A</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Energy Sent out (MU)	4040	4040	4040	4040	4040
Fixed Charges (₹)	0.57	0.60	0.61	0.75	0.95
Variable Charges (₹)	0.96	1.01	1.06	1.12	1.17
Total Charges (₹)	1.54	1.61	1.68	1.87	2.12
ARR (₹ in Cr.)	618.12	650.44	674.68	755.48	856.48

### 7.1.2 ARR and MYT as determined by the Commission :

#### 7.1.2.1 Capacity (Fixed) Charges :

##### (a) Provisions under Regulations:

For determination of components of fixed charges for MYT period of FY 2009 - 10 to FY 2013 - 14, the Commission opines that the parameters provided under UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 shall be considered. Hence, the Commission has decided to allow the components of fixed charges as below:

**Table 7.1. 2**

<b>Components of Fixed Charge</b>	<b>Value</b>	<b>Remark</b>
<b>Return on equity</b>	15.5%	As per the Regulations
<b>Interest on Loans</b>	10.91%	Weighted average of interest on loans for FY 2009-10 & FY 2010-11 as per form 13 of ARR
<b>O &amp; M Expenses</b>	Normative	As per the Regulations
<b>Compensation Allowance</b>	₹ 0.65 lacs / MW	As per the Regulations



Components of Fixed Charge	Value	Remark
<b>Advance Against Depreciation</b>	Zero	As per the Regulations
<b>Interest on working capital</b>	12.25 %	As per the Regulations

**(b) R & M of Plant :**

Anpara 'A' Power Station (3 x 210MW) is more than 21 years old. A comprehensive Refurbishment Scheme has been proposed by UPRVUNL involving an expenditure of Rs 787.50 Cr. However, UPRVUNL has neither provided the proposed Renovation and Modernization (R&M) plan nor the Detailed Project Report (DPR). It has also not provided any documents related to its financial closure as agreed upon by the Power Finance Corporation (PFC) and the State Government. As the proposal has not been submitted to the Commission for approval as yet the Commission decides not to allow the capitalization on R&M scheme for MYT period of FY 2009-10 to 2013-14 as claimed by UPRVUNL.

**(c) Gross Fixed Assets (GFA) and its Components :**

For the determination of Return on Equity, Interest on balance Loans and Depreciation it is essential to determine the value of GFA duly supported with the financing program and the value of NFA at the end of each financial year. Therefore, the GFA and NFA at the end of each financial year commencing from FY 2009-10 FY 2013-14 has been worked out along with Equity and Debts taking base figures as allowed under Commission's Tariff Order for FY 2008-09.

**Table 7.1. 3**  
**Calculation of GFA & NFA including financing**

<b>Anpara 'A' Power Station</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Op. GFA	809.41	810.01	810.01	810.01	810.01
Additions	0.60	0.00	0.00	0.00	0.00
Cl. GFA	<b>810.01</b>	<b>810.01</b>	<b>810.01</b>	<b>810.01</b>	<b>810.01</b>
Cl. Net FA	286.73	257.95	229.17	200.39	171.61
<b>Financing:</b>					
Op. Equity	229.32	229.32	229.32	229.32	229.32
Additions	0.00	0.00	0.00	0.00	0.00
Cl. Equity	<b>229.32</b>	<b>229.32</b>	<b>229.32</b>	<b>229.32</b>	<b>229.32</b>
Op. Accu Dep.	494.50	523.28	552.06	580.84	609.62
Dep. During the year	28.78	28.78	28.78	28.78	28.78
Cl. Accu. Dep.	<b>523.28</b>	<b>552.06</b>	<b>580.84</b>	<b>609.62</b>	<b>638.40</b>
Op. Debts	85.59	57.41	28.63	-0.15	-28.93
Additions	0.60	0.00	0.00	0.00	0.00
Less: Dep.	28.78	28.78	28.78	28.78	28.78
Cl. Debts	<b>57.41</b>	<b>28.63</b>	<b>-0.15</b>	<b>-28.93</b>	<b>-57.71</b>

**(d) RoE, Depreciation, O&M and Interest on Loans :**

On the basis of decisions of the Commission in the forgoing paragraphs and the details of GFA, NFA and financing as indicated above the RoE, Depreciation, O&M expenditure and Interest on Loans, at the end of each financial year of the control MYT period from FY 2009-10 to 2013-14, is worked out as under:

**Table 7.1. 4**  
**Details of RoE, Depreciation, O&M and Interest on Loans**

<b>Sl.No.</b>	<b>Particular</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
1	Return on Equity	35.54	35.54	35.54	35.54	35.54
2	Depreciation	28.78	28.78	28.78	28.78	28.78
3	A A D	0.00	0.00	0.00	0.00	0.00
4	Interest on Loans	6.26	3.12	0.00	0.00	0.00

Sl.No.	Particular	2009-10	2010-11	2011-12	2012-13	2013-14
5	O & M Expenses	114.66	121.21	128.14	135.51	143.26
6	Com. Allowance	4.10	4.10	4.10	4.10	4.10
	<b>Total:</b>	<b>189.35</b>	<b>192.76</b>	<b>196.57</b>	<b>203.94</b>	<b>211.69</b>

The amount of GFA pertaining to Anpara 'A' Power Station at the beginning of F.Y. 2009-10 was ₹ 809.41 Cr. out of which ₹ 6.60 Cr. was invested on land leaving a balance of ₹ 802.81 Cr.. The maximum Depreciation as per UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 permissible is to the extent of 90% of the value of the GFA excluding the value of land which works out to ₹ 722.53 Cr. The accumulated depreciation allowed till the end of FY 2013-14 is ₹ 638.40 Cr. which is less than ₹ 722.53 Cr. therefore, the Commission has allowed full Depreciation for FY 2009-10 to 2013-14.

The normative amount of Debt works out in the negative for FY 2011-12 onwards which implies that the UPRVUNL has received amounts for repayment of Debts more than the amount of loans. The amount of Depreciation has been allowed beyond the amount of Debts to compensate to the extent of 90% of Fixed Assets Value (excluding land). As the debts are negative in FY 2011-12 to 2013-14, no interest on loan is allowed in these years.

**(e) Interest on Working Capital:**

The amount of Working Capital and Interest on Working Capital for the control period of F.Y. 2009-10 to 2013-14 as claimed by the Petitioner and as determined by the Commission are as under:



**Table 7.1.5**  
**Annual Receivables of Anpara 'A' Power Station required for**  
**calculation of Working Capital:**

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Annual Capacity [Fixed] Charges	189.35	192.76	196.57	203.94	211.69
Cost of Fuel	440.86	462.90	486.05	510.35	535.87
Total Receivables	630.21	655.66	682.61	714.29	747.55

**Table 7.1. 5**

**Working Capital as determined by the Commission**

SN	Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
1	Cost of Coal for 1 and ½ month	50.73	53.27	55.93	58.73	61.66
2	Cost of Secondary Fuel Oil for 2 months	5.84	6.13	6.43	6.76	7.09
3	O & M for 1 month	9.56	10.10	10.68	11.29	11.94
4	Maintenance Spares @20% of O & M Exp.	22.93	24.24	25.63	27.10	28.65
5	Receivables equivalent to 2 months charges for sale of electricity	105.03	109.28	113.77	119.05	124.59
6	<b>Working Capital</b>	<b>194.09</b>	<b>203.02</b>	<b>212.44</b>	<b>222.93</b>	<b>233.94</b>
7	Rate of Interest	12.25	12.25	12.25	12.25	12.25
8	I W C	23.78	24.87	26.02	27.31	28.66

\*The Cost of fuel has been taken from Tables 7.1.9 and 7.1.10.

**Table 7.1. 6**  
**IWC during the Control Period as claimed by UPRVUNL :**

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Working Capital	188.82	198.09	207.49	225.47	247.72
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
I W C	23.13	24.27	25.42	27.62	30.35

**(f) Capacity (Fixed) Charge per unit of Generation :**

Based on above the capacity charges as claimed by UPRVUNL and as approved by the Commission are tabulated herein for the MYT period of F.Y. 2009-10 to 2013-14. Ex-bus energy sent out has been taken from Table 7.1.10.

**Table 7.1.7  
Fixed Charges as claimed by UPRVUNL and as approved by the Commission**

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	16.95	6.26	-10.69	17.24	3.12	-14.12
Depreciation	28.94	28.78	-0.16	28.94	28.78	-0.16
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	34.03	35.54	1.51	34.03	35.54	1.51
O & M Expenses	124.53	114.66	-9.87	131.82	121.21	-10.61
Compensation Allowance	4.10	4.10	0.00	4.10	4.10	0.00
Interest on Working Capital	23.13	23.78	0.65	24.27	24.87	0.60
Total :	231.68	213.12	-18.56	240.40	217.63	-22.77
Ex-bus Energy Sent Out (kwh)	4040.00	4040.00	0.00	4040.00	4040.00	0.00
<b>Fixed Cost per Unit</b>	<b>0.57</b>	<b>0.53</b>	<b>-0.05</b>	<b>0.60</b>	<b>0.54</b>	<b>-0.06</b>

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	15.42	0.00	-15.42	26.20	0.00	-26.20
Depreciation	28.94	28.78	-0.16	47.46	28.78	-18.68
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	34.03	35.54	1.51	50.30	35.54	-14.76
O & M Expenses	139.55	128.14	-11.41	147.74	135.51	-12.23
Compensation Allowance	4.10	4.10	0.00	4.10	4.10	0.00
Interest on Working Capital	25.42	26.02	0.60	27.62	27.31	-0.31
To :	247.46	222.59	-24.87	303.42	231.25	-72.17
Ex-bus Energy Sent Out (kwh)	4040.00	4040.00	0.00	4040.00	4040.00	0.00
<b>Fixed Cost per Unit</b>	<b>0.61</b>	<b>0.55</b>	<b>-0.06</b>	<b>0.75</b>	<b>0.57</b>	<b>-0.18</b>

Particulars	FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Difference (if any)
Interest on Loan	75.67	0.00	-75.67
Depreciation	57.29	28.78	-28.51
Advance against Depreciation	0.00	0.00	0.00
Return on Equity	58.44	35.54	-22.90
O & M Expenses	156.41	143.26	-13.15
Compensation Allowance	4.10	4.10	0.00
Interest on Working Capital	30.35	28.66	-1.69
Total :	382.26	240.34	-141.92
Ex-bus Energy Sent Out (kwh)	4040.00	4040.00	0.00
<b>Fixed Cost per Unit</b>	<b>0.95</b>	<b>0.59</b>	<b>-0.35</b>

### 7.1.2.2 Variable Charges:

#### (a) Weighted Average Cost and Gross Calorific Value of Coal and Oil :

UPRVUNL was advised by the Commission to provide the details of weighted average cost of coal and oil as well as the weighted average calorific values actually incurred / availed during the financial year 2009-10 which is the first year of the MYT. On the basis of details provided by UPRVUNL, the cost of coal and oil as well as calorific values has been worked out as under:

**Table 7.1.9  
Weighted Average Cost and Gross Calorific Value of Coal and Oil  
for F.Y. 2009-10.**

Month	Weighted Average of Landed Cost of Oil	Weighted Average of Gross Calorific value of Oil	Weighted Average of Landed Cost of Coal	Weighted Average of Gross Calorific value of Coal
	(₹/kl)	KCAL/Ltr.	(₹/mt)	(₹KCAL/KGI)
April' 2009	32250.39	10500.00	1091.48	3246.00
May' 2009	32250.39	10500.00	1031.61	3185.00
June' 2009	39493.66	10776.00	1113.10	3145.00
July' 2009	40004.37	10735.00	1086.21	3008.00
Aug' 2009	40004.37	10735.00	1009.86	3029.00
Sept' 2009	42315.94	10585.00	1040.86	2882.00
Oct' 2009	40428.44	10570.00	1085.45	2915.00
Nov' 2009	40428.44	10570.00	1110.56	2913.00
Dec' 2009	42161.23	10776.00	1202.38	3007.00
Jan' 2010	42161.23	10776.00	1231.55	2964.00

## Multi Year Tariff of UPRVUNL for FY 2009-14

Month	Weighted Average of Landed Cost of Oil	Weighted Average of Gross Calorific value of Oil	Weighted Average of Landed Cost of Coal	Weighted Average of Gross Calorific value of Coal
	(₹/kl)	KCAL/Ltr.	(₹/mt)	(₹KCAL/KGI)
Feb' 2010	42161.23	10776.00	1215.04	2910.00
Mar' 2010	42161.23	10776.00	1198.84	2977.00
Total:	475820.92	128075.00	13416.94	36181.00
<b>Monthly Weighted Avg.</b>	<b>39651.74</b>	<b>10672.92</b>	<b>1118.08</b>	<b>3015.08</b>

### (b) Variable charge per unit of Generation:

Based on the operation norms provided in the UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 and the Commission's decisions in foregoing paragraphs, the variable charge per unit of generation for Anpara 'A' Power Station for the MYT period of F.Y. 2009-10 to 2013-14 is as given in the following table.

**Table 7.1.10**  
**Variable charge per unit of generation for Anpara 'A' Power Station**

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Capacity	MW	630	630	630	630	630
Availability Factor	%	80	80	80	80	80
Plant Load Factor (PLF)	%	80	80	80	80	80
Gross Station Heat Rate	Kcal/kWh	2500	2500	2500	2500	2500
Auxiliary Energy Consumption	%	8.5	8.5	8.5	8.5	8.5
Gross Generation	MU	4415	4415	4415	4415	4415
Auxiliary Energy Consumption	MU	375	375	375	375	375
Ex-bus Energy Sent Out	MU	4040	4040	4040	4040	4040
Specific Oil Consumption	ml/Kwh	2	2	2	2	2
Weighted Average (GCV) of Oil	KCal/Lt.	10673	10673	10673	10673	10673
Price of Oil	₹/KL	39652	41635	43716	45902	48197
Weighted Average (GCV) of Coal	KCal/kg.	3015	3015	3015	3015	3015
Price of Coal	₹/Mt.	1118	1174	1233	1294	1359
Heat Contribution from SFO	Kcal/Kwh	21	21	21	21	21
Total Oil Consumption	KL	8830	8830	8830	8830	8830
Heat Contribution from Coal	Kcal/kWh	2479	2479	2479	2479	2479
Specific Coal Consumption	Kg/Kwh	0.82	0.82	0.82	0.82	0.82
Coal Consumption	MMT	3.630	3.630	3.630	3.630	3.630
Total Cost of Oil @ ₹	₹ in Cr.	35.01	36.76	38.60	40.53	42.56
Total Cost of Coal @ ₹	₹ in Cr.	405.85	426.14	447.45	469.82	493.31
Total Cost of Fuel (Oil & Coal)	₹ in Cr.	440.86	462.90	486.05	510.35	535.87
Rate of Energy Charges from secondary Fuel Oil Ex-bus	Paise/Kwh	8.67	9.10	9.55	10.03	10.53



## Multi Year Tariff of UPRVUNL for FY 2009-14

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Rate of Energy Charges from Coal Ex-bus	Paise/Kwh	100.46	105.48	110.75	116.29	122.11
Rate of Energy Charges Ex-bus per Kwh	Paise/Kwh	109.12	114.58	120.31	126.32	132.64

### (c) Adjustment of Rate of Energy Charge on Account of Variation in price or Heat Value of Fuels:

The above variable cost derived on the basis of provisional annual accounts report for the Financial Year 2009-10 provided by UPRVUNL shall be applicable for the financial year 2009-10 and thereafter the variable cost has been derived after allowing normal increase in the cost of fuel @ 5% per year. However, the beneficiary will make the payment of the variable cost to be derived on the basis of weighted average cost of oil as well as coal including the weighted average Gross Calorific Value of both these elements of fossil fuel to be verified by the Cost Accountant in support of the same.

**“However, UPRVUNL shall be entitled to recover / adjust any change in fuel cost according to the provisions set out in the Generation Regulations. Fuel price variation shall be claimed based on actual audited cost of fuel and GCV on month to month basis.”**

#### 7.1.2.3 Total Charges (Cost):

The total charges (costs) for Anpara ‘A’ Thermal Power Station for the MYT period of 2009-10 to 2013-14 is summarized in the table below.

**Table 7.1.11  
Cost per kWh as claimed by UPRVUNL with those as allowed by the Commission**

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	16.95	6.26	-10.69	17.24	3.12	-14.12
Depreciation	28.94	28.78	-0.16	28.94	28.78	-0.16
A A D	0.00	0.00	0.00	0.00	0.00	0.00



## Multi Year Tariff of UPRVUNL for FY 2009-14

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Return on Equity	34.03	35.54	1.51	34.03	35.54	1.51
O & M Expenses	124.53	114.66	-9.87	131.82	121.21	-10.61
Com. Allowance	4.10	4.10	0.00	4.10	4.10	0.00
I W C	23.13	23.78	0.65	24.27	24.87	0.60
Fixed Cost (₹ in Cr..)	231.68	213.12	-18.56	240.40	217.63	-22.77
F. C. per Unit (In Paise)	57	53	-5	60	54	-6
V. C.on Fuel (₹ in Cr..)	389.45	440.86	51.41	408.92	462.90	53.98
V. C. per Unit (In paise)	96	109	13	101	115	13
Total Cost (₹ In Cr..)	621.13	653.98	32.85	649.32	680.53	31.21
Ex-bus Energy Sent Out (MU)	4040.00	4040.00	0.00	4040.00	4040.00	0.00
Total Cost per Unit (In Paise)	154	162	8	161	168	8

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	15.42	0.00	-15.42	26.20	0.00	-26.20
Depreciation	28.94	28.78	-0.16	47.46	28.78	-18.68
A A D	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	34.03	35.54	1.51	50.30	35.54	-14.76
O & M Expenses	139.55	128.14	-11.41	147.74	135.51	-12.23
Com. Allowance	4.10	4.10	0.00	4.10	4.10	0.00
I W C	25.42	26.02	0.60	27.62	27.31	-0.31
Fixed Cost (₹ in Cr..)	247.46	222.59	-24.87	303.42	231.25	-72.17
F. C. per Unit (In Paise)	61	55	-6	75	57	-18
V. C.on Fuel (₹ in Cr..)	429.37	486.05	56.68	450.83	510.35	59.52
V. C. per Unit (In paise)	106	120	14	112	126	15
Total Cost (₹ In Cr..)	676.83	708.64	31.81	754.25	741.60	-12.65
Ex-bus Energy Sent Out (MU)	4040.00	4040.00	0.00	4040.00	4040.00	0.00
Total Cost per Unit (In Paise)	168	175	8	187	184	-3



## Multi Year Tariff of UPRVUNL for FY 2009-14

Particulars	FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	75.67	0.00	-75.67
Depreciation	57.29	28.78	-28.51
A A D	0.00	0.00	0.00
Return on Equity	58.44	35.54	-22.90
O & M Expenses	156.41	143.26	-13.15
Com. Allowance	4.10	4.10	0.00
I W C	30.35	28.66	-1.69
Fixed Cost (₹ in Cr..)	382.26	240.34	-141.92
F. C. per Unit (In Paise)	95	59	-35
V. C.on Fuel (₹ in Cr..)	473.38	535.87	62.49
V. C. per Unit (In paise)	117	133	15
Total Cost (₹ in Cr..)	855.64	776.21	-79.43
Ex-bus Energy Sent Out (MU)	4040.00	4040.00	0.00
Total Cost per Unit (In Paise)	212	192	-20



## Multi Year Tariff of UPRVUNL for FY 2009-14

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**7.2**

**Section - 2**

**Multi Year Tariff**

**for**

**Anpara 'B'**

**Thermal Power Station**

**for**

**FY 2009 - 10 to FY 2013 - 14**



## Multi Year Tariff of UPRVUNL for FY 2009-14

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### 7.2.1 ARR and MYT as according to petition :

In the petition, UPRVUNL has proposed the fixed, variable and total charges for the electricity sent out as given in the table below:

**Table 7.2. 1**

Anpara 'B'	2009-10	2010-11	2011-12	2012-13	2013-14
Energy Sent out (MU)	6517	6517	6517	6517	6517
Fixed Charges (₹)	0.95	1.04	1.16	1.18	1.18
Variable Charges (₹)	1.00	1.06	1.11	1.17	1.23
Total Charges (₹)	1.95	2.10	2.27	2.35	2.41
ARR (₹ in Cr.)	1270.81	1368.57	1479.35	1531.49	1570.59

### 7.2.2 ARR and MYT as determined by the Commission :

#### 7.2.2.1 Capacity (Fixed) Charges :

##### (a) Provisions under Regulations:

For determination of components of fixed charges for MYT period of FY 2009-10 to 2013-14, the Commission opines that the parameters provided under UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 shall be considered. Hence, the Commission has decided to allow the components of fixed charges as below:

**Table 7.2. 2**

Components of Fixed Charge	Value	Remark
Return on Equity	15.5%	As per the Regulations
Interest on Loans	13.28%	Weighted average of interest on loans for FY 2011-12 to FY 2013-14 as per form 13 of ARR



Components of Fixed Charge	Value	Remark
O & M Expenses	Normative	As per the Regulations
Compensation Allowance	₹ 0.65 lacs /MW	As per the Regulations
Advance Against Depreciation	Zero	As per the Regulations
Interest on working capital	12.25 %	As per the Regulations

**(b) R & M of Plant**

Anpara 'B' Power Station (2 x 500 MW) is more than 15 years old. A comprehensive Refurbishment Scheme involving expenditure of Rs 691.97 Cr. has been approved by the Commission vide order dated 08.12.09.

**(c) Gross Fixed Assets (GFA) and its Components :**

For the determination of Return on Equity, Interest on balance Loans and Depreciation it is essential to determine the value of GFA duly supported with the financing program and the value of NFA at the end of each financial year. Therefore, the GFA and NFA at the end of each financial year commencing from FY 2009-10 FY 2013-14 has been worked out along with Equity and Debts taking base figures as allowed under Commission's Tariff Order for FY 2008-09.

**Calculation of GFA & NFA including financing**

**Table 7.2. 3**

ANPARA 'B' Power Station	2009-10	2010-11	2011-12	2012-13	2013-14
Op. GFA	4720.75	4721.63	5413.60	5413.60	5413.60
Additions	0.88	691.97	0.00	0.00	0.00
Cl. GFA	<b>4721.63</b>	<b>5413.60</b>	<b>5413.60</b>	<b>5413.60</b>	<b>5413.60</b>
Cl. Net FA	<b>1448.62</b>	<b>1946.8</b>	<b>1753.01</b>	<b>1559.22</b>	<b>1365.43</b>

Multi Year Tariff of UPRVUNL for FY 2009-14

ANPARA 'B' Power Station	2009-10	2010-11	2011-12	2012-13	2013-14
<b>Financing:</b>					
Op. Equity	1273.80	1273.80	1412.80	1412.80	1412.80
Additions	0.00	139.00	0.00	0.00	0.00
Cl. Equity	<b>1273.80</b>	<b>1412.80</b>	<b>1412.80</b>	<b>1412.80</b>	<b>1412.80</b>
Op. Accu Dep.	3104.12	3273.01	3466.8	3660.59	3854.38
Dep. During the year	168.89	193.79	193.79	193.79	193.79
Cl. Accu. Dep.	<b>3273.01</b>	<b>3466.8</b>	<b>3660.59</b>	<b>3854.38</b>	<b>4048.17</b>
Op. Debts	342.83	174.82	534.00	340.21	146.42
Additions	0.88	552.97	0.00	0.00	0.00
Less: Dep.	168.89	193.79	193.79	193.79	193.79
Cl. Debts	174.82	534.00	340.21	146.42	-47.37

**(d) RoE, Depreciation, O&M and Interest on Loans:**

On the basis of decisions of the Commission in the forgoing paragraphs and the details of GFA, NFA and financing as indicated above the RoE, Depreciation, O&M expenditure and Interest on Loans, at the end of each financial year of the control MYT period from FY 2009-10 to 2013-14, is worked out as under:

**Table 7.2. 4  
Details of RoE, Depreciation, O&M and Interest on Loans**

S.N.	Particular	2009-10	2010-11	2011-12	2012-13	2013-14
1	Return on Equity	197.44	218.98	218.98	218.98	218.98
2	Depreciation	168.89	193.79	193.79	193.79	193.79
3	A. A. D.	0.00	0.00	0.00	0.00	0.00
4	Interest on Debts	23.22	70.92	45.18	19.44	0.00
5	O & M Expenses	130.00	137.40	145.30	153.60	162.40
6	Com. Allowance	2.50	3.50	3.50	3.50	3.50
	<b>Total:</b>	<b>522.05</b>	<b>624.59</b>	<b>606.75</b>	<b>589.32</b>	<b>578.67</b>

The amount of GFA pertaining to Anpara 'B' Power Station at the beginning of F.Y. 2009-10 was ₹4720.75 Cr. out of which ₹11.70 Cr. was invested on land leaving a balance of ₹4709.05 Cr.. The maximum

Depreciation as per UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 is permissible to the extent of 90% of the value of the GFA excluding the value of land which is worked out to ₹4238.14 Cr. for Anpara 'B' Power Station. The accumulated depreciation allowed till the end of FY 2013-14 is ₹ 4048.17 Cr. which is less than ₹4238.14 Cr. therefore, the Commission has allowed full Depreciation for FY 2009-10 to 2013-14.

The normative amount of Debt is worked out in negative in FY 2013-14 which implies that the UPRVUNL has received amounts for repayment of Debts more than the amount of loans. The amount of Depreciation has been allowed beyond the amount of Debts to compensate to the extent of 90% of Fixed Assets Value (excluding land). As the debts are negative in FY 2013-14, no interest on loan is allowed in this year.

**(e) Interest on Working Capital:**

The amount of Working Capital and Interest on Working Capital for the control period of F.Y. 2009-10 to 2013-14 as claimed by the Petitioner and as determined by the Commission are as under:-

**Table 7.2. 5  
Annual Receivables of Anpara 'B' Power Station required for  
calculation of Working Capital:**

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Annual Capacity [Fixed] Charges	522.05	624.59	606.75	589.32	578.67
Cost of Fuel	727.67	636.71	802.26	842.37	884.49
<b>Total Receivables</b>	<b>1249.72</b>	<b>1261.30</b>	<b>1409.01</b>	<b>1431.69</b>	<b>1463.16</b>

**Table 7.2. 6  
Working Capital as determined by the Commission**

Sl.No.	Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
1	Cost of Coal for 1 and ½ month	84.01	73.51	92.62	97.25	102.12
2	Cost of Secondary	9.26	8.10	10.21	10.72	11.26



## Multi Year Tariff of UPRVUNL for FY 2009-14

Sl.No.	Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
	Fuel Oil for 2 months					
3	Operation & Maintenance for 1 month	10.83	11.45	12.11	12.80	13.53
4	Maintenance Spares @20% O & M Exp.	26.00	27.48	29.06	30.72	32.48
5	Receivables equivalent to 2 months charges for sale of electricity	208.29	210.22	234.84	238.61	243.86
6	<b>Working Capital</b>	<b>338.39</b>	<b>330.76</b>	<b>378.84</b>	<b>390.11</b>	<b>403.25</b>
7	Rate of Interest	12.25	12.25	12.25	12.25	12.25
8	<b>I W C</b>	<b>41.45</b>	<b>40.52</b>	<b>46.41</b>	<b>47.79</b>	<b>49.40</b>

\*The Cost of fuel has been taken from Tables 7.2.9 and 7.2.10.

**Table 7.2. 7**  
**IWC during the Control Period as claimed by UPRVUNL**

Particulars	FY 10	FY 11	FY 12	FY 13	FY 14
Working Capital	336.53	358.32	383.42	399.26	413.27
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
I W C	41.23	43.89	46.97	48.91	50.63

### (f) Capacity (Fixed) Charges :

Based on above the capacity charges as claimed by UPRVUNL and as approved by the Commission are tabulated herein for the MYT period of F.Y. 2009-10 to 2013-14. Ex-bus energy sent out has been taken from Table- 7.2.10.

**Table 7.2. 8**  
**Fixed Charges as claimed by UPRVUNL and as approved by the Commission**

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	70.81	23.22	-47.59	71.51	70.92	-0.59
Depreciation	169.17	168.89	-0.28	194.08	193.79	-0.29
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	198.24	197.44	-0.80	219.69	218.98	-0.71
O & M Expenses	138.83	130.00	-8.83	146.93	137.40	-9.53
Compensation	2.50	2.50	0.00	3.50	3.50	0.00



## Multi Year Tariff of UPRVUNL for FY 2009-14

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Allowance						
Interest on Working Capital	41.23	41.45	0.22	43.89	40.52	-3.37
<b>Total :</b>	<b>620.78</b>	<b>563.50</b>	<b>-57.28</b>	<b>679.60</b>	<b>665.11</b>	<b>-14.49</b>
Ex-bus Energy Sent Out (kwh)	6517.00	6517.00	0.00	6517.00	5431.00	-1086.00
<b>Fixed Cost per Unit</b>	<b>0.95</b>	<b>0.86</b>	<b>-0.09</b>	<b>1.04</b>	<b>1.22</b>	<b>0.18</b>

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	122.38	45.18	-77.20	108.94	19.44	-89.50
Depreciation	194.08	193.79	-0.29	194.08	193.79	-0.29
Advance against Depreciation	12.46	0.00	-12.46	30.45	0.00	-30.45
Return on Equity	219.69	218.98	-0.71	219.69	218.98	-0.71
O & M Expenses	155.50	145.30	-10.20	164.58	153.60	-10.98
Compensation Allowance	3.50	3.50	0.00	3.50	3.50	0.00
Interest on Working Capital	46.97	46.41	-0.56	48.91	47.79	-1.12
<b>Total :</b>	<b>754.58</b>	<b>653.16</b>	<b>-101.42</b>	<b>770.15</b>	<b>637.11</b>	<b>-133.04</b>
Ex-bus Energy Sent Out (kwh)	6517.00	6517.00	0.00	6517.00	6517.00	0.00
<b>Fixed Cost per Unit</b>	<b>1.16</b>	<b>1.00</b>	<b>-0.16</b>	<b>1.18</b>	<b>0.98</b>	<b>-0.20</b>

Particulars	FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	98.05	0.00	-98.05
Depreciation	194.08	193.79	-0.29
Advance against Depreciation	30.45	0.00	-30.45
Return on Equity	219.69	218.98	-0.71
O & M Expenses	174.18	162.40	-11.78
Compensation Allowance	3.50	3.50	0.00
Interest on Working Capital	50.63	49.40	-1.23
<b>Total :</b>	<b>770.58</b>	<b>628.07</b>	<b>-142.51</b>
Ex-bus Energy Sent Out (kwh)	6517.00	6517.00	0.00
<b>Fixed Cost per Unit</b>	<b>1.18</b>	<b>0.96</b>	<b>-0.22</b>



### 7.2.2.2 Variable Charges:

#### (a) Weighted Average Cost and Gross Calorific Value of Coal and Oil :

The UPRVUNL was advised by the Commission to provide the details of weighted average cost of coal and oil as well as the weighted average calorific values actually incurred / availed during the financial year 2009-10 which is the first year of the MYT. On the basis of details provided by UPRVUNL, the cost of coal and oil as well as calorific values has been worked out as under:

Table 7.2. 9

#### Weighted Average Cost and Gross Calorific Value of Coal and Oil for F.Y. 2009-10.

Month	Weighted Average of Landed Cost of Oil	Weighted Average of Gross Calorific value of Oil	Weighted Average of Landed Cost of Coal	Weighted Average of Gross Calorific value of Coal
	(₹/kl)	KCAL/Ltr.	(₹/mt)	(₹KCAL/KG)
April' 2009	32250.39	10500.00	1292.45	3317.00
May' 2009	32250.39	10500.00	1292.64	3222.00
June' 2009	39493.66	10776.00	1395.06	3442.00
July' 2009	40004.37	10735.00	1222.52	2964.00
Aug' 2009	40004.37	10735.00	1239.76	3221.00
Sept' 2009	42315.94	10585.00	1346.89	3276.00
Oct' 2009	40428.44	10570.00	1415.74	3323.00
Nov' 2009	40428.44	10570.00	1208.69	3287.00
Dec' 2009	42161.23	10776.00	1300.36	3404.00
Jan' 2010	42161.23	10776.00	1273.51	3342.00
Feb' 2010	42161.23	10776.00	1237.63	3380.00
Mar' 2010	42161.23	10776.00	1328.97	3315.00
<b>Total:</b>	<b>475820.92</b>	<b>128075.00</b>	<b>15554.22</b>	<b>39493.00</b>
<b>Monthly Weighted Avg.</b>	<b>39651.74</b>	<b>10672.92</b>	<b>1296.19</b>	<b>3291.08</b>

#### (b) Variable charge per unit of Generation:

Based on the operation norms provided in the UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 and the Commission's decisions in foregoing paragraphs, the variable charge per unit of

generation for Anpara 'B' Power Station for the MYT period of F.Y. 2009-10 to 2013-14 shall be as given in the following table.

**Table 7.2. 10**  
**Variable charge per unit of generation for Anpara 'B' Power Station**

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Capacity	MW	1000	(4/10 to 11/10) 1000	1000	1000	1000
Capacity	MW		(12/10 to 3/11) 500			
Availability Factor	%	80	80	80	80	80
Plant Load Factor (PLF)	%	80	80	80	80	80
Gross Station Heat Rate	Kcal/kWh	2450	2450	2450	2450	2450
Auxiliary Energy Consumption	%	7	7	7	7	7
Gross Generation	MU	7008	5840	7008	7008	7008
Auxiliary Energy Consumption	MU	491	409	491	491	491
Ex-bus Energy Sent Out	MU	6517.44	5431.2	6517.44	6517.44	6517.44
Specific Oil Consumption	ml/Kwh	2	2	2	2	2
Weighted Average (GCV) of Oil	KCal/Lt.	10673	10673	10673	10673	10673
Price of Oil	₹/KL	39652	41635	43716	45902	48197
Weighted Average (GCV) of Coal	KCal/kg.	3291	3291	3291	3291	3291
Price of Coal	₹/Mt.	1296	1361	1429	1500	1575
Heat Contribution from SFO	Kcal/Kwh	21	21	21	21	21
Total Oil Consumption	KL	14016	11680	14016	14016	14016
Heat Contribution from Coal	Kcal/kWh	2429	2429	2429	2429	2429
Specific Coal Consumption	Kg/Kwh	0.74	0.74	0.74	0.74	0.74
Coal Consumption	MMT	5.186	4.322	5.186	5.186	5.186
Total Cost of Oil @ ₹	₹ in Cr.	55.58	48.63	61.27	64.34	67.55
Total Cost of Coal @ ₹	₹ in Cr.	672.10	588.08	740.98	778.03	816.94
Total Cost of Fuel (Oil & Coal)	₹ in Cr.	727.67	636.71	802.26	842.37	884.49
Rate of Energy Charges from secondary Fuel Oil Ex-bus	Paise/Kwh	8.53	8.95	9.40	9.87	10.37
Rate of Energy Charges from Coal Ex-bus	Paise/Kwh	103.12	108.28	113.69	119.38	125.35
Rate of Energy Charges Ex-bus per Kwh	Paise/Kwh	111.65	117.23	123.09	129.25	135.71

**(c) Adjustment of Rate of Energy Charge on Account of Variation in price or Heat Value of Fuels:**

The above variable cost derived by the Commission on the basis of the information provided by the UPRVUNL based on provisional annual accounts report for the Financial Year 2009-10 shall be applicable for the financial year 2009-10 and thereafter the variable cost have been derived after allowing normal increase in the cost of fuel @ 5% per year. However, the beneficiary will make the payment of the variable cost to be derived on the basis of weighted average cost of oil as well as coal including the weighted average Gross Calorific Value of both these elements of fossil fuel to be verified by the Practicing Cost Accountant in support of the same.

**“However, UPRVUNL shall be entitled to recover / adjust any change in fuel cost according to the provisions set out in the Generation Regulations. Fuel price variation shall be claimed based on actual audited cost of fuel and GCV on month to month basis.”**

**7.2.2.3 Total Charges (Cost):**

The overall tariff comprises two parts, Fixed and Variable. The Annual Capacity (Fixed) Charge consists of Interest on loan capital, Depreciation, ROE, O&M, IWC and Compensation Allowance and Energy (Variable) Charges consists coal and secondary oil cost per kWh of the electricity generated. The total charges (costs) as determined by the Commission for Anpara ‘B’ Thermal Power Station for the MYT period of 2009-10 to 2013-14 as against claimed by UPRVUNL are summarized in the table below.



**Table 7.2. 11**  
**Cost per kWh as claimed by UPRVUNL with those as allowed by the Commission**

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	70.81	23.22	-47.59	71.51	70.92	-0.59
Depreciation	169.17	168.89	-0.28	194.08	193.79	-0.29
A A D	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	198.24	197.44	-0.80	219.69	218.98	-0.71
O & M Expenses	138.83	130.00	-8.83	146.93	137.40	-9.53
Com. Allowance	2.50	2.50	0.00	3.50	3.50	0.00
I W C	41.23	41.45	0.22	43.89	40.52	-3.37
Fixed Cost (₹ in Cr..)	620.78	563.50	-57.28	679.60	665.11	-14.49
F. C. per Unit (In Paise)	95	86	-9	104	122	18
V. C. on Fuel (₹ in Cr..)	656.95	727.67	70.72	689.80	636.71	-53.09
V. C. per Unit (In paise)	101	112	10.85	106	117	11.39
Total Cost (₹ In Cr..)	1277.73	1291.17	13.44	1369.40	1301.82	-67.58
Ex-bus Energy Sent Out (kwh)	6517.00	6517.00	0.00	6517.00	5431.00	-1086.00
Total Cost per Unit (In Paise)	196	198	2	210	240	30

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	122.38	45.18	-77.20	108.94	19.44	-89.50
Depreciation	194.08	193.79	-0.29	194.08	193.79	-0.29
A A D	12.46	0.00	-12.46	30.45	0.00	-30.45
Return on Equity	219.69	218.98	-0.71	219.69	218.98	-0.71
O & M Expenses	155.50	145.30	-10.20	164.58	153.60	-10.98
Com. Allowance	3.50	3.50	0.00	3.50	3.50	0.00
I W C	46.97	46.41	-0.56	48.91	47.79	-1.12
Fixed Cost (₹ in Cr..)	754.58	653.16	-101.42	770.15	637.11	-133.04
F. C. per Unit (In Paise)	116	100	-16	118	98	-20
V. C. on Fuel (₹ in Cr..)	724.29	802.26	77.97	760.51	842.37	81.86
V. C. per Unit (In paise)	111	123	11.96	117	129	12.56



## Multi Year Tariff of UPRVUNL for FY 2009-14

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Total Cost (₹ In Cr..)	1478.87	1455.42	-23.45	1530.66	1479.48	-51.18
Ex-bus Energy Sent Out (kwh)	6517.00	6517.00	0.00	6517.00	6517.00	0.00
Total Cost per Unit (In Paise)	227	223	-4	235	227	-8

Particulars	FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	98.05	0.00	-98.05
Depreciation	194.08	193.79	-0.29
A A D	30.45	0.00	-30.45
Return on Equity	219.69	218.98	-0.71
O & M Expenses	174.18	162.40	-11.78
Com. Allowance	3.50	3.50	0.00
I W C	50.63	49.40	-1.23
Fixed Cost (₹ in Cr..)	770.58	628.07	-142.51
F. C. per Unit (In Paise)	118	96	-22
V. C. on Fuel (₹ in Cr..)	798.53	884.49	85.96
V. C. per Unit (In paise)	123	136	13.19
Total Cost (₹ in Cr..)	1569.11	1512.56	-56.55
Ex-bus Energy Sent Out (kwh)	6517.00	6517.00	0.00
Total Cost per Unit (In Paise)	241	232	-9





**7.3**

**Section - 3**

**Multi Year Tariff**

**for**

**Obra 'A'**

**Thermal Power Station**

**for**

**FY 2009-10 to 2013-14**



### 7.3.1 ARR and MYT as according to petition

In the petition, UPRVUNL has proposed the fixed, variable and total charges for the electricity sent out as given in the table below:

**Table 7.3. 1**

<b>Obra A</b>	2009-10	2010-11	2011-12	2012-13	2013-14
Energy Sent out (MU)	1638	1672	1735	1833	1958
Fixed Charges (₹)	0.95	0.97	1.09	1.13	1.12
Variable Charges (₹)	1.48	1.54	1.61	1.67	1.74
Total Charges (₹)	2.43	2.51	2.70	2.80	2.86
ARR (₹ In Cr.)	398.034	419.672	468.45	513.24	559.988

### 7.3.2 ARR and MYT as determined by the Commission

#### 7.3.2.1 Capacity (Fixed) Charges

##### (a) Provisions under Regulations:

For determination of components of fixed charges for MYT period of FY 2009-10 to 2013-14, the Commission opines that the parameters provided under UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 shall be considered. Hence, the Commission has decided to allow the components of fixed charges as below:

**Table 7.3. 2**

<b>Components of Fixed Charge</b>	<b>Value</b>	<b>Remark</b>
<b>Return on Equity</b>	15.5%	As per the Regulations
<b>Interest on Loans</b>	11.01%	Weighted average of interest on loans for FY 2011-12 to FY 2013-14 as per form 13 of ARR
<b>O &amp; M Expenses</b>	<u>As per petition</u>	

Components of Fixed Charge	Value	Remark
Compensation Allowance	₹ 0.65 lacs /MW	As per the Regulations
Advance Against Depreciation	Zero	As per the Regulations
Interest on working capital	12.25 %	As per the Regulations

**(b) R & M of Plant**

Obra 'A' Power Station (382 MW) is more than 35 years old for which a comprehensive Refurbishment Scheme involving expenditure of Rs 178.50 Cr.. has been approved by the Commission vide order dated 8.12.09.

**(c) Gross Fixed Assets (GFA) and its Components**

The valuation of GFA duly supported with the financing program and the value of NFA is essential to be worked out at the end of each financial year for the determination of Return on Equity, Interest on balance Loans and Depreciation. Therefore, the GFA and NFA at the end of each financial year commencing from FY 2009-10 FY 2013-14 has been worked out alongwith Equity and Debts taking base figures as allowed under Commission's Tariff Order for FY 2008-09.

**Table 7.3.3  
Calculation of GFA & NFA including financing**

OBRA 'A' Power Station	2009-10	2010-11	2011-12	2012-13	2013-14
Op. GFA	283.17	374.47	374.47	552.37	552.37
Additions	91.30	0.00	177.90	0.00	0.00
Cl. GFA	<b>374.47</b>	<b>374.47</b>	<b>552.37</b>	<b>552.37</b>	<b>552.37</b>
Cl. Net FA	<b>251.90</b>	<b>238.27</b>	<b>396.14</b>	<b>376.11</b>	<b>356.08</b>
<b>Financing:</b>					
Op. Equity	42.85	42.85	42.85	78.45	78.45

OBRA 'A' Power Station	2009-10	2010-11	2011-12	2012-13	2013-14
Additions	0.00	0.00	35.60	0.00	0.00
Cl. Equity	<b>42.85</b>	<b>42.85</b>	<b>78.45</b>	<b>78.45</b>	<b>78.45</b>
Op. Accu Dep.	108.94	122.57	136.2	156.23	176.26
Dep. During the year	13.63	13.63	20.03	20.03	20.03
Cl. Accu. Dep.	<b>122.57</b>	<b>136.2</b>	<b>156.23</b>	<b>176.26</b>	<b>196.29</b>
Op. Debts	131.38	209.05	195.42	317.69	297.66
Additions	91.30	0.00	142.30	0.00	0.00
Less: Dep.	13.63	13.63	20.03	20.03	20.03
Cl. Debts	209.05	195.42	317.69	297.66	277.63

**(d) RoE, Depreciation, O&M and Interest on Loans**

On the basis of decisions of the Commission in forgoing paragraphs and the details of GFA, NFA and financing as above, at the end of each financial year of the control MYT period from FY 2009-10 to 2013-14, RoE, Depreciation, O&M and Interest on Loans are worked out as under:

**Table 7.3. 4  
Details of RoE, Depreciation, O&M and Interest on Loans**

Sl.No.	Particular	2009-10	2010-11	2011-12	2012-13	2013-14
1	Return on Equity	6.64	6.64	12.16	12.16	12.16
2	Depreciation	13.63	13.63	20.03	20.03	20.03
3	A A D	0.00	0.00	0.00	0.00	0.00
4	Interest on Loans	23.02	21.52	34.98	32.77	30.57
5	O & M Expenses	92.61	98.32	104.38	110.83	117.68
6	Com. Allowance	2.48	2.48	2.48	2.48	2.48
	<b>Total:</b>	<b>138.38</b>	<b>142.59</b>	<b>174.03</b>	<b>178.27</b>	<b>182.92</b>

The amount of GFA pertaining to Obra 'A' Power Station at the beginning of F.Y. 2009-10 was ₹ 283.17 Cr. out of which ₹2.3 Cr. was invested in the land leaving thereby a balance of ₹280.87 Cr. The maximum Depreciation as per UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 is permissible to the extent of 90% of the value of the GFA excluding the value of land which is worked out to ₹252.78 Cr. for Obra 'A' Power Station. The accumulated depreciation

allowed till the end of FY 2013-14 is ₹196.29 Cr. which is less than ₹252.78 Cr. therefore, the Commission has allowed full Depreciation for FY 2009-10 to 2013-14.

**(e) Interest on Working Capital:**

The amount of Working Capital and Interest on Working Capital for the control period of F.Y. 2009-10 to 2013-14 as claimed by the Petitioner and as determined by the Commission are as under:-

**Table 7.3. 5  
Annual Receivables of Obra 'A' Power Station required for  
calculation of Working Capital:**

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Annual Capacity [Fixed] Charges	138.38	142.59	174.03	178.27	182.92
Cost of Fuel	262.19	249.32	235.86	336.36	361.94
<b>Total Receivables</b>	<b>400.56</b>	<b>391.91</b>	<b>409.89</b>	<b>514.63</b>	<b>544.86</b>

**Table 7.3. 6  
Working Capital as determined by the Commission**

SI.No.	Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
1	Cost of Coal for 1 and ½ month	30.14	28.77	27.41	39.42	42.59
2	Cost of Secondary Fuel Oil for 2 months	3.52	3.20	2.76	3.50	3.54
3	Operation & Maintenance for 1 month	7.72	8.19	8.70	9.24	9.81
4	Maintenance Spares @20% O & M Exp.	18.522	19.66	20.88	22.17	23.54
5	Receivables equivalent to 2 months charges for sale of electricity	66.76	65.32	68.31	85.77	90.81
6	<b>Working Capital</b>	<b>126.65</b>	<b>125.14</b>	<b>128.06</b>	<b>160.09</b>	<b>170.28</b>
7	Rate of Interest	12.25	12.25	12.25	12.25	12.25
8	<b>I W C</b>	<b>15.52</b>	<b>15.33</b>	<b>15.69</b>	<b>19.61</b>	<b>20.86</b>

\*The Cost of fuel has been taken from Tables 7.3.9 and 7.3.10.

**Table 7.3. 7  
IWC during the Control Period as claimed by UPRVUNL**

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Working Capital	132.34	140.33	153.31	167.22	182.71
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
I W C	16.21	17.19	18.78	20.48	22.38

**(f) Capacity (Fixed) Charges**

Based on above the capacity charges as claimed by UPRVUNL and as approved by the Commission are tabulated herein for the MYT period of F.Y. 2009-10 to 2013-14. Ex-bus energy sent out has been taken from Table 7.3.10.

**Table 7.3. 8  
Fixed Charges as claimed by UPRVUNL and as approved by the Commission**

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	9.52	23.02	13.50	10.51	21.52	11.01
Depreciation	12.63	13.63	1.00	12.63	13.63	1.00
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	21.68	6.64	-15.04	21.68	6.64	-15.04
O & M Expenses	92.61	92.61	0.00	98.32	98.32	0.00
Compensation Allowance	2.48	2.48	0.00	2.48	2.48	0.00
Interest on Working Capital	16.21	15.52	-0.69	17.19	15.33	-1.86
<b>Total :</b>	<b>155.13</b>	<b>153.89</b>	<b>-1.24</b>	<b>162.81</b>	<b>157.92</b>	<b>-4.89</b>
Ex-bus Energy Sent Out (kwh)	1638.00	1638.48	0.48	1672.00	1475.72	-196.28
<b>Cost per Unit</b>	<b>0.95</b>	<b>0.94</b>	<b>-0.01</b>	<b>0.97</b>	<b>1.07</b>	<b>0.10</b>

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	16.67	34.98	18.31	25.49	32.77	7.28
Depreciation	19.03	20.03	1.00	19.03	20.03	1.00
Advance against Depreciation	0.00	0.00	0.00	1.07	0.00	-1.07
Return on Equity	27.20	12.16	-15.04	27.20	12.16	-15.04
O & M Expenses	104.38	104.38	0.00	110.83	110.83	0.00
Compensation Allowance	2.48	2.48	0.00	2.48	2.48	0.00
Interest on Working Capital	18.78	15.69	-3.09	20.48	19.61	-0.87



## Multi Year Tariff of UPRVUNL for FY 2009-14

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
<b>Total :</b>	<b>188.54</b>	<b>189.72</b>	<b>1.18</b>	<b>206.58</b>	<b>197.88</b>	<b>-8.70</b>
Ex-bus Energy Sent Out (kwh)	1735.00	1323.85	-411.15	1833.00	1900.18	67.18
<b>Cost per Unit</b>	<b>1.09</b>	<b>1.43</b>	<b>0.35</b>	<b>1.13</b>	<b>1.04</b>	<b>-0.09</b>

Particulars	FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	22.69	30.57	7.88
Depreciation	19.03	20.03	1.00
Advance against Depreciation	7.83	0.00	-7.83
Return on Equity	27.20	12.16	-15.04
O & M Expenses	117.68	117.68	0.00
Compensation Allowance	2.48	2.48	0.00
Interest on Working Capital	22.38	20.86	-1.52
<b>Total :</b>	<b>219.29</b>	<b>203.78</b>	<b>-15.51</b>
Ex-bus Energy Sent Out (kwh)	1958.00	1957.11	-0.89
<b>Cost per Unit</b>	<b>1.12</b>	<b>1.04</b>	<b>-0.08</b>

### 7.3.2.2 Variable Charges:

#### (a) Weighted Average Cost and Gross Calorific Value of Coal and Oil

The UPRVUNL was advised by the Commission to provide the details of weighted average cost of coal and oil as well as the weighted average calorific values actually incurred / availed during the financial year 2009-10 which is the first year of the MYT. On the basis of details provided by UPRVUNL, the cost of coal and oil as well as calorific values has been worked out as under:

**Table 7.3. 9**  
**Weighted Average Cost and Gross Calorific Value of Coal and Oil**  
**for F.Y. 2009-10.**

Month	Weighted Average of Landed Cost of Oil	Weighted Average of Gross Calorific value of Oil	Weighted Average of Landed Cost of Coal	Weighted Average of Gross Calorific value of Coal
	(₹/kl)	KCAL/Ltr.	(₹/mt)	(₹KCAL/KG)
April' 2009	20685.09	10180.00	1428.01	3819.00
May' 2009	22735.96	10180.00	1413.80	3567.00
June' 2009	26019.96	9965.00	1357.54	3343.00
July' 2009	28166.44	9965.00	1290.35	3230.00
Aug' 2009	28995.28	10003.00	1296.05	3305.00
Sept' 2009	29744.76	10003.00	1345.38	3462.00
Oct' 2009	29797.69	10003.00	1514.99	3243.00
Nov' 2009	30209.65	10003.00	1500.49	3208.00
Dec' 2009	31474.49	10429.00	1540.01	3173.00
Jan' 2010	33977.09	10429.00	1592.99	3271.00
Feb' 2010	31117.02	10429.00	1644.53	2975.00
Mar' 2010	31117.02	10429.00	1600.83	2997.00
<b>Total:</b>	<b>344040.45</b>	<b>122018.00</b>	<b>17524.97</b>	<b>39593.00</b>
<b>Monthly Weighted Avg.</b>	<b>28670.04</b>	<b>10168.17</b>	<b>1460.41</b>	<b>3299.42</b>

**(b) Variable charge per unit of Generation:**

Based on the operation norms provided in the UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 and the Commission's decisions in foregoing paras, the variable charge per unit of generation for Obra 'A' Power Station for the MYT period of F.Y. 2009-10 to 2013-14 shall be as given in the following table.

**Table 7.3. 10**  
**Variable charge per unit of generation for Obra 'A' Power Station**

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Capacity	MW	382	4/10 to 10/10 382	4/11 to 2/12 288	382	382
Capacity	MW		11/10 to 3/11 288	3/12 382		
Average Yearly Capacity	MW	382	342	296	382	382



## Multi Year Tariff of UPRVUNL for FY 2009-14

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Availability Factor	%	60	61	63	66	70
Plant Load Factor (PLF)	%	55	56	4/11 to 6/11 58	63	65
				7/11 to 2/12 59		
				3/12 60		
Average PLF		55	56	59	63	65
Gross Station Heat Rate	Kcal/kWh	3000	2990	4/11 to 6/11 2980	2950	2940
				7/11 to 2/12 2970		
				3/12 2960		
Average Station Heat Rate		3000	2990	2972	2950	2940
Auxiliary Energy Consumption	%	11.0	10.8	10.6	10.2	10.0
Gross Energy Generation	MU	1840	1678	1530	2108	2175
Auxiliary Energy Consumption	MU	202	202	206	208	218
Ex-bus Energy Sent Out	MU	1638	1476	1324	1900	1957
Specific Oil Consumption	ml/Kwh	4.00	3.80	4/11 to 6/11 3.60	3.00	2.80
				7/11 to 2/12 3.40		
				3/12 3.20		
Average Oil Consumption	ml/Kwh	4.00	3.80	3.43	3.00	2.80
Weighted Average (GCV) of Oil	Kcal/Lt.	10168	10168	10168	10168	10168
Price of Oil	₹/KL	28670	30104	31609	33189	34849
Weighted Average (GCV) of Coal	KCal/kg.	3299	3299	3299	3299	3299
Price of Coal	₹/Mt.	1460	1533	1610	1691	1775
Heat Contribution from SFO	Kcal/Kwh	41	39	35	31	28
Total Oil Consumption	KL	7362	6375	5247	6325	6090
Heat Contribution from Coal	Kcal/kWh	2959	2951	2937	2919	2912
Specific Coal Consumption	Kg/Kwh	0.90	0.89	0.89	0.88	0.88
Coal Consumption	MMT	1.651	1.501	1.362	1.865	1.919
Total Cost of Oil @ ₹	₹ In Cr.	21.11	19.19	16.59	20.99	21.22
Total Cost of	₹ In Cr.	241.08	230.13	219.27	315.37	340.72

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Coal @ ₹						
Total Cost of Fuel (Oil & Coal)	₹ In Cr.	262.19	249.32	235.86	336.36	361.94
Rate of Energy Charges from secondary Fuel Oil Ex-bus	Paise/Kwh	12.88	13.01	12.53	11.05	10.84
Rate of Energy Charges from Coal Ex-bus	Paise/Kwh	147.14	155.94	165.63	165.97	174.09
Rate of Energy Charges Ex-bus per Kwh	Paise/Kwh	160.02	168.95	178.16	177.02	184.94

**(c) Adjustment of Rate of Energy Charge on Account of Variation in price or Heat Value of Fuels:**

The above variable cost derived by the Commission on the basis of the information provided by the UPRVUNL based on provisional annual accounts report for the Financial Year 2009-10 shall be applicable for the financial year 2009-10 and thereafter the variable cost have been derived after allowing normal increase in the cost of fuel @ 5% per year. However, the beneficiary will make the payment of the variable cost to be derived on the basis of weighted average cost of oil as well as coal including the weighted average Gross Calorific Value of both these elements of fossil foil to be verified by the Practicing Cost Accountant in support of the same.

**“However, UPRVUNL shall be entitled to recover / adjust any change in fuel cost according to the provisions set out in the Generation Regulations. Fuel price variation shall be claimed based on actual audited cost of fuel and GCV on month to month basis.”**

### 7.3.2.3 Total Charges (Cost):

The overall tariff comprises two parts, Fixed and Variable. The Annual Capacity (Fixed) Charge consists of Interest on loan capital, Depreciation, ROE, O&M, IWC and Compensation Allowance and Energy (Variable) Charges consists coal and secondary oil cost per kWh of the electricity generated. The total charges (costs) as determined by the Commission for Obra 'A' Thermal Power Station for the MYT period of 2009-10 to 2013-14 as against claimed by UPRVUNL are summarized in the table below.

**Table 7.3. 11**  
**Cost per kWh as claimed by UPRVUNL with those as allowed by the Commission**

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	9.52	23.02	13.50	10.51	21.52	11.01
Depreciation	12.63	13.63	1.00	12.63	13.63	1.00
A A D	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	21.68	6.64	-15.04	21.68	6.64	-15.04
O & M Expenses	92.61	92.61	0.00	98.32	98.32	0.00
Com. Allowance	2.48	2.48	0.00	2.48	2.48	0.00
I W C	16.21	15.52	-0.69	17.19	15.33	-1.86
Fixed Cost (Rs. in Crs.)	155.13	153.89	-1.24	162.81	157.92	-4.89
F. C. per Unit (In Paise)	95	94	-1	97	107	10
V. C. on Fuel (Rs. in Crs.)	242.67	262.19	19.52	257.96	249.32	-8.64
V. C. per Unit (In paise)	148	160	12	154	169	15
Total Cost (Rs. in Crs.)	397.80	416.08	18.28	420.77	407.24	-13.53
Ex-bus Energy Sent Out (kwh)	1638.00	1638.48	0.48	1672.00	1475.72	-196.28
Total Cost per Unit (In Paise)	243	254	11	252	276	24

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	16.67	34.98	18.31	25.49	32.77	7.28
Depreciation	19.03	20.03	1.00	19.03	20.03	1.00
A A D	0.00	0.00	0.00	1.07	0.00	-1.07
Return on Equity	27.20	12.16	-15.04	27.20	12.16	-15.04
O & M Expenses	104.38	104.38	0.00	110.83	110.83	0.00



## Multi Year Tariff of UPRVUNL for FY 2009-14

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Com. Allowance	2.48	2.48	0.00	2.48	2.48	0.00
I W C	18.78	15.69	-3.09	20.48	19.61	-0.87
Fixed Cost (Rs. in Crs.)	188.54	189.72	1.18	206.58	197.88	-8.70
F. C. per Unit (In Paise)	109	143	35	113	104	-9
V. C. on Fuel (Rs. in Crs.)	278.93	235.86	-43.07	306.25	336.36	30.11
V. C. per Unit (In paise)	161	178	17	167	177	10
Total Cost (Rs. in Crs.)	467.47	425.58	-41.89	512.83	534.25	21.42
Ex-bus Energy Sent Out (kwh)	1735.00	1323.85	-411.15	1833.00	1900.18	67.18
Total Cost per Unit (In Paise)	269	321	52	280	281	1

Particulars	FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	22.69	30.57	7.88
Depreciation	19.03	20.03	1.00
A A D	7.83	0.00	-7.83
Return on Equity	27.20	12.16	-15.04
O & M Expenses	117.68	117.68	0.00
Com. Allowance	2.48	2.48	0.00
I W C	22.38	20.86	-1.52
Fixed Cost (Rs. in Crs.)	219.29	203.78	-15.51
F. C. per Unit (In Paise)	112	104	-8
V. C. on Fuel (Rs. in Crs.)	340.67	361.94	21.27
V. C. per Unit (In paise)	174	185	11
Total Cost (Rs. in Crs.)	559.96	565.72	5.76
Ex-bus Energy Sent Out (kwh)	1958.00	1957.11	-0.89
Total Cost per Unit (In Paise)	286	289	3



## Multi Year Tariff of UPRVUNL for FY 2009-14

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**7.4**

**Section - 4**

**Multi Year Tariff**

**for**

**Obra 'B'**

**Thermal Power Station**

**for**

**FY 2009-10 to 2013-14**



## Multi Year Tariff of UPRVUNL for FY 2009-14

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### 7.4.1 ARR and MYT as according to petition

In the petition, UPRVUNL has proposed the fixed, variable and total charges for the electricity sent out as given in the table below:

**Table 7.4. 1**

Obra 'B'	2009-10	2010-11	2011-12	2012-13	2013-14
Energy Sent out (MU)	5178	5435	5784	6058	6407
Fixed Charges (₹)	0.63	0.84	1.13	1.12	1.06
Variable Charges (₹)	1.34	1.40	1.46	1.52	1.59
Total Charges (₹)	1.97	2.24	2.59	2.64	2.65
ARR (₹ in Cr.)	1020.066	1217.44	1498.056	1599.312	1697.855

### 7.4.2 ARR and MYT as determined by the Commission

#### 7.4.2.1 Capacity (Fixed) Charges

##### (a) Provisions under Regulations:

For determination of components of fixed charges for MYT period of FY 2009-10 to 2013-14, the Commission opines that the parameters provided under UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 shall be considered. Hence, the Commission has decided to allow the components of fixed charges as below:

**Table 7.4. 2**

Components of Fixed Charge	Value	Remark
Return on equity	15.5%	As per the Regulations
Interest on Loans	11.46%	Weighted average of interest on loans for FY 2011-12 to FY 2013-14 as per form 13 of ARR
O & M Expenses	Normative	As per the Regulations

Components of Fixed Charge	Value	Remark
Compensation Allowance	₹ 0.65 lacs /MW	As per the Regulations
Advance Against Depreciation	Zero	As per the Regulations
Interest on working capital	12.25 %	As per the Regulations

**(b) R & M of Plant**

Obra 'B' Power Station (5 x 200 MW) is more than 28 years old for which a comprehensive Refurbishment Scheme involving expenditure of Rs 1635.00 Cr.. has been approved by the Commission vide order dated 7.11.06.

**(c) Gross Fixed Assets (GFA) and its Components**

The valuation of GFA duly supported with the financing program and the value of NFA is essential to be worked out at the end of each financial year for the determination of Return on Equity, Interest on balance Loans and Depreciation. Therefore, the GFA and NFA at the end of each financial year commencing from FY 2009-10 FY 2013-14 has been worked out alongwith Equity and Debts taking base figures as allowed under Commission's Tariff Order for FY 2008-09.

**Table 7.4. 3  
Calculation of GFA & NFA including financing**

OBRA 'B' Power Station	2009-10	2010-11	2011-12	2012-13	2013-14
Op. GFA	484.62	788.12	1423.42	2120.72	2120.72
Additions	303.50	635.30	697.30	0.00	0.00
Cl. GFA	<b>788.12</b>	<b>1423.42</b>	<b>2120.72</b>	<b>2120.72</b>	<b>2120.72</b>
Cl. Net FA	<b>474.54</b>	<b>1058.84</b>	<b>1680.04</b>	<b>1603.94</b>	<b>1527.84</b>
<b>Financing:</b>					
Op. Equity	114.30	179.70	310.50	441.30	441.30

OBRA 'B' Power Station	2009-10	2010-11	2011-12	2012-13	2013-14
Additions	65.40	130.80	130.80	0.00	0.00
<b>Cl. Equity</b>	<b>179.70</b>	<b>310.50</b>	<b>441.30</b>	<b>441.30</b>	<b>441.30</b>
Op. Accu Dep.	285.38	313.58	364.58	440.68	516.78
Dep. During the year	28.20	51.00	76.10	76.10	76.10
<b>Cl. Accu. Dep.</b>	<b>313.58</b>	<b>364.58</b>	<b>440.68</b>	<b>516.78</b>	<b>592.88</b>
Op. Debts	84.94	294.84	748.34	1238.74	1162.64
Additions	238.10	504.50	566.50	0.00	0.00
Less: Dep.	28.20	51.00	76.10	76.10	76.10
<b>Cl. Debts</b>	<b>294.84</b>	<b>748.34</b>	<b>1238.74</b>	<b>1162.64</b>	<b>1086.54</b>

**(d) RoE, Depreciation, O&M and Interest on Loans**

On the basis of decisions of the Commission in forgoing paragraphs and the details of GFA, NFA and financing as above, at the end of each financial year of the control MYT period from FY 2009-10 to 2013-14, RoE, Depreciation, O&M and Interest on Loans are worked out as under:

**Table 7.4. 4  
Details of RoE, Depreciation, O&M and Interest on Loans**

Sl.No.	Particular	2009-10	2010-11	2011-12	2012-13	2013-14
1	Return on Equity	27.85	48.13	68.40	68.40	68.40
2	Depreciation	28.20	51.00	76.10	76.10	76.10
3	AAD	0.00	29.55	87.63	71.94	71.94
4	Interest on Debts	33.79	85.76	141.96	133.24	124.52
5	O & M Expenses	182.00	195.48	209.91	225.42	241.95
6	Com. Allowance	6.60	6.81	7.02	7.02	7.02
	<b>Total:</b>	<b>278.44</b>	<b>416.73</b>	<b>591.02</b>	<b>582.12</b>	<b>589.93</b>

The amount of GFA pertaining to Obra 'B' Power Station at the beginning of F.Y. 2009-10 was ₹484.62 Cr. out of which ₹4.3 Cr. was invested in the land leaving thereby a balance of ₹480.32 Cr.. The maximum Depreciation as per UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 is permissible to the extent of 90% of the value of the GFA excluding the value of land which is worked out to ₹432.29 Cr. for Obra 'B' Power Station. The accumulated depreciation allowed till the end of FY 2013-14

is ₹144.64 Cr. which is less than ₹306.95 Cr. therefore, the Commission has allowed full Depreciation for FY 2009-10 to 2013-14.

**(e) Interest on Working Capital:**

The amount of Working Capital and Interest on Working Capital for the control period of F.Y. 2009-10 to 2013-14 as claimed by the Petitioner and as determined by the Commission are as under:-

**Table 7.4. 5**  
**Annual Receivables of Obra 'B' Power Station required for calculation of Working Capital:**

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Annual Capacity [Fixed] Charges	278.44	416.73	591.02	582.12	589.93
Cost of Fuel	753.74	824.65	914.57	997.48	1100.66
<b>Total Receivables</b>	<b>1032.19</b>	<b>1241.37</b>	<b>1505.59</b>	<b>1579.60</b>	<b>1690.59</b>

**Table 7.4. 6**  
**Working Capital as determined by the Commission**

Sl.No.	Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
1	Cost of Coal for 1 and ½ month	89.06	97.64	108.50	118.58	131.12
2	Cost of Secondary Fuel Oil for 2 months	6.88	7.26	7.76	8.13	8.61
3	Operation & Maintenance for 1 month	15.17	16.29	17.49	18.79	20.16
4	Maintenance Spares @20% O & M Exp.	36.40	39.10	41.98	45.08	48.39
5	Receivables equivalent to 2 months charges for sale of electricity	172.03	206.90	250.93	263.27	281.77
6	<b>Working Capital</b>	<b>319.53</b>	<b>367.18</b>	<b>426.67</b>	<b>453.86</b>	<b>490.06</b>
7	Rate of Interest	12.25	12.25	12.25	12.25	12.25
8	I W C	39.14	44.98	52.27	55.60	60.03

\*The Cost of fuel has been taken from Tables 7.4.9 and 7.4.10.

**Table 7.4. 7**  
**IWC during the Control Period as claimed by UPRVUNL**

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Working Capital	341.75	391.08	456.69	490.79	526.61
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
I W C	41.86	47.91	55.94	60.12	64.51

**(f) Capacity (Fixed) Charges**

Based on above the capacity charges as claimed by UPRVUNL and as approved by the Commission are tabulated herein for the MYT period of F.Y. 2009-10 to 2013-14. Ex-bus energy sent out has been taken from Table 7.4.10.

**Table 7.4. 8**  
**Fixed Charges as claimed by UPRVUNL and as approved by the Commission**

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	14.13	33.79	19.66	51.36	85.76	34.40
Depreciation	28.17	28.20	0.03	51.04	51.00	-0.04
Advance against Depreciation	0.00	0.00	0.00	29.55	29.55	0.00
Return on Equity	29.49	27.85	-1.64	49.77	48.13	-1.64
O & M Expenses	203.35	182.00	-21.35	221.46	195.48	-25.98
Compensation Allowance	6.60	6.60	0.00	6.81	6.81	0.00
Interest on Working Capital	41.86	39.14	-2.72	47.91	44.98	-2.93
Total :	323.60	317.59	-6.01	457.90	461.70	3.80
Ex-bus Energy Sent Out (kwh)	5178.00	5178.00	0.00	5435.00	5435.00	0.00
Fixed Cost per Unit	0.62	0.61	-0.01	0.84	0.85	0.01

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	114.59	141.96	27.37	139.25	133.24	-6.01
Depreciation	76.14	76.10	-0.04	76.14	76.10	-0.04
Advance against Depreciation	87.63	87.63	0.00	71.94	71.94	0.00
Return on Equity	70.04	68.40	-1.64	70.04	68.40	-1.64
O & M Expenses	240.99	209.91	-31.08	255.16	225.42	-29.74
Compensation	7.02	7.02	0.00	7.02	7.02	0.00



## Multi Year Tariff of UPRVUNL for FY 2009-14

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Allowance						
Interest on Working Capital	55.94	52.27	-3.67	60.12	55.60	-4.52
Total :	652.35	643.29	-9.06	679.67	637.72	-41.95
Ex-bus Energy Sent Out (kwh)	5783.00	5783.00	0.00	6052.00	6052.00	0.00
Fixed Cost per Unit	1.13	1.11	-0.02	1.12	1.05	-0.07

Particulars	FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	118.71	124.52	5.81
Depreciation	76.14	76.10	-0.04
Advance against Depreciation	71.94	71.94	0.00
Return on Equity	70.04	68.40	-1.64
O & M Expenses	270.16	241.95	-28.21
Compensation Allowance	7.02	7.02	0.00
Interest on Working Capital	64.51	60.03	-4.48
Total :	678.52	649.96	-28.56
Ex-bus Energy Sent Out (kwh)	6408.00	6408.00	0.00
Fixed Cost per Unit	1.06	1.01	-0.04

### 7.4.2.2 Variable Charges:

#### (a) Weighted Average Cost and Gross Calorific Value of Coal and Oil

The UPRVUNL was advised by the Commission to provide the details of weighted average cost of coal and oil as well as the weighted average calorific values actually incurred / availed during the financial year 2009-10 which is the first year of the MYT. On the basis of details provided by UPRVUNL, the cost of coal and oil as well as calorific values has been worked out as under:

**Table 7.4. 9**  
**Weighted Average Cost and Gross Calorific Value of Coal and Oil**  
**for F.Y. 2009-10**

Month	Weighted Average of Landed Cost of Oil	Weighted Average of Gross Calorific value of Oil	Weighted Average of Landed Cost of Coal	Weighted Average of Gross Calorific value of Coal
	(₹/kl)	KCAL/Ltr.	(₹/mt)	(₹KCAL/KG)
April' 2009	20685.09	10180.00	1412.31	3687.00
May' 2009	22735.96	10180.00	1418.24	3786.00
June' 2009	25474.16	9965.00	1268.90	3559.00
July' 2009	28166.44	9965.00	1303.59	3261.00
Aug' 2009	28933.08	10003.00	1210.82	3339.00
Sept' 2009	30585.64	10003.00	1227.77	3345.00
Oct' 2009	29797.69	10003.00	1490.05	3029.00
Nov' 2009	30254.68	10003.00	1443.10	3304.00
Dec' 2009	31583.17	10429.00	1535.88	2818.00
Jan' 2010	31880.37	10429.00	1482.69	3040.00
Feb' 2010	31117.02	10429.00	1495.39	2984.00
Mar' 2010	31117.02	10429.00	1467.15	2962.00
<b>Total:</b>	<b>342330.32</b>	<b>122018.00</b>	<b>16755.89</b>	<b>39114.00</b>
<b>Monthly Weighted Avg.</b>	<b>28527.53</b>	<b>10168.17</b>	<b>1396.32</b>	<b>3259.50</b>

**(b) Variable charge per unit of Generation:**

Based on the operation norms provided in the UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 and the Commission's decisions in foregoing paras, the variable charge per unit of generation for Obra 'B' Power Station for the MYT period of F.Y. 2009-10 to 2013-14 shall be as given in the following table.

**Table 7.4. 10**  
**Variable charge per unit of generation for Obra 'B' Power Station**

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Capacity	MW	4/9 to 11/9 800	4/10 to 6/10 816	4/11 to 8/11 848	1080	1080
Capacity		12/9 to 3/10 816	7/10 to 1/11 832	9/11 to 3/12 864		
Capacity			2/11 to 3/11 848			
Average Capacity	MW	805	831	857	1080	1080
Target	%	70	71	73	76	80



## Multi Year Tariff of UPRVUNL for FY 2009-14

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Availability						
Plant Load Factor (PLF)	%	65	66	68	71	75
Gross Station Heat Rate	Kcal/kWh	2900	2890	2880	2870	2860
Auxiliary Energy Consumption	%	10.5	10.3	10.1	9.9	9.7
Gross Energy Generation	MU	5785	6059	6433	6717	7096
Auxiliary Energy Consumption	MU	607	624	650	665	688
Ex-bus Energy Sent Out	MU	5178	5435	5783	6052	6408
Specific Oil Consumption	ml/Kwh	2.50	2.40	2.30	2.20	2.10
Weighted Average (GCV) of Oil	KCal/Lt.	10168	10168	10168	10168	10168
Price of Oil	₹/KL	28528	29954	31452	33024	34675
Weighted Average (GCV) of Coal	KCal/kg.	3260	3260	3260	3260	3260
Price of Coal	₹/Mt.	1396	1466	1539	1616	1697
Heat Contribution from SFO	Kcal/Kwh	25	24	23	22	21
Total Oil Consumption	KL	14463	14542	14796	14777	14902
Heat Contribution from Coal	Kcal/kWh	2875	2866	2857	2848	2839
Specific Coal Consumption	Kg/Kwh	0.88	0.88	0.88	0.87	0.87
Coal Consumption	MMT	5.103	5.328	5.639	5.869	6.181
Total Cost of Oil @ ₹	₹ in Cr.	41.26	43.56	46.54	48.80	51.67
Total Cost of Coal @ ₹	₹ in Cr.	712.49	781.09	868.04	948.68	1048.99
Total Cost of Fuel (Oil & Coal)	₹ in Cr.	753.74	824.65	914.57	997.48	1100.66
Rate of Energy Charges from secondary Fuel Oil Ex-bus	Paise/Kwh	7.97	8.01	8.05	8.06	8.06
Rate of Energy Charges from Coal Ex-bus	Paise/Kwh	137.60	143.72	150.10	156.75	163.70
Rate of Energy Charges Ex-bus per Kwh	Paise/Kwh	145.57	151.73	158.15	164.82	171.76

### (c) Adjustment of Rate of Energy Charge on Account of Variation in price or Heat Value of Fuels:

The above variable cost derived by the Commission on the basis of the information provided by the UPRVUNL based on provisional annual

accounts report for the Financial Year 2009-10 shall be applicable for the financial year 2009-10 and thereafter the variable cost have been derived after allowing normal increase in the cost of fuel @ 5% per year. However, the beneficiary will make the payment of the variable cost to be derived on the basis of weighted average cost of oil as well as coal including the weighted average Gross Calorific Value of both these elements of fossil fuel to be verified by the Practising Cost Accountant in support of the same.

**“However, UPRVUNL shall be entitled to recover / adjust any change in fuel cost according to the provisions set out in the Generation Regulations. Fuel price variation shall be claimed based on actual audited cost of fuel and GCV on month to month basis.”**

#### 7.4.2.3 Total Charges (Cost):

The overall tariff comprises two parts, Fixed and Variable. The Annual Capacity (Fixed) Charge consists of Interest on loan capital, Depreciation, ROE, O&M, IWC and Compensation Allowance and Energy (Variable) Charges consists coal and secondary oil cost per kWh of the electricity generated. The total charges (costs) as determined by the Commission for Obra ‘B’ Thermal Power Station for the MYT period of 2009-10 to 2013-14 as against claimed by UPRVUNL are summarized in the table below.

**Table 7.4. 11  
Cost per kWh as claimed by UPRVUNL with those as allowed  
by the Commission**

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	14.13	33.79	19.66	51.36	85.76	34.40
Depreciation	28.17	28.20	0.03	51.04	51.00	-0.04
A A D	0.00	0.00	0.00	29.55	29.55	0.00
Return on	29.49	27.85	-1.64	49.77	48.13	-1.64



## Multi Year Tariff of UPRVUNL for FY 2009-14

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Equity						
O & M Expenses	203.35	182.00	-21.35	221.46	195.48	-25.98
Com. Allowance	6.60	6.60	0.00	6.81	6.81	0.00
I W C	41.86	39.14	-2.72	47.91	44.98	-2.93
Fixed Cost (₹ in Cr..)	323.60	317.59	-6.01	457.90	461.70	3.80
F. C. per Unit (In Paise)	62	61	-1	84	85	1
V. C. on Fuel (₹ in Cr..)	694.38	753.74	59.36	760.03	824.65	64.62
V. C. per Unit (In paise)	134	146	11	140	152	12
Total Cost (₹ in Cr..)	1017.98	1071.33	53.35	1217.93	1286.35	68.42
Ex-bus Energy Sent Out (kwh)	5178.00	5178.00	0.00	5435.00	5435.00	0.00
Total Cost per Unit (In Paise)	197	207	10	224	237	13

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	114.59	141.96	27.37	139.25	133.24	-6.01
Depreciation	76.14	76.10	-0.04	76.14	76.10	-0.04
A A D	87.63	87.63	0.00	71.94	71.94	0.00
Return on Equity	70.04	68.40	-1.64	70.04	68.40	-1.64
O & M Expenses	240.99	209.91	-31.08	255.16	225.42	-29.74
Com. Allowance	7.02	7.02	0.00	7.02	7.02	0.00
I W C	55.94	52.27	-3.67	60.12	55.60	-4.52
Fixed Cost (₹ in Cr..)	652.35	643.29	-9.06	679.67	637.72	-41.95
F. C. per Unit (In Paise)	113	111	-2	112	105	-7
V. C. on Fuel (₹ in Cr..)	843.29	914.57	71.28	920.11	997.48	77.37
V. C. per Unit (In paise)	146	158	12	152	165	13
Total Cost (₹ in Cr..)	1495.64	1557.86	62.22	1599.78	1635.20	35.42
Ex-bus Energy Sent Out (kwh)	5783.00	5783.00	0.00	6052.00	6052.00	0.00



## Multi Year Tariff of UPRVUNL for FY 2009-14

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Total Cost per Unit (In Paise)	259	269	11	264	270	6

Particulars	FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	118.71	124.52	5.81
Depreciation	76.14	76.10	-0.04
A A D	71.94	71.94	0.00
Return on Equity	70.04	68.40	-1.64
O & M Expenses	270.16	241.95	-28.21
Com. Allowance	7.02	7.02	0.00
I W C	64.51	60.03	-4.48
Fixed Cost (₹ in Cr..)	678.52	649.96	-28.56
F. C. per Unit (In Paise)	106	101	-4
V. C. on Fuel (₹ in Cr..)	1015.65	1100.66	85.01
V. C. per Unit (In paise)	158	172	13
Total Cost (₹ in Cr..)	1694.17	1750.63	56.46
Ex-bus Energy Sent Out (kwh)	6408.00	6408.00	0.00
Total Cost per Unit (In Paise)	264	273	9



## Multi Year Tariff of UPRVUNL for FY 2009-14

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**7.5**

**Section - 5**

**Multi Year Tariff**

**for**

**Panki**

**Thermal Power Station**

**for**

**FY 2009-10 to 2013-14**



## Multi Year Tariff of UPRVUNL for FY 2009-14

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### 7.5.1 ARR and MYT as according to petition

In the petition, UPRVUNL has proposed the fixed, variable and total charges for the electricity sent out as given in the table below:

**Table 7.5. 1**

<b>Panki</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Energy Sent out (MU)	982	1001	1092	1189	1233
Fixed Charges (₹)	1.13	1.16	1.36	1.86	2.09
Variable Charges (₹)	2.35	2.44	2.53	2.61	2.7
Total Charges (₹)	3.48	3.6	3.89	4.47	4.79
ARR (₹ In Cr.)	341.73	360.36	424.78	531.48	590.60

### 7.5.2 ARR and MYT as determined by the Commission

#### 7.5.2.1 Capacity (Fixed) Charges

##### (a) Provisions under Regulations:

For determination of components of fixed charges for MYT period of FY 2009-10 to 2013-14, the Commission opines that the parameters provided under UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 shall be considered. Hence, the Commission has decided to allow the components of fixed charges as below:

**Table 7.5. 2**

<b>Components of Fixed Charge</b>	<b>Value</b>	<b>Remark</b>
<b>Return on equity</b>	15.5%	As per the Regulations
<b>Interest on Loans</b>	11.55%	Weighted average of interest on loans for FY 2012-13 to FY 2013-14 as per form 13 of ARR
<b>O &amp; M Expenses</b>	<u>As per petition</u>	
<b>Compensation Allowance</b>	₹ 0.65 lacs /MW	As per the Regulations
<b>Advance Against Depreciation</b>	Zero	As per the Regulations
<b>Interest on working capital</b>	12.25 %	As per the Regulations



### (b) R & M of Plant

Panki Power Station (2 x 105 MW) is more than 33 years old for which a comprehensive Refurbishment Scheme has been proposed by UPRVUNL involving expenditure of Rs 550.00 Cr.. In support of the proposed Renovation and Modernization (R&M) plan neither any Detailed Project Report (DPR) nor its financial closure as agreed upon by the Power Finance Corporation (PFC) and the State Government has been provided by UPRVUNL. The proposal has not been submitted to the Commission for approval as yet. Therefore, the Commission decides not to allow the capitalization on R&M scheme for MYT period of FY 2009-10 to 2013-14 as claimed by UPRVUNL.

### (c) Gross Fixed Assets (GFA) and its Components

The valuation of GFA duly supported with the financing program and the value of NFA is essential to be worked out at the end of each financial year for the determination of Return on Equity, Interest on balance Loans and Depreciation. Therefore, the GFA and NFA at the end of each financial year commencing from FY 2009-10 FY 2013-14 has been worked out alongwith Equity and Debts taking base figures as allowed under Commission's Tariff Order for FY 2008-09.

**Table 7.5. 3**  
**Calculation of GFA & NFA including financing**

<b>PANKI Power Station</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Op. GFA	165.22	165.82	165.82	165.82	165.82
Additions	0.60	0.00	0.00	0.00	0.00
Cl. GFA	<b>165.82</b>	<b>165.82</b>	<b>165.82</b>	<b>165.82</b>	<b>165.82</b>
Cl. Net FA	<b>77.48</b>	<b>71.6</b>	<b>65.72</b>	<b>59.84</b>	<b>53.96</b>
<b>Financing:</b>					
Op. Equity	43.51	43.51	43.51	43.51	43.51
Additions	0.00	0.00	0.00	0.00	0.00

<b>PANKI Power Station</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Cl. Equity	<b>43.51</b>	<b>43.51</b>	<b>43.51</b>	<b>43.51</b>	<b>43.51</b>
Op. Accu Dep.	82.46	88.34	94.22	100.1	105.98
Dep. During the year	5.88	5.88	5.88	5.88	5.88
Cl. Accu. Dep.	<b>88.34</b>	<b>94.22</b>	<b>100.10</b>	<b>105.98</b>	<b>111.86</b>
Op. Debts	39.25	33.97	28.09	22.21	16.33
Additions	0.60	0.00	0.00	0.00	0.00
Less: Dep.	5.88	5.88	5.88	5.88	5.88
Cl. Debts	33.97	28.09	22.21	16.33	10.45

**(d) RoE, Depreciation, O&M and Interest on Loans**

On the basis of decisions of the Commission in forgoing paragraphs and the details of GFA, NFA and financing as above, at the end of each financial year of the control MYT period from FY 2009-10 to 2013-14, RoE, Depreciation, O&M and Interest on Loans are worked out as under:

**Table 7.5. 4  
Details of RoE, Depreciation, O&M and Interest on Loans**

<b>Sl.No.</b>	<b>Particular</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
1	Return on Equity	6.74	6.74	6.74	6.74	6.74
2	Depreciation	5.88	5.88	5.88	5.88	5.88
3	A A D	0.00	0.00	0.00	0.00	0.00
4	Interest on Loan	3.92	3.24	2.57	1.89	1.21
5	O & M Expenses	79.55	84.33	94.73	106.06	112.40
6	Com. Allowance	1.37	1.37	1.37	1.37	1.37
	<b>Total:</b>	<b>97.47</b>	<b>101.57</b>	<b>111.29</b>	<b>121.94</b>	<b>127.60</b>

The amount of GFA pertaining to Panki Power Station at the beginning of F.Y. 2009-10 was ₹165.22 Cr. out of which ₹1.6 Cr. was invested in the land leaving thereby a balance of ₹163.62 Cr.. The maximum Depreciation as per UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 is permissible to the extent of 90% of the value of the GFA excluding the value of land which is worked out to ₹147.26 Cr. for Panki Power Station. The accumulated depreciation allowed till the end of FY 2013-14 is ₹111.86 Cr. which is less than ₹147.26 Cr. therefore, the Commission has allowed full Depreciation for FY 2009-10 to 2013-14.

**(e) Interest on Working Capital:**

The amount of Working Capital and Interest on Working Capital for the control period of F.Y. 2009-10 to 2013-14 as claimed by the Petitioner and as determined by the Commission are as under:-

**Table 7.5. 5  
Annual Receivables of Panki Power Station required for  
calculation of Working Capital:**

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Annual Capacity [Fixed] Charges	97.47	101.57	111.29	121.94	127.60
Cost of Fuel	277.91	293.48	309.81	326.92	350.23
<b>Total Receivables</b>	<b>375.37</b>	<b>395.05</b>	<b>421.10</b>	<b>448.86</b>	<b>477.84</b>

**Table 7.5. 6  
Working Capital as determined by the Commission**

Sl.No.	Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
1	Cost of Coal for 1 and ½ month	33.26	35.17	37.17	39.28	42.14
2	Cost of Secondary Fuel Oil for 2 months	1.98	2.03	2.07	2.12	2.19
3	Operation & Maintenance for 1 month	6.63	7.03	7.89	8.84	9.37
4	Maintenance Spares @20% O & M Exp.	15.91	16.87	18.95	21.21	22.48
5	Receivables equivalent to 2 months charges for sale of electricity	62.56	65.84	70.18	74.81	79.64
6	<b>Working Capital</b>	<b>120.33</b>	<b>126.93</b>	<b>136.27</b>	<b>146.25</b>	<b>155.81</b>
7	Rate of Interest	12.25	12.25	12.25	12.25	12.25
8	<b>I W C</b>	<b>14.74</b>	<b>15.55</b>	<b>16.69</b>	<b>17.92</b>	<b>19.09</b>

\*The Cost of fuel has been taken from Tables 7.5.9 and 7.5.10.

**Table 7.5. 7  
IWC during the Control Period as claimed by UPRVUNL**

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Working Capital	117.74	124.26	143.25	170.08	185.28
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
I W C	14.42	15.22	17.55	20.83	22.70

**(f) Capacity (Fixed) Charges**

Based on above the capacity charges as claimed by UPRVUNL and as approved by the Commission are tabulated herein for the MYT period of F.Y. 2009-10 to 2013-14. Ex-bus energy sent out has been taken from Table 7.5.10.

**Table 7.5. 8**  
**Fixed Charges as claimed by UPRVUNL and as approved by the Commission**

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	3.37	3.92	0.55	2.94	3.24	0.30
Depreciation	6.25	5.88	-0.37	6.25	5.88	-0.37
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	6.01	6.74	0.73	6.01	6.74	0.73
O & M Expenses	79.55	79.55	0.00	84.33	84.33	0.00
Compensation Allowance	1.37	1.37	0.00	1.37	1.37	0.00
Interest on Working Capital	14.42	14.74	0.32	15.22	15.55	0.33
Total :	110.97	112.21	1.24	116.12	117.12	1.00
Ex-bus Energy Sent Out (kwh)	982.00	982.76	0.76	1001.00	1001.16	0.16
Cost per Unit	1.13	1.14	0.01	1.16	1.17	0.01

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	4.29	2.57	-1.72	43.45	1.89	-41.56
Depreciation	15.94	5.88	-10.06	26.05	5.88	-20.17
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	14.54	6.74	-7.80	23.06	6.74	-16.32
O & M Expenses	94.73	94.73	0.00	106.06	106.06	0.00
Compensation Allowance	1.46	1.46	0.00	1.56	1.56	0.00
Interest on Working Capital	17.55	16.69	-0.86	20.83	17.92	-2.91

## Multi Year Tariff of UPRVUNL for FY 2009-14

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Total :	148.51	128.07	-20.44	221.01	140.05	-80.96
Ex-bus Energy Sent Out (kwh)	1092.00	1033.55	-58.45	1189.00	1054.95	-134.05
Cost per Unit	1.36	1.24	-0.12	1.86	1.33	-0.53

Particulars	FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	52.53	1.21	-51.32
Depreciation	26.05	5.88	-20.17
Advance against Depreciation	18.81	0.00	-18.81
Return on Equity	23.06	6.74	-16.32
O & M Expenses	112.40	112.40	0.00
Compensation Allowance	1.56	1.56	0.00
Interest on Working Capital	22.70	19.09	-3.61
Total :	257.11	146.88	-110.23
Ex-bus Energy Sent Out (kwh)	1233.00	1091.74	-141.26
Cost per Unit	2.09	1.35	-0.74

### 7.5.2.2 Variable Charges:

#### (a) Weighted Average Cost and Gross Calorific Value of Coal and Oil

The UPRVUNL was advised by the Commission to provide the details of weighted average cost of coal and oil as well as the weighted average calorific values actually incurred / availed during the financial year 2009-10 which is the first year of the MYT. On the basis of details provided by UPRVUNL, the cost of coal and oil as well as calorific values has been worked out as under:

**Table 7.5. 9**  
**Weighted Average Cost and Gross Calorific Value of Coal and Oil**  
**for F.Y. 2009-10.**

Month	Weighted Average of Landed Cost of Oil	Weighted Average of Gross Calorific value of Oil	Weighted Average of Landed Cost of Coal	Weighted Average of Gross Calorific value of Coal
	(₹/kl)	KCAL/Ltr.	(₹/mt)	(₹KCAL/KG)
April' 2009	37397.25	8909.00	2272.59	3648.00
May' 2009	37884.82	8919.00	2978.30	3806.00
June' 2009	38983.00	8968.00	2844.08	3797.00
July' 2009	42917.98	8863.00	2399.12	3617.00
Aug' 2009	43486.10	9438.00	3954.25	3716.00
Sept' 2009	44325.75	9421.00	3717.72	3776.00
Oct' 2009	42286.60	9441.00	2544.24	3750.00
Nov' 2009	45768.25	9441.00	2599.71	3397.00
Dec' 2009	45003.75	9463.00	2800.82	3536.00
Jan' 2010	45495.42	9486.00	2550.33	3493.00
Feb' 2010	44566.40	9476.00	2692.51	3688.00
Mar' 2010	47845.53	9481.41	2932.96	3532.00
<b>Total:</b>	<b>515960.85</b>	<b>111306.41</b>	<b>34286.63</b>	<b>43756.00</b>
<b>Monthly Weighted Avg.</b>	<b>42996.74</b>	<b>9275.53</b>	<b>2857.22</b>	<b>3646.33</b>

**(b) Variable charge per unit of Generation:**

Based on the operation norms provided in the UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 and the Commission's decisions in foregoing paras, the variable charge per unit of generation for Panki Power Station for the MYT period of F.Y. 2009-10 to 2013-14 shall be as given in the following table.

**Table 7.5. 10**  
**Variable charge per unit of generation for Panki Power Station**

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Capacity	MW	210	210	210	210	210
Target Availability Factor	%	65	66	67	68	70
Plant Load Factor (PLF)	%	60	61	62	63	65
Gross Station Heat Rate	Kcal/kWh	3100	3070	3040	3010	2980
Auxiliary Energy Consumption	%	11.0	10.8	10.6	10.2	9.8

## Multi Year Tariff of UPRVUNL for FY 2009-14

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Gross Energy Generation	MU	1104	1122	1141	1159	1196
Auxiliary Energy Consumption	MU	121	121	107	104	104
Ex-bus Energy Sent Out	MU	983	1001	1034	1055	1092
Specific Oil Consumption	ml/Kwh	2.50	2.40	2.30	2.20	2.10
Weighted Average (GCV) of Oil	KCal/Lt.	9276	9276	9276	9276	9276
Price of Oil	₹/KL	42997	45147	47404	49774	52263
Weighted Average (GCV) of Coal	KCal/kg.	3646	3646	3646	3646	3646
Price of Coal	₹/Mt.	2857	3000	3150	3308	3473
Heat Contribution from SFO	Kcal/Kwh	24	23	22	21	20
Total Oil Consumption	KL	2759	2693	2623	2550	2511
Heat Contribution from Coal	Kcal/kWh	3076	3047	3018	2989	2960
Specific Coal Consumption	Kg/Kwh	0.84	0.84	0.83	0.82	0.81
Coal Consumption	MMT	0.931	0.938	0.944	0.950	0.971
Total Cost of Oil @ ₹	₹ in Cr.	11.86	12.16	12.44	12.69	13.12
Total Cost of Coal @ ₹	₹ in Cr.	266.04	281.32	297.37	314.23	337.11
Total Cost of Fuel (Oil & Coal)	₹ in Cr.	277.91	293.48	309.81	326.92	350.23
Rate of Energy Charges from secondary Fuel Oil Ex-bus	Paise/Kwh	12.07	12.14	12.03	12.03	12.02
Rate of Energy Charges from Coal Ex-bus	Paise/Kwh	270.71	281.00	287.72	297.86	308.78
Rate of Energy Charges Ex-bus per Kwh	Paise/Kwh	282.78	293.14	299.75	309.89	320.80

### (c) Adjustment of Rate of Energy Charge on Account of Variation in price or Heat Value of Fuels:

The above variable cost derived by the Commission on the basis of the information provided by the UPRVUNL based on provisional annual accounts report for the Financial Year 2009-10 shall be applicable for the financial year 2009-10 and thereafter the variable cost have been derived after allowing normal increase in the cost of fuel @ 5% per year. However, the beneficiary will make the payment of the variable cost to be derived on the basis of weighted average cost of oil as well as coal including the

weighted average Gross Calorific Value of both these elements of fossil fuel to be verified by the Practicing Cost Accountant in support of the same.

**“However, UPRVUNL shall be entitled to recover / adjust any change in fuel cost according to the provisions set out in the Generation Regulations. Fuel price variation shall be claimed based on actual audited cost of fuel and GCV on month to month basis.”**

### 7.5.2.3 Total Charges (Cost):

The overall tariff comprises two parts, Fixed and Variable. The Annual Capacity (Fixed) Charge consists of Interest on loan capital, Depreciation, ROE, O&M, IWC and Compensation Allowance and Energy (Variable) Charges consists coal and secondary oil cost per kWh of the electricity generated. The total charges (costs) as determined by the Commission for Panki Thermal Power Station for the MYT period of 2009-10 to 2013-14 as against claimed by UPRVUNL are summarized in the table below.

**Table 7.5. 11  
Cost per kWh as claimed by UPRVUNL with those as allowed  
by the Commission**

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	3.37	3.92	0.55	2.94	3.24	0.30
Depreciation	6.25	5.88	-0.37	6.25	5.88	-0.37
A A D	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	6.01	6.74	0.73	6.01	6.74	0.73
O & M Expenses	79.55	79.55	0.00	84.33	84.33	0.00
Com. Allowance	1.37	1.37	0.00	1.37	1.37	0.00
I W C	14.42	14.74	0.32	15.22	15.55	0.33
Fixed Cost (Rs. in Crs.)	110.97	112.21	1.24	116.12	117.12	1.00
F. C. per Unit (In Paise)	113	114	1	116	117	1
V. C. on Fuel (Rs. in Crs.)	231.22	277.91	46.69	244.21	293.48	49.27
V. C. per Unit (In paise)	235	283	47	244	293	49



## Multi Year Tariff of UPRVUNL for FY 2009-14

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Total Cost (Rs. in Crs.)	342.19	390.11	47.92	360.33	410.60	50.27
Ex-bus Energy Sent Out (kwh)	982.00	982.76	0.76	1001.00	1001.16	0.16
Total Cost per Unit (In Paise)	348	397	48	360	410	50

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	4.29	2.57	-1.72	43.45	1.89	-41.56
Depreciation	15.94	5.88	-10.06	26.05	5.88	-20.17
A A D	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	14.54	6.74	-7.80	23.06	6.74	-16.32
O & M Expenses	94.73	94.73	0.00	106.06	106.06	0.00
Com. Allowance	1.46	1.46	0.00	1.56	1.56	0.00
I W C	17.55	16.69	-0.86	20.83	17.92	-2.91
Fixed Cost (Rs. in Crs.)	148.51	128.07	-20.44	221.01	140.05	-80.96
F. C. per Unit (In Paise)	136	124	-12	186	133	-53
V. C. on Fuel (Rs. in Crs.)	276.23	309.81	33.58	310.95	326.92	15.97
V. C. per Unit (In paise)	253	300	47	262	310	48
Total Cost (Rs. in Crs.)	424.74	437.88	13.14	531.96	466.97	-64.99
Ex-bus Energy Sent Out (kwh)	1092.00	1033.55	-58.45	1189.00	1054.95	-134.05
Total Cost per Unit (In Paise)	389	424	35	447	443	-5

Particulars	FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	52.53	1.21	-51.32
Depreciation	26.05	5.88	-20.17
A A D	18.81	0.00	-18.81
Return on Equity	23.06	6.74	-16.32
O & M Expenses	112.40	112.40	0.00
Com. Allowance	1.56	1.56	0.00
I W C	22.70	19.09	-3.61
Fixed Cost (Rs. in Crs.)	257.11	146.88	-110.23



## Multi Year Tariff of UPRVUNL for FY 2009-14

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Particulars	FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
F. C. per Unit (In Paise)	209	135	-74
V. C. on Fuel (Rs. in Crs.)	333.16	350.23	17.07
V. C. per Unit (In paise)	270	321	51
Total Cost (Rs. in Crs.)	590.27	497.11	-93.16
Ex-bus Energy Sent Out (kwh)	1233.00	1091.74	-141.26
Total Cost per Unit (In Paise)	479	455	-23





**7.6**

**Section - 6**

**Multi Year Tariff**

**for**

**Harduaganj**

**Thermal Power Station**

**for**

**FY 2009-10 to 2013-14**



## Multi Year Tariff of UPRVUNL for FY 2009-14

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### 7.6.1 ARR and MYT as according to petition

In the petition, UPRVUNL has proposed the fixed, variable and total charges for the electricity sent out as given in the table below:

**Table 7.6. 1**

<b>Harduaganj TPS</b>	2009-10	2010-11	2011-12	2012-13	2013-14
Energy Sent out (MU)	853	872	970	1027	1105
Fixed Charges (₹)	1.46	1.83	2.42	2.39	2.23
Variable Charges (₹)	3.27	3.37	3.47	3.58	3.68
Total Charges (₹)	4.73	5.2	5.89	5.97	5.91
ARR (₹ in Cr.)	403.469	453.44	571.33	613.119	653.055

### 7.6.2 ARR and MYT as determined by the Commission

#### 7.6.2.1 Capacity (Fixed) Charges

##### (a) Provisions under Regulations:

For determination of components of fixed charges for MYT period of FY 2009-10 to 2013-14, the Commission opines that the parameters provided under UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 shall be considered. Hence, the Commission has decided to allow the components of fixed charges as below:

**Table 7.6. 2**

<b>Components of Fixed Charge</b>	<b>Value</b>	<b>Remark</b>
<b>Return on equity</b>	15.5%	As per the Regulations
<b>Interest on Loans</b>	12.11%	Weighted average of interest on loans for FY 2011-12 to FY 2013-14 as per form 13 of ARR
<b>O &amp; M Expenses</b>	<u>As per petition</u>	
<b>Compensation Allowance</b>	₹ 0.65 lacs /MW	As per the Regulations

Components of Fixed Charge	Value	Remark
<b>Advance Against Depreciation</b>	Zero	As per the Regulations
<b>Interest on working capital</b>	12.25 %	As per the Regulations

**(b) R & M of Plant**

Harduaganj Power Station (220 MW) is more than 33 years old for which a comprehensive Refurbishment Scheme involving expenditure of Rs 392.00 Cr.. has been approved by the Commission vide order dated 18.2.10.

**(c) Gross Fixed Assets (GFA) and its Components**

The valuation of GFA duly supported with the financing program and the value of NFA is essential to be worked out at the end of each financial year for the determination of Return on Equity, Interest on balance Loans and Depreciation. Therefore, the GFA and NFA at the end of each financial year commencing from FY 2009-10 FY 2013-14 has been worked out alongwith Equity and Debts taking base figures as allowed under Commission's Tariff Order for FY 2008-09.

**Table 7.6. 3  
Calculation of GFA & NFA including financing**

<b>HARDUAGANJ Power Station</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Op. GFA	265.67	266.67	405.77	797.77	797.77
Additions	1.00	139.10	392.00	0.00	0.00
<b>Cl. GFA</b>	<b>266.67</b>	<b>405.77</b>	<b>797.77</b>	<b>797.77</b>	<b>797.77</b>
Cl. Net FA	<b>94.55</b>	<b>218.95</b>	<b>581.99</b>	<b>553.03</b>	<b>524.07</b>
<b>Financing:</b>					
Op. Equity	79.04	79.04	79.04	169.04	169.04
Additions	0.00	0.00	90.00	0.00	0.00

HARDUAGANJ Power Station	2009-10	2010-11	2011-12	2012-13	2013-14
Cl. Equity	79.04	79.04	169.04	169.04	169.04
Op. Accu Dep.	162.42	172.12	186.82	215.78	244.74
Dep. During the year	9.70	14.70	28.96	28.96	28.96
Cl. Accu. Dep.	172.12	186.82	215.78	244.74	273.70
Op. Debts	24.21	15.51	139.91	412.95	383.99
Additions	1.00	139.10	302.00	0.00	0.00
Less: Dep.	9.70	14.70	28.96	28.96	28.96
Cl. Debts	15.51	139.91	412.95	383.99	355.03

**(d) RoE, Depreciation, O&M and Interest on Loans**

On the basis of decisions of the Commission in forgoing paragraphs and the details of GFA, NFA and financing as above, at the end of each financial year of the control MYT period from FY 2009-10 to 2013-14, RoE, Depreciation, O&M and Interest on Loans are worked out as under:

**Table 7.6. 4  
Details of RoE, Depreciation, O&M and Interest on Loans**

Sl.No.	Particular	2009-10	2010-11	2011-12	2012-13	2013-14
1	Return on Equity	12.25	12.25	26.20	26.20	26.20
2	Depreciation	9.70	14.70	28.96	28.96	28.96
3	A A D	0.00	4.10	6.04	10.84	10.84
4	Interest on Loans	1.88	16.94	50.01	46.50	42.99
5	O & M Expenses	74.43	79.08	87.99	93.49	99.34
6	Com. Allowance	1.43	1.43	1.53	1.53	1.53
	<b>Total:</b>	<b>99.69</b>	<b>128.50</b>	<b>200.73</b>	<b>207.52</b>	<b>209.87</b>

The amount of GFA pertaining to Harduaganj Power Station at the beginning of F.Y. 2009-10 was ₹265.67 Cr. out of which ₹2.0 Cr. was invested in the land leaving thereby a balance of ₹263.67 Cr.. The maximum Depreciation as per UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 is permissible to the extent of 90% of the value of the GFA excluding the value of land which is worked out to ₹237.30 Cr. for Harduaganj Power Station. The accumulated depreciation allowed till the end of FY 2013-14 is ₹273.70 Cr. which is permissible due to such

additional capitalization in subsequent years and therefore, the depreciation as claimed by the petitioner has been allowed till F.Y.2013-14.

**(e) Interest on Working Capital:**

The amount of Working Capital and Interest on Working Capital for the control period of F.Y. 2009-10 to 2013-14 as claimed by the Petitioner and as determined by the Commission are as under:-

**Table 7.6. 5  
Annual Receivables of Harduaganj Power Station required for  
calculation of Working Capital:**

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Annual Capacity [Fixed] Charges	99.69	128.50	200.73	207.52	209.87
Cost of Fuel	169.85	130.72	243.76	313.90	345.63
<b>Total Receivables</b>	<b>269.54</b>	<b>259.22</b>	<b>444.49</b>	<b>521.42</b>	<b>555.50</b>

**Table 7.6. 6  
Working Capital as determined by the Commission**

Sl.No.	Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
1	Cost of Coal for 1 and ½ month	20.12	15.51	28.95	37.35	41.21
2	Cost of Secondary Fuel Oil for 2 months	1.49	1.11	2.03	2.52	2.66
3	Operation & Maintenance for 1 month	6.20	6.59	7.33	7.79	8.28
4	Maintenance Spares @20% O & M Exp.	14.89	15.82	17.60	18.70	19.87
5	Receivables equivalent to 2 months charges for sale of electricity	44.92	43.20	74.08	86.90	92.58
6	<b>Working Capital</b>	<b>87.62</b>	<b>82.23</b>	<b>129.99</b>	<b>153.26</b>	<b>164.60</b>
7	Rate of Interest	12.25	12.25	12.25	12.25	12.25
8	<b>I W C</b>	<b>10.73</b>	<b>10.07</b>	<b>15.92</b>	<b>18.77</b>	<b>20.16</b>

\*The Cost of fuel has been taken from Tables 7.6.9 and 7.6.10.

**Table 7.6. 7**  
**IWC during the Control Period as claimed by UPRVUNL**

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Working Capital	134.18	146.34	175.68	189.23	204.00
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
I W C	16.44	17.93	21.52	23.18	24.99

**(f) Capacity (Fixed) Charges**

Based on above the capacity charges as claimed by UPRVUNL and as approved by the Commission are tabulated herein for the MYT period of F.Y. 2009-10 to 2013-14. Ex-bus energy sent out has been taken from Table 7.6.10.

**Table 7.6. 8**  
**Fixed Charges as claimed by UPRVUNL and as approved by the Commission**

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	6.21	1.88	-4.33	9.75	16.94	7.19
Depreciation	9.99	9.70	-0.29	14.99	14.70	-0.29
Advance against Depreciation	3.15	0.00	-3.15	17.01	4.10	-12.91
Return on Equity	12.73	12.25	-0.48	19.20	12.25	-6.95
O & M Expenses	74.43	74.43	0.00	79.08	79.08	0.00
Compensation Allowance	1.43	1.43	0.00	1.43	1.43	0.00
Interest on Working Capital	16.44	10.73	-5.71	17.93	10.07	-7.86
Total :	124.38	110.42	-13.96	159.39	138.58	-20.81
Ex-bus Energy Sent Out (kwh)	853.00	611.00	-242.00	872.00	456.00	-416.00
Fixed Cost per Unit	1.46	1.81	0.35	1.83	3.04	1.21

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	41.06	50.01	8.95	43.93	46.50	2.57
Depreciation	29.11	28.96	-0.15	29.11	28.96	-0.15



## Multi Year Tariff of UPRVUNL for FY 2009-14

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Advance against Depreciation	20.14	6.04	-14.10	20.82	10.84	-9.98
Return on Equity	33.15	26.20	-6.95	33.15	26.20	-6.95
O & M Expenses	87.99	87.99	0.00	93.49	93.49	0.00
Compensation Allowance	1.53	1.53	0.00	1.53	1.53	0.00
Interest on Working Capital	21.52	15.92	-5.60	23.18	18.77	-4.41
Total :	234.50	216.65	-17.85	245.21	226.30	-18.91
Ex-bus Energy Sent Out (kwh)	970.00	850.63	-119.37	1027.00	1037.79	10.79
Fixed Cost per Unit	2.42	2.55	0.13	2.39	2.18	-0.21

Particulars	FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	37.16	42.99	5.83
Depreciation	29.11	28.96	-0.15
Advance against Depreciation	20.82	10.84	-9.98
Return on Equity	33.15	26.20	-6.95
O & M Expenses	99.34	99.34	0.00
Compensation Allowance	1.53	1.53	0.00
Interest on Working Capital	24.99	20.16	-4.83
Total :	246.10	230.03	-16.07
Ex-bus Energy Sent Out (kwh)	1105.00	1105.00	0.00
Fixed Cost per Unit	2.23	2.08	-0.15

### 7.6.2.2 Variable Charges:

#### (a) Weighted Average Cost and Gross Calorific Value of Coal and Oil

The UPRVUNL was advised by the Commission to provide the details of weighted average cost of coal and oil as well as the weighted average calorific values actually incurred / availed during the financial year 2009-10 which is the first year of the MYT. On the basis of details provided by

UPRVUNL, the cost of coal and oil as well as calorific values has been worked out as under:

**Table 7.6. 9**  
**Weighted Average Cost and Gross Calorific Value of Coal and Oil**  
**for F.Y. 2009-10.**

Month	Weighted Average of Landed Cost of Oil	Weighted Average of Gross Calorific value of Oil	Weighted Average of Landed Cost of Coal	Weighted Average of Gross Calorific value of Coal
	(₹/kl)	KCAL/Ltr.	(₹/mt)	(₹KCAL/KG)
April' 2009	19143.22	10048.00	2579.95	3560.00
May' 2009	19143.22	10048.00	2633.71	3722.00
June' 2009	19143.22	10048.00	2559.62	3971.00
July' 2009	25777.13	10048.00	2579.27	4216.00
Aug' 2009	27603.32	10067.00	2484.81	3928.00
Sept' 2009	27603.32	10067.00	2491.43	3910.00
Oct' 2009	35474.12	10067.00	2657.58	3852.00
Nov' 2009	35474.12	10067.00	2731.65	3979.00
Dec' 2009	35474.12	10067.00	3103.69	3868.00
Jan' 2010	35474.12	10067.00	3117.03	3796.00
Feb' 2010	35474.12	10067.00	2941.20	3962.00
Mar' 2010	29061.19	10067.00	3144.49	4033.00
<b>Total:</b>	<b>344845.22</b>	<b>120728.00</b>	<b>33024.43</b>	<b>46797.00</b>
<b>Monthly Weighted Avg.</b>	<b>28737.10</b>	<b>10060.67</b>	<b>2752.04</b>	<b>3899.75</b>

**(b) Variable charge per unit of Generation:**

Based on the operation norms provided in the UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 and the Commission's decisions in foregoing paras, the variable charge per unit of generation for Harduaganj Power Station for the MYT period of F.Y. 2009-10 to 2013-14 shall be as given in the following table.

**Table 7.6. 10**  
**Variable charge per unit of generation for Harduaganj Power Station**

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Capacity	MW	4/9 to 12/9 -220	115	4/11 to 7/11 - 115	235	235
	MW	1/10 to 3/10 -115		8/11 to 3/12 - 235		



## Multi Year Tariff of UPRVUNL for FY 2009-14

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Average Capacity	MW	194	115	195	235	235
Target Availability	%				65	65
Plant Load Factor (PLF)	%	50	51	4/11 to 7/11 53	58	60
Plant Load Factor (PLF)	%			8/11 to 3/12 57		
Gross Station Heat Rate	Kcal/kWh	3350	3300	4/11 to 7/11 - 3250	On 115 MW - 200	3150
	Kcal/kWh			8/11 to 3/12 - 3150	On 120 MW - 150	
Auxiliary Energy Consumption	%	11.5	11.3	4/11 to 7/11 11.1	10.9	10.5
	%			8/11 to 3/12 10.5		
Gross Generation	MU	678	514	534	534	1235
	MU	12		420	631	
Total Gross Generation	MU	690	514	954	1165	1235
Auxiliary Energy Consumption	MU	78	58	59	58	130
	MU	1		44	69	
Ex-bus Energy Sent Out	MU	611	456	851	1038	1105
Specific Oil Consumption	ml/Kwh	4.5	4.3	4/11 to 7/11 4.3	3.9	3.7
	ml/Kwh			8/11 to 3/12 3.7		
Weighted Average (GCV) of Oil	KCal/Lt.	10061	10061	10061	10061	10061
Price of Oil	₹/KL	28737	30174	31683	33267	34930
Weighted Average (GCV) of Coal	KCal/kg.	3900	3900	3900	3900	3900
Price of Coal	₹/Mt.	2752	2890	3034	3186	3345
Heat Contribution from SFO	Kcal/Kwh	45	43	4/11 to 7/11 41	On 115MW 39	38
	Kcal/Kwh			8/11 to 3/12 37	On 120MW 37	
Total Oil Consumption	KL	3051	2210	2296	2083	4570
	KL	54		1554	2461	
Total Oil Consumption	KL	3105	2210	3850	4544	4570
Heat Contribution from Coal	Kcal/kWh	3305	3257	4/11 to 7/11 3109	3161	3112
	Kcal/kWh			8/11 to 3/12 3113	3113	



## Multi Year Tariff of UPRVUNL for FY 2009-14

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Specific Coal Consumption	Kg/Kwh	0.85	0.84	0.80	0.81	0.80
	Kg/Kwh			0.80	0.80	
Coal Consumption	MMT	0.575	0.429	0.427	0.433	0.986
	MMT	0.010	0.000	0.336	0.505	0.000
Total Coal Consumption	MMT	0.585	0.429	0.763	0.938	0.986
Total Cost of Oil @ ₹	₹ in Cr.	8.92	6.67	12.20	15.12	15.96
Total Cost of Coal @ ₹	₹ in Cr.	160.93	124.05	231.56	298.78	329.67
Total Cost of Fuel (Oil & Coal)	₹ in Cr.	169.85	130.72	243.76	313.90	345.63
Rate of Energy Charges from secondary Fuel Oil Ex-bus	Paise/Kwh	14.60	14.63	14.34	14.57	14.44
Rate of Energy Charges from Coal Ex-bus	Paise/Kwh	263.39	272.03	272.23	287.90	298.35
Rate of Energy Charges Ex-bus per Kwh	Paise/Kwh	277.99	286.66	286.57	302.47	312.79

### (c) Adjustment of Rate of Energy Charge on Account of Variation in price or Heat Value of Fuels:

The above variable cost derived by the Commission on the basis of the information provided by the UPRVUNL based on provisional annual accounts report for the Financial Year 2009-10 shall be applicable for the financial year 2009-10 and thereafter the variable cost have been derived after allowing normal increase in the cost of fuel @ 5% per year. However, the beneficiary will make the payment of the variable cost to be derived on the basis of weighted average cost of oil as well as coal including the weighted average Gross Calorific Value of both these elements of fossil fuel to be verified by the Practicing Cost Accountant in support of the same.

**“However, UPRVUNL shall be entitled to recover / adjust any change in fuel cost according to the provisions set out in the**

**Generation Regulations. Fuel price variation shall be claimed based on actual audited cost of fuel and GCV on month to month basis.”**

### 7.6.2.3 Total Charges (Cost):

The overall tariff comprises two parts, Fixed and Variable. The Annual Capacity (Fixed) Charge consists of Interest on loan capital, Depreciation, ROE, O&M, IWC and Compensation Allowance and Energy (Variable) Charges consists coal and secondary oil cost per kWh of the electricity generated. The total charges (costs) as determined by the Commission for Harduaganj Thermal Power Station for the MYT period of 2009-10 to 2013-14 as against claimed by UPRVUNL are summarized in the table below.

**Table 7.6. 11  
Cost per kWh as claimed by UPRVUNL with those as allowed  
by the Commission**

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	6.21	1.88	-4.33	9.75	16.94	7.19
Depreciation	9.99	9.70	-0.29	14.99	14.70	-0.29
A A D	3.15	0.00	-3.15	17.01	4.10	-12.91
Return on Equity	12.73	12.25	-0.48	19.20	12.25	-6.95
O & M Expenses	74.43	74.43	0.00	79.08	79.08	0.00
Com. Allowance	1.43	1.43	0.00	1.43	1.43	0.00
I W C	16.44	10.73	-5.71	17.93	10.07	-7.86
Fixed Cost (Rs. in Crs.)	124.38	110.42	-13.96	159.39	138.58	-20.81
F. C. per Unit (In Paise)	146	181	35	183	304	121
V. C. on Fuel (Rs. in Crs.)	278.75	169.85	-108.90	293.78	130.72	-163.06
V. C. per Unit (In paise)	327	278	-49	337	287	-50
Total Cost (Rs. in Crs.)	403.13	280.28	-122.85	453.17	269.29	-183.88
Ex-bus Energy Sent Out (kwh)	853.00	611.00	-242.00	872.00	456.00	-416.00
Total Cost per Unit (In Paise)	473	459	-14	520	591	71



## Multi Year Tariff of UPRVUNL for FY 2009-14

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	41.06	50.01	8.95	43.93	46.50	2.57
Depreciation	29.11	28.96	-0.15	29.11	28.96	-0.15
A A D	20.14	6.04	-14.10	20.82	10.84	-9.98
Return on Equity	33.15	26.20	-6.95	33.15	26.20	-6.95
O & M Expenses	87.99	87.99	0.00	93.49	93.49	0.00
Com. Allowance	1.53	1.53	0.00	1.53	1.53	0.00
I W C	21.52	15.92	-5.60	23.18	18.77	-4.41
Fixed Cost (Rs. in Crs.)	234.50	216.65	-17.85	245.21	226.30	-18.91
F. C. per Unit (In Paise)	242	255	13	239	218	-21
V. C. on Fuel (Rs. in Crs.)	336.88	243.76	-93.12	367.60	313.90	-53.70
V. C. per Unit (In paise)	347	287	-61	358	302	-55
Total Cost (Rs. in Crs.)	571.38	460.42	-110.96	612.81	540.19	-72.62
Ex-bus Energy Sent Out (kwh)	970.00	850.63	-119.37	1027.00	1037.79	10.79
Total Cost per Unit (In Paise)	589	541	-48	597	521	-76

Particulars	FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	37.16	42.99	5.83
Depreciation	29.11	28.96	-0.15
A A D	20.82	10.84	-9.98
Return on Equity	33.15	26.20	-6.95
O & M Expenses	99.34	99.34	0.00
Com. Allowance	1.53	1.53	0.00
I W C	24.99	20.16	-4.83
Fixed Cost (Rs. in Crs.)	246.10	230.03	-16.07
F. C. per Unit (In Paise)	223	208	-15
V. C. on Fuel (Rs. in Crs.)	406.62	345.63	-60.99
V. C. per Unit (In paise)	368	313	-55
Total Cost (Rs. in Crs.)	652.72	575.66	-77.06
Ex-bus Energy Sent Out (kwh)	1105.00	1105.00	0.00
Total Cost per Unit (In Paise)	591	521	-70



## Multi Year Tariff of UPRVUNL for FY 2009-14

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**7.7**

**Section – 7**

**Multi Year Tariff**

**for**

**Parichha**

**Thermal Power Station**

**for**

**FY 2009-10 to 2013-14**



### 7.7.1 ARR and MYT as according to petition

In the petition, UPRVUNL has proposed the fixed, variable and total charges for the electricity sent out as given in the table below:

Table 7.7. 1

Parichha	2009-10	2010-11	2011-12	2012-13	2013-14
Energy Sent out (MU)	1023	1043	1079	1133	1205
Fixed Charges (₹)	0.97	1.11	1.23	1.51	1.5
Variable Charges (₹)	2.36	2.45	2.54	2.63	2.73
Total Charges (₹)	3.33	3.56	3.77	4.14	4.23
ARR (₹ In Cr.)	340.65	371.30	406.78	469.06	509.71

### 7.7.2 ARR and MYT as determined by the Commission

#### 7.7.2.1 Capacity (Fixed) Charges

##### (a) Provisions under Regulations:

For determination of components of fixed charges for MYT period of FY 2009-10 to 2013-14, the Commission opines that the parameters provided under UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 shall be considered. Hence, the Commission has decided to allow the components of fixed charges as below:

Table 7.7. 2

Components of Fixed Charge	Value	Remark
Return on Equity	15.5%	As per the Regulations
Interest on Loans	12.52%	Weighted average of interest on loans for FY 2012-13 to FY 2013-14 as per form 13 of ARR
O & M Expenses	<u>As per petition</u>	
Compensation Allowance	₹ 0.65 lacs /MW	As per the Regulations
Advance Against Depreciation	Zero	As per the Regulations
Interest on working capital	12.25 %	As per the Regulations

**(b) R & M of Plant**

Parichha Power Station (2 x 110 MW) is more than 25 years old for which a comprehensive Refurbishment Scheme has been proposed by UPRVUNL involving expenditure of Rs 275.00 Cr.. In support of the proposed Renovation and Modernization (R&M) plan neither any Detailed Project Report (DPR) nor its financial closure as agreed upon by the Power Finance Corporation (PFC) and the State Government has been provided by UPRVUNL. The proposal has not been submitted to the Commission for approval as yet. Therefore, the Commission decides not to allow the capitalization on R&M scheme for MYT period of FY 2009-10 to 2013-14 as claimed by UPRVUNL.

**(c) Gross Fixed Assets (GFA) and its Components**

The valuation of GFA duly supported with the financing program and the value of NFA is essential to be worked out at the end of each financial year for the determination of Return on Equity, Interest on balance Loans and Depreciation. Therefore, the GFA and NFA at the end of each financial year commencing from FY 2009-10 FY 2013-14 has been worked out alongwith Equity and Debts taking base figures as allowed under Commission's Tariff Order for FY 2008-09.

**Table 7.7. 3  
Calculation of GFA & NFA including financing**

<b>PARICHHA Power Station</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Op. GFA	223.64	223.84	283.54	283.54	283.54
Additions	0.20	59.70	0.00	0.00	0.00
<b>Cl. GFA</b>	<b>223.84</b>	<b>283.54</b>	<b>283.54</b>	<b>283.54</b>	<b>283.54</b>
Cl. Net FA	<b>85.21</b>	<b>134.86</b>	<b>124.81</b>	<b>114.76</b>	<b>104.71</b>
<b>Financing:</b>					
Op. Equity	57.22	57.22	75.12	75.12	75.12



## Multi Year Tariff of UPRVUNL for FY 2009-14

PARICHHA Power Station	2009-10	2010-11	2011-12	2012-13	2013-14
Additions	0.00	17.90	0.00	0.00	0.00
Cl. Equity	<b>57.22</b>	<b>75.12</b>	<b>75.12</b>	<b>75.12</b>	<b>75.12</b>
Op. Accu Dep.	130.68	138.63	148.68	158.73	168.78
Dep. During the year	7.95	10.05	10.05	10.05	10.05
Cl. Accu. Dep.	<b>138.63</b>	<b>148.68</b>	<b>158.73</b>	<b>168.78</b>	<b>178.83</b>
Op. Debts	35.74	27.99	59.74	49.69	39.64
Additions	0.20	41.80	0.00	0.00	0.00
Less: Depreciation	7.95	10.05	10.05	10.05	10.05
Cl. Debts	27.99	59.74	49.69	39.64	29.59

### (d) RoE, Depreciation, O&M and Interest on Loans

On the basis of decisions of the Commission in forgoing paragraphs and the details of GFA, NFA and financing as above, at the end of each financial year of the control MYT period from FY 2009-10 to 2013-14, RoE, Depreciation, O&M and Interest on Loans are worked out as under:

**Table 7.7. 4**  
**Details of RoE, Depreciation, O&M and Interest on Loans**

Sl.No.	Particular	2009-10	2010-11	2011-12	2012-13	2013-14
1	Return on Equity	8.87	11.64	11.64	11.64	11.64
2	Depreciation	7.95	10.05	10.05	10.05	10.05
3	A A D	0.00	0.00	0.00	0.00	0.00
4	Interest on Loans	3.50	7.48	6.22	4.96	3.70
5	O & M Expenses	61.59	65.17	68.96	72.97	77.22
6	Com. Allowance	1.43	1.43	1.43	1.43	1.43
	<b>Total:</b>	<b>83.34</b>	<b>95.77</b>	<b>98.30</b>	<b>101.06</b>	<b>104.05</b>

The amount of GFA pertaining to Parichha Power Station at the beginning of F.Y. 2009-10 was ₹223.64 Cr. out of which ₹3.60 Cr. was invested in the land leaving thereby a balance of ₹220.04 Cr.. The maximum Depreciation as per UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 is permissible to the extent of 90% of the value of the GFA excluding the value of land which is worked out to ₹198.04 Cr. for Parichha Power Station. The accumulated depreciation allowed till the end

of FY 2013-14 is ₹178.83 Cr. which is less than ₹198.04 Cr. therefore, the Commission has allowed full Depreciation for FY 2009-10 to 2013-14.

**(e) Interest on Working Capital:**

The amount of Working Capital and Interest on Working Capital for the control period of F.Y. 2009-10 to 2013-14 as claimed by the Petitioner and as determined by the Commission are as under:-

**Table 7.7. 5  
Annual Receivables of Parichha Power Station required for  
calculation of Working Capital:**

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Annual Capacity [Fixed] Charges	83.34	95.77	98.30	101.06	104.05
Cost of Fuel	263.82	278.87	299.09	325.56	358.63
<b>Total Receivables</b>	<b>347.16</b>	<b>374.64</b>	<b>397.40</b>	<b>426.61</b>	<b>462.68</b>

**Table 7.7. 6  
Working Capital as determined by the Commission**

Sl.No.	Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
1	Cost of Coal for 1 and ½ month	31.65	33.49	35.96	39.18	43.20
2	Cost of Secondary Fuel Oil for 2 months	1.76	1.82	1.91	2.02	2.17
3	Operation & Maintenance for 1 month	5.13	5.43	5.75	6.08	6.44
4	Maintenance Spares @20% O & M Exp.	12.32	13.03	13.79	14.59	15.44
5	Receivables equivalent to 2 months charges for sale of electricity	57.86	62.44	66.23	71.10	77.11
6	<b>Working Capital</b>	<b>108.73</b>	<b>116.22</b>	<b>123.63</b>	<b>132.98</b>	<b>144.36</b>
7	Rate of Interest	12.25	12.25	12.25	12.25	12.25
8	<b>I W C</b>	<b>13.32</b>	<b>14.24</b>	<b>15.15</b>	<b>16.29</b>	<b>17.68</b>

\*The Cost of fuel has been taken from Tables 7.7.9 and 7.7.10.

**Table 7.7. 7  
IWC during the Control Period as claimed by UPRVUNL**

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Working Capital	114.08	122.44	132.61	148.23	161.08
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
I W C	13.97	15.00	16.24	18.16	19.73

**(f) Capacity (Fixed) Charges**

Based on above the capacity charges as claimed by UPRVUNL and as approved by the Commission are tabulated herein for the MYT period of F.Y. 2009-10 to 2013-14. Ex-bus energy sent out has been taken from Table 7.7.10.

**Table 7.7. 8  
Fixed Charges as claimed by UPRVUNL and as approved by the Commission**

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	4.23	3.50	-0.73	5.53	7.48	1.95
Depreciation	7.88	7.95	0.07	10.03	10.05	0.02
Advance against Depreciation	1.35	0.00	-1.35	7.30	0.00	-7.30
Return on Equity	8.40	8.87	0.47	11.17	11.64	0.47
O & M Expenses	61.59	61.59	0.00	65.17	65.17	0.00
Compensation Allowance	1.43	1.43	0.00	1.43	1.43	0.00
Interest on Working Capital	13.97	13.32	-0.65	15.00	14.24	-0.76
Total :	98.85	96.66	-2.19	115.63	110.01	-5.62
Ex-bus Energy Sent Out (kwh)	1023.00	1023.00	0.00	1043.00	1043.00	0.00
Fixed Cost per Unit	0.97	0.94	-0.02	1.11	1.05	-0.05

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	11.53	6.22	-5.31	30.79	4.96	-25.83
Depreciation	14.88	10.05	-4.83	19.93	10.05	-9.88
Advance against Depreciation	4.43	0.00	-4.43	8.51	0.00	-8.51
Return on Equity	15.43	11.64	-3.79	19.69	11.64	-8.05
O & M Expenses	68.96	68.96	0.00	72.97	72.97	0.00
Compensation Allowance	1.43	1.43	0.00	1.43	1.43	0.00
Interest on Working Capital	16.24	15.15	-1.09	18.16	16.29	-1.87
Total :	132.90	113.45	-19.45	171.48	117.35	-54.13
Ex-bus Energy Sent Out (kwh)	1079.00	1079.00	0.00	1133.00	1133.00	0.00
Fixed Cost per Unit	1.23	1.05	-0.18	1.51	1.04	-0.48

Particulars	FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	28.57	3.70	-24.87
Depreciation	19.93	10.05	-9.88
Advance against Depreciation	14.13	0.00	-14.13
Return on Equity	19.69	11.64	-8.05
O & M Expenses	77.22	77.22	0.00
Compensation Allowance	1.43	1.43	0.00
Interest on Working Capital	19.73	17.68	-2.05
Total :	180.70	121.73	-58.97
Ex-bus Energy Sent Out (kwh)	1205.00	1205.00	0.00
Fixed Cost per Unit	1.50	1.01	-0.49

### 7.7.2.2 Variable Charges:

#### (a) Weighted Average Cost and Gross Calorific Value of Coal and Oil

The UPRVUNL was advised by the Commission to provide the details of weighted average cost of coal and oil as well as the weighted average calorific values actually incurred / availed during the financial year 2009-10 which is the first year of the MYT. On the basis of details provided by UPRVUNL, the cost of coal and oil as well as calorific values has been worked out as under:

**Table 7.7. 9**  
**Weighted Average Cost and Gross Calorific Value of Coal and Oil for F.Y. 2009-10**

Month	Weighted Average of Landed Cost of Oil	Weighted Average of Gross Calorific value of Oil	Weighted Average of Landed Cost of Coal	Weighted Average of Gross Calorific value of Coal
	(₹/kl)	KCAL/Ltr.	(₹/mt)	(₹KCAL/KG)
April' 2009	23418.33	9998.74	2470.29	3327.07
May' 2009	22434.31	9928.32	2740.00	3374.38
June' 2009	28700.35	9845.18	2288.15	3170.67
July' 2009	33267.20	9518.61	2229.65	3182.83
Aug' 2009	28620.58	9855.58	2248.85	3233.79
Sept' 2009	30502.66	9914.80	2216.17	3334.08

Month	Weighted Average of Landed Cost of Oil	Weighted Average of Gross Calorific value of Oil	Weighted Average of Landed Cost of Coal	Weighted Average of Gross Calorific value of Coal
	(₹/kl)	KCAL/Ltr.	(₹/mt)	(₹KCAL/KG)
Oct' 2009	33450.87	9816.10	2281.27	3401.51
Nov' 2009	30615.64	9925.38	2246.14	3370.30
Dec' 2009	31075.39	9792.34	2415.49	3310.43
Jan' 2010	31430.44	9893.23	2490.28	3200.53
Feb' 2010	36331.65	9823.80	2450.82	3212.21
Mar' 2010	36331.65	9823.80	1984.61	3209.23
<b>Total:</b>	<b>366179.07</b>	<b>118135.88</b>	<b>28061.72</b>	<b>39327.03</b>
<b>Monthly Weighted Avg.</b>	<b>30514.92</b>	<b>9844.66</b>	<b>2338.48</b>	<b>3277.25</b>

**(b) Variable charge per unit of Generation:**

Based on the operation norms provided in the UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 and the Commission's decisions in foregoing paras, the variable charge per unit of generation for Parichha Power Station for the MYT period of F.Y. 2009-10 to 2013-14 shall be as given in the following table.

**Table 7.7. 10**  
**Variable charge per unit of generation for Parichha Power Station**

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Capacity	MW	220	220	220	220	220
Plant Load Factor (PLF)	%	60	61	63	66	70
Gross Station Heat Rate	Kcal/kWh	3100	3070	3040	3010	2980
Auxiliary Energy Consumption	%	11.5	11.3	11.1	10.9	10.7
Gross Generation	MU	1156	1176	1214	1272	1349
Auxiliary Energy Consumption	MU	133	133	135	139	144
Ex-bus Energy Sent Out	MU	1023	1043	1079	1133	1205
Specific Oil Consumption	ml/Kwh	3	2.9	2.8	2.7	2.6
Weighted Average (GCV) of Oil	Kcal/Lt.	9845	9845	9845	9845	9845
Price of Oil	₹/KL	30515	32041	33643	35325	37091
Weighted Average (GCV) of Coal	Kcal/kg.	3277	3277	3277	3277	3277



## Multi Year Tariff of UPRVUNL for FY 2009-14

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Price of Coal	₹/Mt.	2338	2455	2578	2707	2842
Heat Contribution from SFO	Kcal/Kwh	30	29	28	27	26
Total Oil Consumption	KL	3468	3410	3399	3434	3507
Heat Contribution from Coal	Kcal/kWh	3070	3041	3012	2983	2954
Specific Coal Consumption	Kg/Kwh	0.94	0.93	0.92	0.91	0.90
Coal Consumption	MMT	1.083	1.091	1.116	1.158	1.216
Total Cost of Oil @ ₹	₹ in Cr.	10.58	10.93	11.44	12.13	13.01
Total Cost of Coal @ ₹	₹ in Cr.	253.23	267.94	287.66	313.42	345.62
Total Cost of Fuel (Oil & Coal)	₹ in Cr.	263.82	278.87	299.09	325.56	358.63
Rate of Energy Charges from secondary Fuel Oil Ex-bus	Paise/Kwh	10.34	10.48	10.60	10.71	10.80
Rate of Energy Charges from Coal Ex-bus	Paise/Kwh	247.54	256.89	266.60	276.63	286.82
Rate of Energy Charges Ex-bus per Kwh	Paise/Kwh	257.88	267.37	277.19	287.34	297.62

### (c) Adjustment of Rate of Energy Charge on Account of Variation in price or Heat Value of Fuels:

The above variable cost derived by the Commission on the basis of the information provided by the UPRVUNL based on provisional annual accounts report for the Financial Year 2009-10 shall be applicable for the financial year 2009-10 and thereafter the variable cost have been derived after allowing normal increase in the cost of fuel @ 5% per year. However, the beneficiary will make the payment of the variable cost to be derived on the basis of weighted average cost of oil as well as coal including the weighted average Gross Calorific Value of both these elements of fossil fuel to be verified by the Practicing Cost Accountant in support of the same.

**“However, UPRVUNL shall be entitled to recover / adjust any change in fuel cost according to the provisions set out in the**

**Generation Regulations. Fuel price variation shall be claimed based on actual audited cost of fuel and GCV on month to month basis.”**

### 7.7.2.3 Total Charges (Cost):

The overall tariff comprises two parts, Fixed and Variable. The Annual Capacity (Fixed) Charge consists of Interest on loan capital, Depreciation, ROE, O&M, IWC and Compensation Allowance and Energy (Variable) Charges consists coal and secondary oil cost per kWh of the electricity generated. The total charges (costs) as determined by the Commission for Parichha Thermal Power Station for the MYT period of 2009-10 to 2013-14 as against claimed by UPRVUNL are summarized in the table below.

**Table 7.7. 11  
Cost per kWh as claimed by UPRVUNL with those as allowed by the Commission**

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	4.23	3.50	-0.73	5.53	7.48	1.95
Depreciation	7.88	7.95	0.07	10.03	10.05	0.02
A A D	1.35	0.00	-1.35	7.30	0.00	-7.30
Return on Equity	8.40	8.87	0.47	11.17	11.64	0.47
O & M Expenses	61.59	61.59	0.00	65.17	65.17	0.00
Com. Allowance	1.43	1.43	0.00	1.43	1.43	0.00
I W C	13.97	13.32	-0.65	15.00	14.24	-0.76
Fixed Cost (Rs. in Crs.)	98.85	96.66	-2.19	115.63	110.01	-5.62
F. C. per Unit (In Paise)	97	94	-2	111	105	-5
V. C. on Fuel (Rs. in Crs.)	241.37	263.82	22.45	255.05	278.87	23.82
V. C. per Unit (In paise)	236	258	22	245	267	23
Total Cost (Rs. in Crs.)	340.22	360.48	20.26	370.68	388.88	18.20
Ex-bus Energy Sent Out (kwh)	1023.00	1023.00	0.00	1043.00	1043.00	0.00
Total Cost per Unit (In Paise)	333	352	20	355	373	17

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	11.53	6.22	-5.31	30.79	4.96	-25.83



## Multi Year Tariff of UPRVUNL for FY 2009-14

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Depreciation	14.88	10.05	-4.83	19.93	10.05	-9.88
A A D	4.43	0.00	-4.43	8.51	0.00	-8.51
Return on Equity	15.43	11.64	-3.79	19.69	11.64	-8.05
O & M Expenses	68.96	68.96	0.00	72.97	72.97	0.00
Com. Allowance	1.43	1.43	0.00	1.43	1.43	0.00
I W C	16.24	15.15	-1.09	18.16	16.29	-1.87
Fixed Cost (Rs. in Crs.)	132.90	113.45	-19.45	171.48	117.35	-54.13
F. C. per Unit (In Paise)	123	105	-18	151	104	-48
V. C. on Fuel (Rs. in Crs.)	273.74	299.09	25.35	297.99	325.56	27.57
V. C. per Unit (In paise)	254	277	23	263	287	24
Total Cost (Rs. in Crs.)	406.64	412.54	5.90	469.47	442.90	-26.57
Ex-bus Energy Sent Out (kwh)	1079.00	1079.00	0.00	1133.00	1133.00	0.00
Total Cost per Unit (In Paise)	377	382	5	414	391	-23

Particulars	FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	28.57	3.70	-24.87
Depreciation	19.93	10.05	-9.88
A A D	14.13	0.00	-14.13
Return on Equity	19.69	11.64	-8.05
O & M Expenses	77.22	77.22	0.00
Com. Allowance	1.43	1.43	0.00
I W C	19.73	17.68	-2.05
Fixed Cost (Rs. in Crs.)	180.70	121.73	-58.97
F. C. per Unit (In Paise)	150	101	-49
V. C. on Fuel (Rs. in Crs.)	328.37	358.63	30.26
V. C. per Unit (In paise)	273	298	25
Total Cost (Rs. in Crs.)	509.07	480.37	-28.70
Ex-bus Energy Sent Out (kwh)	1205.00	1205.00	0.00
Total Cost per Unit (In Paise)	422	399	-24



**7.8**

**Section - 8**

**Multi Year Tariff**

**for**

**Parichha Extension  
Thermal Power Station**

**for**

**FY 2009-10 to 2013-14**



## Multi Year Tariff of UPRVUNL for FY 2009-14

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### 7.8.1 ARR and MYT as according to petition

In the petition, UPRVUNL has proposed the fixed, variable and total charges for the electricity sent out as given in the table below:

**Table 7.8. 1**

Parichha Extension	2009-10	2010-11	2011-12	2012-13	2013-14
Energy Sent out (MU)	2678	2678	2678	2678	2678
Fixed Charges (₹)	1.44	1.54	1.53	1.53	1.51
Variable Charges (₹)	1.87	1.97	2.06	2.17	2.28
Total Charges (₹)	3.31	3.51	3.59	3.7	3.79
ARR (₹ in Cr.)	886.41	939.97	961.40	990.86	1014.96

### 7.8.2 ARR and MYT as determined by the Commission

#### 7.8.2.1 Capacity (Fixed) Charges

##### (a) Provisions under Regulations:

For determination of components of fixed charges for MYT period of FY 2009-10 to 2013-14, the Commission opines that the parameters provided under UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 shall be considered. Hence, the Commission has decided to allow the components of fixed charges as below:

**Table 7.8. 2**

Components of Fixed Charge	Value	Remark
Return on equity	15.5%	As per the Regulations
Interest on Loans	9.06% to 10.78%	Rate of Interest on Loans as claimed in different years on form 13 of ARR by UPRVUNL
O & M Expenses	Normative	As per the Regulations

Components of Fixed Charge	Value	Remark
Compensation Allowance	₹ 0.65 lacs /MW	As per the Regulations
Advance Against Depreciation	Zero	As per the Regulations
Interest on working capital	12.25 %	As per the Regulations

**(b) R & M of Plant**

Parichha Extension Power Station (2 x 210 MW) is about 2 years old plant.

**(c) Gross Fixed Assets (GFA) and its Components**

The valuation of GFA duly supported with the financing program and the value of NFA is essential to be worked out at the end of each financial year for the determination of Return on Equity, Interest on balance Loans and Depreciation. Therefore, the GFA and NFA at the end of each financial year commencing from FY 2009-10 FY 2013-14 has been worked out alongwith Equity and Debts taking base figures as allowed under Commission's Tariff Order for FY 2008-09.

**Table 7.8. 3  
Calculation of GFA & NFA including financing**

PARICHHA EXTENSION Power Station	2009-10	2010-11	2011-12	2012-13	2013-14
Op.. GFA	1710.27	1863.67	1863.67	1863.67	1863.67
Additions	153.40	0.00	0.00	0.00	0.00
Clo. GFA	<b>1863.67</b>	<b>1863.67</b>	<b>1863.67</b>	<b>1863.67</b>	<b>1863.67</b>
<b>Financing:</b>					
Equity	365.00	365.00	365.00	365.00	365.00
Debts (Normative)	<b>1498.67</b>	<b>1498.67</b>	<b>1498.67</b>	<b>1498.67</b>	<b>1498.67</b>
Open. Accu Dep.	135.09	239.11	364.35	489.59	614.83
Dep. During the year	67.20	67.20	67.20	67.20	67.20
Advance against Depreciation	36.82	58.04	58.04	58.04	58.04

<b>PARICHHA EXTENSION Power Station</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Total accu. Dep.	<b>239.11</b>	<b>364.35</b>	<b>489.59</b>	<b>614.83</b>	<b>740.07</b>
Net FA	<b>1624.56</b>	<b>1499.32</b>	<b>1374.08</b>	<b>1248.84</b>	<b>1123.60</b>
<b>Financing:</b>					
Equity	365.00	365.00	365.00	365.00	365.00
Debts (Normative)	<b>1259.56</b>	<b>1134.32</b>	<b>1009.08</b>	<b>883.84</b>	<b>758.60</b>

**(d) RoE, Depreciation, O&M and Interest on Loans**

On the basis of decisions of the Commission in forgoing paragraphs and the details of GFA, NFA and financing as above, at the end of each financial year of the control MYT period from FY 2009-10 to 2013-14, RoE, Depreciation, O&M and Interest on Loans are worked out as under:

**Table 7.8. 4  
Details of RoE, Depreciation, O&M and Interest on Loans**

<b>Sl.No.</b>	<b>Particular</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
1	Return on Equity	56.58	56.58	56.58	56.58	56.58
2	Depreciation	67.20	67.20	67.20	67.20	67.20
3	A A D	36.82	58.04	58.04	58.04	58.04
4	Interest on Loans	114.12	108.67	100.30	92.01	81.78
5	O & M Expenses	76.44	80.81	85.43	90.34	95.51
6	Com. Allowance	0.00	0.00	0.00	0.00	0.00
	<b>Total:</b>	<b>351.15</b>	<b>371.29</b>	<b>367.55</b>	<b>364.16</b>	<b>359.10</b>

The amount of GFA pertaining to Parichha Extension Power Station at the beginning of F.Y. 2009-10 was ₹1710.27 Cr.. The cost of land is nil and therefore. The maximum Depreciation as per UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 is permissible to the extent of 90% of the value of the GFA excluding the value of land which is worked out to ₹1539.24 Cr. for Parichha Extension Power Station. The accumulated depreciation allowed till the end of FY 2013-14 is ₹740.07 Cr. which is less than ₹1539.24 Cr. therefore, the Commission has allowed full Depreciation for FY 2009-10 to 2013-14.

**(e) Interest on Working Capital:**

The amount of Working Capital and Interest on Working Capital for the control period of F.Y. 2009-10 to 2013-14 as claimed by the Petitioner and as determined by the Commission are as under:-

**Table 7.8. 5  
Annual Receivables of Parichha Extension Power Station required  
for calculation of Working Capital:**

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Annual Capacity [Fixed] Charges	351.15	371.29	367.55	364.16	359.10
Cost of Fuel	577.48	606.36	636.67	668.51	701.93
<b>Total Receivables</b>	<b>928.63</b>	<b>977.65</b>	<b>1004.22</b>	<b>1032.67</b>	<b>1061.03</b>

**Table 7.8. 6  
Working Capital as determined by the Commission**

Sl.No.	Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
1	Cost of Coal for 1 and ½ month	69.94	73.44	77.11	80.96	85.01
2	Cost of Secondary Fuel Oil for 2 months	2.99	3.14	3.30	3.47	3.64
3	Operation & Maintenance for 1 month	6.37	6.73	7.12	7.53	7.96
4	Maintenance Spares @20% O & M Exp.	15.29	16.16	17.09	18.07	19.10
5	Receivables equivalent to 2 months of fixed charges for sale of electricity	154.77	162.94	167.37	172.11	176.84
6	<b>Total Working Capital</b>	<b>249.36</b>	<b>262.42</b>	<b>271.98</b>	<b>282.14</b>	<b>292.55</b>
7	Rate of Interest	12.25	12.25	12.25	12.25	12.25
8	<b>Interest on Working Capital</b>	<b>30.55</b>	<b>32.15</b>	<b>33.32</b>	<b>34.56</b>	<b>35.84</b>

\*The Cost of fuel has been taken from Tables 7.8.9 and 7.8.10.

**Table 7.8. 7  
IWC during the Control Period as claimed by UPRVUNL**

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Working Capital	253.62	267.53	277.30	287.69	298.32
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
I W C	31.07	32.77	33.97	35.24	36.54

**(f) Capacity (Fixed) Charges**

Based on above the capacity charges as claimed by UPRVUNL and as approved by the Commission are tabulated herein for the MYT period of F.Y. 2009-10 to 2013-14. Ex-bus energy sent out has been taken from Table 7.8.10.

**Table 7.8. 8  
Fixed Charges as claimed by UPRVUNL and as approved by the Commission**

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	115.78	114.12	-1.66	113.92	108.67	-5.25
Depreciation	67.18	67.20	0.02	67.18	67.20	0.02
Advance against Depreciation	36.82	36.82	0.00	58.04	58.04	0.00
Return on Equity	56.54	56.58	0.04	56.54	56.58	0.04
O & M Expenses	79.37	76.44	-2.93	83.96	80.81	-3.15
Compensation Allowance	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	31.07	30.55	-0.52	32.77	32.15	-0.62
Total :	386.76	381.70	-5.06	412.41	403.44	-8.97
Ex-bus Energy Sent Out (kwh)	2678.00	2678.00	0.00	2678.00	2678.00	0.00
Cost per Unit	1.44	1.43	-0.02	1.54	1.51	-0.03

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	105.77	100.30	-5.47	97.81	92.01	-5.80
Depreciation	67.18	67.20	0.02	67.18	67.20	0.02
Advance against Depreciation	58.04	58.04	0.00	58.04	58.04	0.00
Return on Equity	56.54	56.58	0.04	56.54	56.58	0.04
O & M Expenses	88.82	85.43	-3.39	93.96	90.34	-3.62
Compensation Allowance	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	33.97	33.32	-0.65	35.24	34.56	-0.68
Total :	410.32	400.86	-9.46	408.77	398.73	-10.04
Ex-bus Energy Sent Out (kwh)	2678.00	2678.00	0.00	2678.00	2678.00	0.00
Cost per Unit	1.53	1.50	-0.04	1.53	1.49	-0.04

Particulars	FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	87.73	81.78	-5.95
Depreciation	67.18	67.20	0.02
Advance against Depreciation	58.04	58.04	0.00
Return on Equity	56.54	56.58	0.04
O & M Expenses	99.40	95.51	-3.89
Compensation Allowance	0.00	0.00	0.00
Interest on Working Capital	36.54	35.84	-0.70
Total :	405.43	394.94	-10.49
Ex-bus Energy Sent Out (kwh)	2678.00	2678.00	0.00
Cost per Unit	1.51	1.47	-0.04

### 7.8.2.2 Variable Charges:

#### (a) Weighted Average Cost and Gross Calorific Value of Coal and Oil

The UPRVUNL was advised by the Commission to provide the details of weighted average cost of coal and oil as well as the weighted average calorific values actually incurred / availed during the financial year 2009-10 which is the first year of the MYT. On the basis of details provided by UPRVUNL, the cost of coal and oil as well as calorific values has been worked out as under:

**Table 7.8. 9**  
**Weighted Average Cost and Gross Calorific Value of Coal and Oil for F.Y. 2009-10**

Month	Weighted Average of Landed Cost of Oil	Weighted Average of Gross Calorific value of Oil	Weighted Average of Landed Cost of Coal	Weighted Average of Gross Calorific value of Coal
	(₹/kl)	KCAL/Ltr.	(₹/mt)	(₹KCAL/KG)
April' 2009	23418.33	9966.08	2470.29	3582.45
May' 2009	22434.31	9940.28	2740.00	3955.89
June' 2009	28700.35	9986.01	2703.42	3372.93
July' 2009	33267.20	9871.09	2818.36	3406.07
Aug' 2009	28620.58	9976.59	3119.19	3411.67



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Month	Weighted Average of Landed Cost of Oil	Weighted Average of Gross Calorific value of Oil	Weighted Average of Landed Cost of Coal	Weighted Average of Gross Calorific value of Coal
	(₹/kl)	KCAL/Ltr.	(₹/mt)	(₹KCAL/KG)
Sept' 2009	30502.66	9934.13	3096.42	3550.22
Oct' 2009	33450.87	9917.02	3493.16	3481.06
Nov' 2009	30615.64	9932.20	2446.14	3493.79
Dec' 2009	31075.39	9874.74	2415.49	3482.65
Jan' 2010	31430.44	9966.98	2490.28	3441.39
Feb' 2010	36331.65	9854.61	2450.82	3385.01
Mar' 2010	36331.65	9854.61	1984.61	3476.70
<b>Total:</b>	<b>366179.07</b>	<b>119074.34</b>	<b>32228.18</b>	<b>42039.83</b>
<b>Monthly Weighted Avg.</b>	<b>30514.92</b>	<b>9922.86</b>	<b>2685.68</b>	<b>3503.32</b>

**(b) Variable charge per unit of Generation:**

Based on the operation norms provided in the UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 and the Commission's decisions in foregoing paras, the variable charge per unit of generation for Parichha Extension Power Station for the MYT period of F.Y. 2009-10 to 2013-14 shall be as given in the following table.

**Table 7.8. 10  
Variable charge per unit of generation for Parichha Extension Power Station**

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Capacity	MW	420	420	420	420	420
Availability Factor	%	80	80	80	80	80
Plant Load Factor (PLF)	%	80	80	80	80	80
Gross Station Heat Rate	Kcal/kWh	2500	2500	2500	2500	2500
Auxiliary Energy Consumption	%	9.0	9.0	9.0	9.0	9.0
Gross Generation	MU	2943	2943	2943	2943	2943
Auxiliary Energy Consumption	MU	265	265	265	265	265
Ex-bus Energy Sent Out	MU	2678	2678	2678	2678	2678
Specific Oil Consumption	ml/Kwh	2	2	2	2	2.0
Weighted Average (GCV) of Oil	KCal/Lt.	9923	9923	9923	9923	9923



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Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Price of Oil	₹/KL	30515	32041	33643	35325	37091
Weighted Average (GCV) of Coal	KCal/kg.	3503	3503	3503	3503	3503
Price of Coal	₹/Mt.	2686	2820	2961	3109	3264
Heat Contribution from SFO	Kcal/Kwh	20	20	20	20	20
Total Oil Consumption	KL	5886	5886	5886	5886	5886
Heat Contribution from Coal	Kcal/kWh	2480	2480	2480	2480	2480
Specific Coal Consumption	Kg/Kwh	0.71	0.71	0.71	0.71	0.71
Coal Consumption	MMT	2.083	2.083	2.083	2.083	2.083
Total Cost of Oil @ ₹	₹ in Cr.	17.96	18.86	19.80	20.79	21.83
Total Cost of Coal @ ₹	₹ in Cr.	559.52	587.50	616.87	647.72	680.10
Total Cost of Fuel (Oil & Coal)	₹ in Cr.	577.48	606.36	636.67	668.51	701.93
Rate of Energy Charges from secondary Fuel Oil Ex-bus	Paise/Kwh	6.71	7.04	7.39	7.76	8.15
Rate of Energy Charges from Coal Ex-bus	Paise/Kwh	208.93	219.38	230.35	241.87	253.96
Rate of Energy Charges Ex-bus per Kwh	Paise/Kwh	215.64	226.42	237.74	249.63	262.11

### (c) Adjustment of Rate of Energy Charge on Account of Variation in price or Heat Value of Fuels:

The above variable cost derived by the Commission on the basis of the information provided by the UPRVUNL based on provisional annual accounts report for the Financial Year 2009-10 shall be applicable for the financial year 2009-10 and thereafter the variable cost have been derived after allowing normal increase in the cost of fuel @ 5% per year. However, the beneficiary will make the payment of the variable cost to be derived on the basis of weighted average cost of oil as well as coal including the weighted average Gross Calorific Value of both these elements of fossil fuel to be verified by the Practicing Cost Accountant in support of the same.

**“However, UPRVUNL shall be entitled to recover / adjust any change in fuel cost according to the provisions set out in the**



**Generation Regulations. Fuel price variation shall be claimed based on actual audited cost of fuel and GCV on month to month basis.”**

### 7.8.2.3 Total Charges (Cost):

The overall tariff comprises two parts, Fixed and Variable. The Annual Capacity (Fixed) Charge consists of Interest on loan capital, Depreciation, ROE, O&M, IWC and Compensation Allowance and Energy (Variable) Charges consists coal and secondary oil cost per kWh of the electricity generated. The total charges (costs) as determined by the Commission for Parichha Extension Thermal Power Station for the MYT period of 2009-10 to 2013-14 as against claimed by UPRVUNL are summarized in the table below.

**Table 7.8. 11  
Cost per kWh as claimed by UPRVUNL with those as allowed  
by the Commission**

Particulars	FY 10			FY 11		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	115.78	114.12	-1.66	113.92	108.67	-5.25
Depreciation	67.18	67.20	0.02	67.18	67.20	0.02
A A D	36.82	36.82	0.00	58.04	58.04	0.00
Return on Equity	56.54	56.58	0.04	56.54	56.58	0.04
O & M Expenses	79.37	76.44	-2.93	83.96	80.81	-3.15
Com. Allowance	0.00	0.00	0.00	0.00	0.00	0.00
I W C	31.07	30.55	-0.52	32.77	32.15	-0.62
Fixed Cost (Rs. in Crs.)	386.76	381.70	-5.06	412.41	403.44	-8.97
F. C. per Unit (In Paise)	144	143	-2	154	151	-3
V. C. on Fuel (Rs. in Crs.)	501.56	577.48	75.92	526.64	606.36	79.72
V. C. per Unit (In paise)	187	216	28	197	226	30
Total Cost (Rs. in Crs.)	888.32	959.18	70.86	939.05	1009.79	70.74
Ex-bus Energy Sent Out (kwh)	2678.00	2678.00	0.00	2678.00	2678.00	0.00
Total Cost per Unit (In Paise)	332	358	26	351	377	26



## Multi Year Tariff of UPRVUNL for FY 2009-14

Particulars	FY 12			FY 13		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	105.77	100.30	-5.47	97.81	92.01	-5.80
Depreciation	67.18	67.20	0.02	67.18	67.20	0.02
A A D	58.04	58.04	0.00	58.04	58.04	0.00
Return on Equity	56.54	56.58	0.04	56.54	56.58	0.04
O & M Expenses	88.82	85.43	-3.39	93.96	90.34	-3.62
Com. Allowance	0.00	0.00	0.00	0.00	0.00	0.00
I W C	33.97	33.32	-0.65	35.24	34.56	-0.68
Fixed Cost (Rs. in Crs.)	410.32	400.86	-9.46	408.77	398.73	-10.04
F. C. per Unit (In Paise)	153	150	-4	153	149	-4
V. C. on Fuel (Rs. in Crs.)	552.97	636.67	83.70	580.62	668.51	87.89
V. C. per Unit (In paise)	206	238	31	217	250	33
Total Cost (Rs. in Crs.)	963.29	1037.54	74.25	989.39	1067.24	77.85
Ex-bus Energy Sent Out (kwh)	2678.00	2678.00	0.00	2678.00	2678.00	0.00
Total Cost per Unit (In Paise)	360	387	28	369	399	29

Particulars	FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	87.73	81.78	-5.95
Depreciation	67.18	67.20	0.02
A A D	58.04	58.04	0.00
Return on Equity	56.54	56.58	0.04
O & M Expenses	99.40	95.51	-3.89
Com. Allowance	0.00	0.00	0.00
I W C	36.54	35.84	-0.70
Fixed Cost (Rs. in Crs.)	405.43	394.94	-10.49
F. C. per Unit (In Paise)	151	147	-4
V. C. on Fuel (Rs. in Crs.)	609.65	701.93	92.28
V. C. per Unit (In paise)	228	262	34
Total Cost (Rs. in Crs.)	1015.08	1096.87	81.79
Ex-bus Energy Sent Out (kwh)	2678.00	2678.00	0.00
Total Cost per Unit (In Paise)	379	410	31



**7.9**

**Section - 9**

**Multi Year Tariff**

**for**

**Harduaganj Extension  
Thermal Power Station**

**for**

**FY 2010-11 to 2013-14**



## Multi Year Tariff of UPRVUNL for FY 2009-14

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### 7.9.1 ARR and MYT as according to petition

In the petition, UPRVUNL has proposed the fixed, variable and total charges for the electricity sent out as given in the table below:

**Table 7.9. 1**

<b>Harduaganj Extension</b>	2010-11	2011-12	2012-13	2013-14
Energy Sent out (MU)	3388	3388	3388	3388
Fixed Charges (₹)	1.53	1.72	1.85	1.81
Variable Charges (₹)	2	2.1	2.21	2.32
Total Charges (₹)	3.53	3.82	4.06	4.13
ARR (₹ in Cr.)	1195.96	1294.21	1375.52	1399.24

### 7.9.2 ARR and MYT as determined by the Commission

Harduaganj Extension Thermal Power Plant (2x250 MW) has been proposed to be Commissioned in F Y 2010-11. The petitioner has sought provisional tariff for the MYT period up to F Y 2013-14. The provisional tariff would be revised retrospectively on the Commission's order based on the audited account of actual capital expenditure by the Petitioner.

#### 7.9.2.1 Capacity (Fixed) Charges

##### (a) Provisions under Regulations:

For determination of components of fixed charges for MYT period of FY 2009-10 to 2013-14, the Commission opines that the parameters provided under UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 shall be considered. Hence, the Commission has decided to allow the components of fixed charges as below:

Table 7.9. 2

Components of Fixed Charge	Value	Remark
Return on equity	15.5%	As per the Regulations
Interest on Loans	10.5%	As per financial arrangement with PFC
O & M Expenses	Normative	As per the Regulations
Compensation Allowance	₹ 0.65 lacs /MW	As per the Regulations
Advance Against Depreciation	Zero	As per the Regulations
Interest on working capital	12.25 %	As per the Regulations

**(b) R & M of Plant**

Harduaganj Extension Power Station (2 x 250 MW) is a new plant proposed to be Commissioned in the FY 2010-11.

**(c) Gross Fixed Assets (GFA) and its Components**

The valuation of GFA duly supported with the financing program and the value of NFA is essential to be worked out at the end of each financial year for the determination of Return on Equity, Interest on balance Loans and Depreciation. Therefore, the GFA and NFA at the end of each financial year commencing from FY 2010-11 FY 2013-14 has been worked out along with Equity and Debts taking base figures as provided by UPRVUNL.

Table 7.9. 3  
Calculation of GFA & NFA including financing

HARDUAGANJ EXTENSION Power Station	2010-11	2011-12	2012-13	2013-14
Ope. GFA	2605	2605	2605	2605
Additions	0.00	0.00	0.00	0.00
Clo. GFA	<b>2605</b>	<b>2605</b>	<b>2605</b>	<b>2605</b>
<b>Financing:</b>				
Equity	781.50	781.50	781.50	781.50

<b>HARDUAGANJ EXTENSION Power Station</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Debts (Normative)	<b>1823.50</b>	<b>1823.50</b>	<b>1823.50</b>	<b>1823.50</b>
Opn. Accu Dep.	0	93.9	192.71	345.13
Dep. During the year	93.90	93.90	93.90	93.90
Advance against Depreciation	0.00	4.91	58.52	58.52
Total accu. Dep.	<b>93.90</b>	<b>192.71</b>	<b>345.13</b>	<b>497.55</b>
Net FA	<b>2511.1</b>	<b>2412.29</b>	<b>2259.87</b>	<b>2107.45</b>
<b>Financing:</b>				
Equity	781.50	781.50	781.50	781.50
Debts (Normative)	<b>1729.60</b>	<b>1630.79</b>	<b>1478.37</b>	<b>1325.95</b>

**(d) RoE, Depreciation, O&M and Interest on Loans**

On the basis of decisions of the Commission in forgoing paragraphs and the details of GFA, NFA and financing as above, at the end of each financial year of the control MYT period from FY 2010-11 to 2013-14, RoE, Depreciation, O&M and Interest on Loans are worked out as under:

**Table 7.9. 4  
Details of RoE, Depreciation, O&M and Interest on Loans**

<b>Sl.No.</b>	<b>Particular</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
1	Return on Equity	121.13	121.13	121.13	121.13
2	Depreciation	93.90	93.90	93.90	93.90
3	A A D	0.00	4.91	58.52	58.52
4	Interest on Loans	181.61	171.23	155.23	139.22
5	O & M Expenses	96.20	101.70	107.55	113.70
6	Com. Allowance	0.00	0.00	0.00	0.00
	<b>Total:</b>	<b>492.84</b>	<b>492.88</b>	<b>536.33</b>	<b>526.48</b>

The amount of GFA pertaining to Harduaganj Extension Power Station at the beginning of F.Y. 2010-11 was ₹2605.00 Cr.. The cost of land is nil. The maximum Depreciation as per UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 is permissible to the extent of 90% of the value of the GFA excluding the value of land which is worked out to ₹2344.50 Cr. for Harduaganj Extension Power Station. The accumulated depreciation allowed till the end of FY 2013-14 is ₹497.55 Cr. which is less



than ₹2344.50 Cr. therefore, the Commission has allowed full Depreciation for FY 2009-10 to 2013-14.

**(e) Interest on Working Capital:**

The amount of Working Capital and Interest on Working Capital for the control period of F.Y. 2010-11 to 2013-14 as claimed by the Petitioner and as determined by the Commission are as under:-

**Table 7.9. 5**  
**Annual Receivables of Harduaganj Extension required for calculation of Working Capital:**

Particulars	2010-11	2011-12	2012-13	2013-14
Annual Capacity [Fixed] Charges	492.84	492.88	536.33	526.48
Cost of Fuel	698.14	733.05	769.70	808.19
<b>Total Receivables</b>	<b>1190.98</b>	<b>1225.93</b>	<b>1306.03</b>	<b>1334.66</b>

**Table 7.9. 6**  
**Working Capital as determined by the Commission**

Sl.No.	Particulars	2010-11	2011-12	2012-13	2013-14
1	Cost of Coal for 1 and ½ month	85.86	90.16	94.66	99.40
2	Cost of Secondary Fuel Oil for 2 months	1.87	1.97	2.06	2.17
3	Operation & Maintenance for 1 month	8.02	8.48	8.96	9.48
4	Maintenance Spares @20% O & M Exp.	19.24	20.34	21.51	22.74
5	Receivables equivalent to 2 months charges for sale of electricity	198.50	204.32	217.67	222.45
6	<b>Working Capital</b>	<b>313.49</b>	<b>325.26</b>	<b>344.87</b>	<b>356.23</b>
7	Rate of Interest	12.25	12.25	12.25	12.25
8	I W C	38.40	39.84	42.25	43.64

\*The Cost of fuel has been taken from Tables 7.9.9 and 7.9.10.

**Table 7.9. 7**  
**IWC during the Control Period as claimed by UPRVUNL**

Particulars	2010-11	2011-12	2012-13	2013-14
Working Capital	339.91	363.51	384.18	396.24
Rate of Interest	12.25%	12.25%	12.25%	12.25%
I W C	41.64	44.53	47.06	48.54

**(f) Capacity (Fixed) Charges**

Based on above the capacity charges as claimed by UPRVUNL and as approved by the Commission are tabulated herein for the MYT period of F.Y. 2010-11 to 2013-14. Ex-bus energy sent out has been taken from Table 7.9.10.

**Table 7.9. 8  
Fixed Charges as claimed by UPRVUNL and as approved by the Commission**

Particulars	FY 11			FY 12		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	165.16	181.61	16.45	216.20	171.23	-44.97
Depreciation	93.90	93.90	0.00	93.90	93.90	0.00
Advance against Depreciation	0.00	0.00	0.00	4.91	4.91	0.00
Return on Equity	121.13	121.13	0.00	121.13	121.13	0.00
O & M Expenses	96.21	96.20	-0.01	101.71	101.70	-0.01
Compensation Allowance	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	41.64	38.40	-3.24	44.53	39.84	-4.69
Total :	518.04	531.24	13.20	582.38	532.72	-49.66
Ex-bus Energy Sent Out (kwh)	3388.00	3388.00	0.00	3388.00	3388.00	0.00
Cost per Unit	1.53	1.57	0.04	1.72	1.57	-0.15

Particulars	FY 13			FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	197.11	155.23	-41.88	176.51	139.22	-37.29
Depreciation	93.90	93.90	0.00	93.90	93.90	0.00
Advance against Depreciation	58.52	58.52	0.00	58.52	58.52	0.00
Return on Equity	121.13	121.13	0.00	121.13	121.13	0.00
O & M Expenses	107.53	107.55	0.02	113.68	113.70	0.02

Particulars	FY 13			FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Compensation Allowance	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	47.06	42.25	-4.81	48.54	43.64	-4.90
Total :	625.25	578.58	-46.67	612.28	570.12	-42.16
Ex-bus Energy Sent Out (kwh)	3388.00	3388.00	0.00	3388.00	3388.00	0.00
Cost per Unit	1.85	1.71	-0.14	1.81	1.68	-0.12

### 7.9.2.2 Variable Charges:

#### (a) Weighted Average Cost and Gross Calorific Value of Coal and Oil

The UPRVUNL was advised by the Commission to provide the details of weighted average cost of coal and oil as well as the weighted average calorific values actually incurred / availed during the financial year 2009-10 which is the first year of the MYT. On the basis of details provided by UPRVUNL in respect of Harduaganj Thermal Power Station, the cost of coal and oil as well as calorific values has been worked out as under:

**Table 7.9. 9**  
**Weighted Average Cost and Gross Calorific Value of Coal and Oil for F.Y. 2009-10**

Month	Weighted Average of Landed Cost of Oil	Weighted Average of Gross Calorific value of Oil	Weighted Average of Landed Cost of Coal	Weighted Average of Gross Calorific value of Coal
	(₹/kl)	KCAL/Ltr.	(₹/mt)	(₹KCAL/KG)
April' 2009	19143.22	10048.00	2579.95	3560.00
May' 2009	19143.22	10048.00	2633.71	3722.00
June' 2009	19143.22	10048.00	2559.62	3971.00
July' 2009	25777.13	10048.00	2579.27	4216.00
Aug' 2009	27603.32	10067.00	2484.81	3928.00
Sept' 2009	27603.32	10067.00	2491.43	3910.00
Oct' 2009	35474.12	10067.00	2657.58	3852.00
Nov' 2009	35474.12	10067.00	2731.65	3979.00
Dec' 2009	35474.12	10067.00	3103.69	3868.00

Month	Weighted Average of Landed Cost of Oil	Weighted Average of Gross Calorific value of Oil	Weighted Average of Landed Cost of Coal	Weighted Average of Gross Calorific value of Coal
	(₹/kl)	KCAL/Ltr.	(₹/mt)	(₹KCAL/KG)
Jan' 2010	35474.12	10067.00	3117.03	3796.00
Feb' 2010	35474.12	10067.00	2941.20	3962.00
Mar' 2010	29061.19	10067.00	3144.49	4033.00
<b>Total:</b>	<b>344845.22</b>	<b>120728.00</b>	<b>33024.43</b>	<b>46797.00</b>
<b>Monthly Weighted Avg.</b>	<b>28737.10</b>	<b>10060.67</b>	<b>2752.04</b>	<b>3899.75</b>

**(b) Variable charge per unit of Generation:**

Based on the operation norms provided in the UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 and the Commission's decisions in foregoing paras, the variable charge per unit of generation for Harduaganj Extension Power Station for the MYT period of F.Y. 2010-11 to 2013-14 shall be as given in the following table.

**Table 7.9. 10  
Variable charge per unit of generation for Harduaganj Extension Power Station**

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Capacity	MW	0	500	500	500	500
Availability Factor	%	0	85	85	85	85
Plant Load Factor (PLF)	%	0	85	85	85	85
Gross Station Heat Rate	Kcal/kWh	0	2500	2500	2500	2500
Auxiliary Energy Consumption	%	0.0	9.0	9.0	9.0	9.0
Gross Generation	MU	0	3723	3723	3723	3723
Auxiliary Energy Consumption	MU	0	335	335	335	335
Ex-bus Energy Sent Out	MU	0	3388	3388	3388	3388
Specific Oil Consumption	ml/Kwh	0	1	1	1	1
Weighted Average (GCV) of Oil	KCal/Lt.	10061	10061	10061	10061	10061
Price of Oil	₹/KL	28737	30174	31683	33267	34930
Weighted Average (GCV) of Coal	KCal/kg.	3900	3900	3900	3900	3900
Price of Coal	₹/Mt.	2752	2890	3034	3186	3345

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Heat Contribution from SFO	Kcal/Kwh	0	10	10	10	10
Total Oil Consumption	KL	0	3723	3723	3723	3723
Heat Contribution from Coal	Kcal/kWh	0	2490	2490	2490	2490
Specific Coal Consumption	Kg/Kwh	0.00	0.64	0.64	0.64	0.64
Coal Consumption	MMT	0.00	2.38	2.38	2.38	2.38
Total Cost of Oil @ ₹	₹ in Cr.	0.00	11.23	11.80	12.39	13.00
Total Cost of Coal @ ₹	₹ in Cr.	0.00	686.91	721.25	757.32	795.18
Total Cost of Fuel (Oil & Coal)	₹ in Cr.	0.00	698.14	733.05	769.70	808.19
Rate of Energy Charges from secondary Fuel Oil Ex-bus	Paise/Kwh	0.00	3.32	3.48	3.66	3.84
Rate of Energy Charges from Coal Ex-bus	Paise/Kwh	0.00	202.75	212.88	223.53	234.71
Rate of Energy Charges Ex-bus per Kwh	Paise/Kwh	0.00	206.06	216.37	227.18	238.54

**(c) Adjustment of Rate of Energy Charge on Account of Variation in price or Heat Value of Fuels:**

The above variable cost derived by the Commission on the basis of the information provided by the UPRVUNL based on provisional annual accounts report for the Financial Year 2009-10 shall be applicable for the financial year 2009-10 and thereafter the variable cost have been derived after allowing normal increase in the cost of fuel @ 5% per year. However, the beneficiary will make the payment of the variable cost to be derived on the basis of weighted average cost of oil as well as coal including the weighted average Gross Calorific Value of both these elements of fossil fuel to be verified by the Practicing Cost Accountant in support of the same.

**“However, UPRVUNL shall be entitled to recover / adjust any change in fuel cost according to the provisions set out in the Generation Regulations. Fuel price variation shall be claimed based on actual audited cost of fuel and GCV on month to month basis.”**

### 7.9.2.3 Total Charges (Cost):

The overall tariff comprises two parts, Fixed and Variable. The Annual Capacity (Fixed) Charge consists of Interest on loan capital, Depreciation, ROE, O&M, IWC and Compensation Allowance and Energy (Variable) Charges consists coal and secondary oil cost per kWh of the electricity generated. The total charges (costs) as determined by the Commission for Harduaganj Extension Thermal Power Station for the MYT period of 2010-11 to 2013-14 as against claimed by UPRVUNL are summarized in the table below.

**Table 7.9. 11**  
**Cost per kWh as claimed by UPRVUNL with those as allowed by the Commission**

Particulars	FY 11			FY 12		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	165.16	181.61	16.45	216.20	171.23	-44.97
Depreciation	93.90	93.90	0.00	93.90	93.90	0.00
A A D	0.00	0.00	0.00	4.91	4.91	0.00
Return on Equity	121.13	121.13	0.00	121.13	121.13	0.00
O & M Expenses	96.21	96.20	-0.01	101.71	101.70	-0.01
Com. Allowance	0.00	0.00	0.00	0.00	0.00	0.00
I W C	41.64	38.40	-3.24	44.53	39.84	-4.69
Fixed Cost (₹ in Cr..)	518.04	531.24	13.20	582.38	532.72	-49.66
F. C. per Unit (In Paise)	153	157	4	172	157	-15
V. C. on Fuel (₹ in Cr..)	678.94	698.14	19.20	712.88	733.05	20.17
V. C. per Unit (In paise)	200	206	6	210	216	6
Total Cost (₹ in Cr..)	1196.98	1229.39	32.41	1295.26	1265.77	-29.49
Ex-bus Energy Sent Out (kwh)	3388.00	3388.00	0.00	3388.00	3388.00	0.00
<b>Total Cost per Unit (In Paise)</b>	<b>353</b>	<b>363</b>	<b>10</b>	<b>382</b>	<b>374</b>	<b>-9</b>



## Multi Year Tariff of UPRVUNL for FY 2009-14

Particulars	FY 13			FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	197.11	155.23	-41.88	176.51	139.22	-37.29
Depreciation	93.90	93.90	0.00	93.90	93.90	0.00
A A D	58.52	58.52	0.00	58.52	58.52	0.00
Return on Equity	121.13	121.13	0.00	121.13	121.13	0.00
O & M Expenses	107.53	107.55	0.02	113.68	113.70	0.02
Com. Allowance	0.00	0.00	0.00	0.00	0.00	0.00
I W C	47.06	42.25	-4.81	48.54	43.64	-4.90
Fixed Cost (₹ in Cr..)	625.25	578.58	-46.67	612.28	570.12	-42.16
F. C. per Unit (In Paise)	185	171	-14	181	168	-12
V. C. on Fuel (₹ in Cr..)	748.53	769.70	21.17	785.95	808.19	22.24
V. C. per Unit (In paise)	221	227	6	232	239	7
Total Cost (₹ in Cr..)	1373.78	1348.28	-25.50	1398.23	1378.30	-19.93
Ex-bus Energy Sent Out (kwh)	3388.00	3388.00	0.00	3388.00	3388.00	0.00
<b>Total Cost per Unit (In Paise)</b>	<b>405</b>	<b>398</b>	<b>-8</b>	<b>413</b>	<b>407</b>	<b>-6</b>



**7.10**

**Section - 10**

**Multi Year Tariff**

**for**

**Parichha Extension Stage - II  
Thermal Power Station**

**for**

**FY 2010-11 to 2013-14**



## Multi Year Tariff of UPRVUNL for FY 2009-14

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### 7.10.1 ARR and MYT as according to petition

In the petition, UPRVUNL has proposed the fixed, variable and total charges for the electricity sent out as given in the table below:

**Table 7.10. 1**

<b>Parichha Extension Stage- II</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>
Energy Sent out (MU)	3388	3388	3388	3388
Fixed Charges (₹)	1.44	1.69	1.69	1.67
Variable Charges (₹)	1.91	2.01	2.11	2.21
Total Charges (₹)	3.35	3.7	3.8	3.88
ARR (₹ in Cr.)	1134.98	1253.56	1287.44	1314.54

### 7.10.2 ARR and MYT as determined by the Commission

The petitioner has claimed provisional tariff starting from FY 2009-10. As the year has passed and no effective capacity has been added in the year therefore, the Commission decides to consider the MYT period for provisional tariff for Parichha Extension- Stage – II as FY 2010-11 to 2013-14.

#### 7.10.2.1 Capacity (Fixed) Charges

##### (a) Provisions under Regulations:

For determination of components of fixed charges for MYT period of FY 2010-11 to 2013-14, the Commission opines that the parameters provided under UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 shall be considered. Hence, the Commission has decided to allow the components of fixed charges as below:



Table 7.10. 2

Components of Fixed Charge	Value	Remark
Return on equity	15.5%	As per the Regulations
Interest on Loans	10.5%	As per financial arrangement with PFC
O & M Expenses	Normative	As per the Regulations
Compensation Allowance	₹ 0.65 lacs /MW	As per the Regulations
Advance Against Depreciation	Zero	As per the Regulations
Interest on working capital	12.25 %	As per the Regulations

**(b) R & M of Plant**

Parichha Extension Stage – II Power Station (2 x 250 MW) being a new plant no scheme of R&M Refurbishment is proposed by the Petitioner and therefore, no amount on this account has been considered while calculation the Aggregate Revenue Requirement of the Power Station.

**(c) Gross Fixed Assets (GFA) and its Components**

The valuation of GFA duly supported with the financing program and the value of NFA is essential to be worked out at the end of each financial year for the determination of Return on Equity, Interest on balance Loans and Depreciation. Therefore, the GFA and NFA at the end of each financial year commencing from FY 2010-11 to FY 2013-14 has been worked out alongwith Equity and Debts taking base figures as provided by UPRVUNL..

Table 7.10. 3  
Calculation of GFA & NFA including financing

PARICHHA EXTENSION STAGE-II	2010-11	2011-12	2012-13	2013-14
Ope. GFA	2356	2356	2356	2356
Additions	0.00	0.00	0.00	0.00
Clo. GFA	<b>2356</b>	<b>2356</b>	<b>2356</b>	<b>2356</b>
Financing:				

<b>PARICHHA EXTENSION STAGE-II</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Equity	706.72	706.72	706.72	706.72
Debts (Normative)	<b>1649.28</b>	<b>1649.28</b>	<b>1649.28</b>	<b>1649.28</b>
Open. Accu Dep.	0	84.9	213.73	351.75
Dep. During the year	84.90	84.90	84.90	84.90
Advance against Depreciation	0.00	43.93	53.12	53.12
Total accu. Dep.	<b>84.90</b>	<b>213.73</b>	<b>351.75</b>	<b>489.77</b>
Net FA	<b>2271.1</b>	<b>2142.27</b>	<b>2004.25</b>	<b>1866.23</b>
<b>Financing:</b>				
Equity	706.72	706.72	706.72	706.72
Debts (Normative)	<b>1564.38</b>	<b>1435.55</b>	<b>1297.53</b>	<b>1159.51</b>

**(d) RoE, Depreciation, O&M and Interest on Loans**

On the basis of decisions of the Commission in forgoing paragraphs and the details of GFA, NFA and financing as above, at the end of each financial year of the control MYT period from FY 2010-11 to 2013-14, RoE, Depreciation, O&M and Interest on Loans are worked out as under:

**Table 7.10. 4**  
**Details of RoE, Depreciation, O&M and Interest on Loans**

<b>Sl.No.</b>	<b>Particular</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
1	Return on Equity	109.54	109.54	109.54	109.54
2	Depreciation	84.90	84.90	84.90	84.90
3	A A D	0.00	43.93	53.12	53.12
4	Interest on Loans	164.26	150.73	136.24	121.75
5	O & M Expenses	96.20	101.70	107.55	113.70
6	Com. Allowance	0.00	0.00	0.00	0.00
	<b>Total:</b>	<b>454.90</b>	<b>490.80</b>	<b>491.35</b>	<b>483.01</b>

The amount of GFA pertaining to Parichha Extension Stage-II Power Station at the beginning of F.Y. 2010-11 was ₹2356.00 Cr.. The cost of land is nil. The maximum Depreciation as per UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 is permissible to the extent of 90% of the value of the GFA excluding the value of land which is worked out to ₹2120.40 Cr. for Parichha Extension Stage-II Power Station. The accumulated depreciation allowed till the end of FY 2013-14 is



₹489.77 Cr. which is less than ₹2120.40 Cr. therefore, the Commission has allowed full Depreciation for FY 2010-11 to 2013-14.

**(e) Interest on Working Capital:**

The amount of Working Capital and Interest on Working Capital for the control period of F.Y. 2009-10 to 2013-14 as claimed by the Petitioner and as determined by the Commission are as under:-

**Table 7.10. 5**  
**Annual Receivables of Parichha Extension Stage-II Power Station required for calculation of Working Capital:**

Particulars	2010-11	2011-12	2012-13	2013-14
Annual Capacity [Fixed] Charges	454.90	490.80	491.35	483.01
Cost of Fuel	758.43	796.35	836.17	877.98
<b>Total Receivables</b>	<b>1213.33</b>	<b>1287.16</b>	<b>1327.52</b>	<b>1360.99</b>

**Table 7.10. 6**  
**Working Capital as determined by the Commission**

Sl.No.	Particulars	2010-11	2011-12	2012-13	2013-14
1	Cost of Coal for 1 and ½ month	93.31	97.98	102.88	108.02
2	Cost of Secondary Fuel Oil for 2 months	1.99	2.09	2.19	2.30
3	Operation & Maintenance for 1 month	8.02	8.48	8.96	9.48
4	Maintenance Spares @20% O & M Exp.	19.24	20.34	21.51	22.74
5	Receivables equivalent to 2 months charges for sale of electricity	202.23	214.54	221.25	226.83
6	<b>Working Capital</b>	<b>324.78</b>	<b>343.42</b>	<b>356.79</b>	<b>369.37</b>
7	Rate of Interest	12.25	12.25	12.25	12.25
8	I W C	39.79	42.07	43.71	45.25

\*The Cost of fuel has been taken from Tables 7.10.9 and 7.10.10.

**Table 7.10. 7**  
**IWC during the Control Period as claimed by UPRVUNL**

Particulars	2010-11	2011-12	2012-13	2013-14
Working Capital	323.36	351.17	364.15	376.32
Rate of Interest	12.25%	12.25%	12.25%	12.25%
I W C	39.61	43.02	44.61	46.10

**(f) Capacity (Fixed) Charges**

Based on above the capacity charges as claimed by UPRVUNL and as approved by the Commission are tabulated herein for the MYT period of F.Y. 2010-11 to 2013-14. Ex-bus energy sent out has been taken from Table 7.10.10.

**Table 7.10. 8**  
**Fixed Charges as claimed by UPRVUNL and as approved by the Commission**

Particulars	FY 11			FY 12		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	150.43	164.26	13.83	190.31	150.73	-39.58
Depreciation	84.92	84.90	-0.02	84.92	84.90	-0.02
Advance against Depreciation	0.00	0.00	0.00	43.93	43.93	0.00
Return on Equity	109.54	109.54	0.00	109.54	109.54	0.00
O & M Expenses	96.21	96.20	-0.01	101.71	101.70	-0.01
Compensation Allowance	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	39.61	39.79	0.18	43.02	42.07	-0.95
Total :	480.71	494.69	13.98	573.43	532.87	-40.56
Ex-bus Energy Sent Out (kwh)	3388.00	3388.00	0.00	3388.00	3388.00	0.00
Cost per Unit	1.42	1.46	0.04	1.69	1.57	-0.12

Particulars	FY 13			FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	173.63	136.24	-37.39	157.12	121.75	-35.37
Depreciation	84.92	84.90	-0.02	84.92	84.90	-0.02
Advance against Depreciation	53.12	53.12	0.00	53.12	53.12	0.00
Return on Equity	109.54	109.54	0.00	109.54	109.54	0.00
O & M Expenses	107.53	107.55	0.02	113.68	113.70	0.02



## Multi Year Tariff of UPRVUNL for FY 2009-14

Particulars	FY 13			FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Compensation Allowance	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	44.61	43.71	-0.90	46.10	45.25	-0.85
Total :	573.35	535.06	-38.29	564.48	528.26	-36.22
Ex-bus Energy Sent Out (kwh)	3388.00	3388.00	0.00	3388.00	3388.00	0.00
Cost per Unit	1.69	1.58	-0.11	1.67	1.56	-0.11

### 7.10.2.2 Variable Charges:

#### (a) Weighted Average Cost and Gross Calorific Value of Coal and Oil

The UPRVUNL was advised by the Commission to provide the details of weighted average cost of coal and oil as well as the weighted average calorific values actually incurred / availed during the financial year 2009-10 which is the first year of the MYT. On the basis of details provided by UPRVUNL, in respect of Parichha Extension Thermal Power Station the cost of coal and oil as well as calorific values has been worked out as under:

**Table 7.10. 9**  
**Weighted Average Cost and Gross Calorific Value of Coal and Oil for F.Y. 2009-10**

Month	Weighted Average of Landed Cost of Oil	Weighted Average of Gross Calorific value of Oil	Weighted Average of Landed Cost of Coal	Weighted Average of Gross Calorific value of Coal
	(₹/kl)	KCAL/Ltr.	(₹/mt)	(₹KCAL/KG)
April' 2009	23418.33	9966.08	2470.29	3582.45
May' 2009	22434.31	9940.28	2740.00	3955.89
June' 2009	28700.35	9986.01	2703.42	3372.93
July' 2009	33267.20	9871.09	2818.36	3406.07
Aug' 2009	28620.58	9976.59	3119.19	3411.67
Sept' 2009	30502.66	9934.13	3096.42	3550.22
Oct' 2009	33450.87	9917.02	3493.16	3481.06

Month	Weighted Average of Landed Cost of Oil	Weighted Average of Gross Calorific value of Oil	Weighted Average of Landed Cost of Coal	Weighted Average of Gross Calorific value of Coal
	(₹/kl)	KCAL/Ltr.	(₹/mt)	(₹KCAL/KG)
Nov' 2009	30615.64	9932.20	2446.14	3493.79
Dec' 2009	31075.39	9874.74	2415.49	3482.65
Jan' 2010	31430.44	9966.98	2490.28	3441.39
Feb' 2010	36331.65	9854.61	2450.82	3385.01
Mar' 2010	36331.65	9854.61	1984.61	3476.70
<b>Total:</b>	<b>366179.07</b>	<b>119074.34</b>	<b>32228.18</b>	<b>42039.83</b>
<b>Monthly Weighted Avg.</b>	<b>30514.92</b>	<b>9922.86</b>	<b>2685.68</b>	<b>3503.32</b>

**(b) Variable charge per unit of Generation:**

Based on the operation norms provided in the UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 and the Commission's decisions in foregoing paras, the variable charge per unit of generation for Parichha Extension Stage-II Power Station for the MYT period of F.Y. 2010-11 to 2013-14 shall be as given in the following table.

**Table 7.10. 10**  
**Variable charge per unit of generation for Parichha Extension Stage-II Power Station**

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Capacity	MW	0	500	500	500	500
Availability Factor	%	0	85	85	85	85
Plant Load Factor (PLF)	%	0	85	85	85	85
Gross Station Heat Rate	Kcal/kWh	0	2500	2500	2500	2500
Auxiliary Energy Consumption	%	0.0	9.0	9.0	9.0	9.0
Gross Generation	MU	0	3723	3723	3723	3723
Auxiliary Energy Consumption	MU	0	335	335	335	335
Ex-bus Energy Sent Out	MU	0	3388	3388	3388	3388
Specific Oil Consumption	ml/Kwh	0	1	1	1	1
Weighted Average (GCV) of Oil	KCal/Lt.	9923	9923	9923	9923	9923
Price of Oil	₹/KL	30515	32041	33643	35325	37091
Weighted Average (GCV) of Coal	KCal/kg.	3503	3503	3503	3503	3503



## Multi Year Tariff of UPRVUNL for FY 2009-14

Description	Unit	2009-10	2010-11	2011-12	2012-13	2013-14
Price of Coal	₹/Mt.	2686	2820	2961	3109	3264
Heat Contribution from SFO	Kcal/Kwh	0	9	9	9	9
Total Oil Consumption	KL	0	3723	3723	3723	3723
Heat Contribution from Coal	Kcal/kWh	0	2491	2491	2491	2491
Specific Coal Consumption	Kg/Kwh	0.00	0.71	0.71	0.71	0.71
Coal Consumption	MMT	0.00	2.65	2.65	2.65	2.65
Total Cost of Oil @ ₹	₹ in Cr.	0.00	11.93	12.53	13.15	13.81
Total Cost of Coal @ ₹	₹ in Cr.	0.00	746.50	783.83	823.02	864.17
Total Cost of Fuel (Oil & Coal)	₹ in Cr.	0.00	758.43	796.35	836.17	877.98
Rate of Energy Charges from secondary Fuel Oil Ex-bus	Paise/Kwh	0.00	3.52	3.70	3.88	4.08
Rate of Energy Charges from Coal Ex-bus	Paise/Kwh	0.00	220.34	231.35	242.92	255.07
Rate of Energy Charges Ex-bus per Kwh	Paise/Kwh	0.00	223.86	235.05	246.80	259.14

### (c) Adjustment of Rate of Energy Charge on Account of Variation in price or Heat Value of Fuels:

The above variable cost derived by the Commission on the basis of the information provided by the UPRVUNL in respect of Parichha Extension Thermal Power Station based on provisional annual accounts report for the Financial Year 2009-10 shall be applicable for the financial year 2010-11 and thereafter the variable cost have been derived after allowing normal increase in the cost of fuel @ 5% per year. However, the beneficiary will make the payment of the variable cost to be derived on the basis of weighted average cost of oil as well as coal including the weighted average Gross Calorific Value of both these elements of fossil fuel to be verified by the Practicing Cost Accountant in support of the same.

**“However, UPRVUNL shall be entitled to recover / adjust any change in fuel cost according to the provisions set out in the Generation Regulations. Fuel price variation shall be claimed based on actual audited cost of fuel and GCV on month to month basis.”**

### 7.10.2.3 Total Charges (Cost):

The overall tariff comprises two parts, Fixed and Variable. The Annual Capacity (Fixed) Charge consists of Interest on loan capital, Depreciation, ROE, O&M, IWC and Compensation Allowance and Energy (Variable) Charges consists coal and secondary oil cost per kWh of the electricity generated. The total charges (costs) as determined by the Commission for Parichha Extension Stage-II Thermal Power Station for the MYT period of 2010-11 to 2013-14 as against claimed by UPRVUNL are summarized in the table below.

**Table 7.10. 11  
Cost per kWh as claimed by UPRVUNL with those as allowed  
by the Commission**

Particulars	FY 11			FY 12		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	150.43	164.26	13.83	190.31	150.73	-39.58
Depreciation	84.92	84.90	-0.02	84.92	84.90	-0.02
A A D	0.00	0.00	0.00	43.93	43.93	0.00
Return on Equity	109.54	109.54	0.00	109.54	109.54	0.00
O & M Expenses	96.21	96.20	-0.01	101.71	101.70	-0.01
Com. Allowance	0.00	0.00	0.00	0.00	0.00	0.00
I W C	39.61	39.79	0.18	43.02	42.07	-0.95
Fixed Cost (₹ in Cr..)	480.71	494.69	13.98	573.43	532.87	-40.56
F. C. per Unit (In Paise)	142	146	4	169	157	-12
V. C. on Fuel (₹ in Cr..)	647.96	758.43	110.47	680.36	796.35	115.99
V. C. per Unit (In paise)	191	224	33	201	235	34
Total Cost (₹ in Cr..)	1128.67	1253.12	124.45	1253.79	1329.22	75.43
Ex-bus Energy Sent Out (kwh)	3388.00	3388.00	0.00	3388.00	3388.00	0.00
<b>Total Cost per Unit (In Paise)</b>	<b>333</b>	<b>370</b>	<b>37</b>	<b>370</b>	<b>392</b>	<b>22</b>



## Multi Year Tariff of UPRVUNL for FY 2009-14

Particulars	FY 13			FY 14		
	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)	As claimed by UPRVUNL	As determined by the Commission	Diff. (if any)
Interest on Loan	173.63	136.24	-37.39	157.12	121.75	-35.37
Depreciation	84.92	84.90	-0.02	84.92	84.90	-0.02
A A D	53.12	53.12	0.00	53.12	53.12	0.00
Return on Equity	109.54	109.54	0.00	109.54	109.54	0.00
O & M Expenses	107.53	107.55	0.02	113.68	113.70	0.02
Com. Allowance	0.00	0.00	0.00	0.00	0.00	0.00
I W C	44.61	43.71	-0.90	46.10	45.25	-0.85
Fixed Cost (₹ in Cr..)	573.35	535.06	-38.29	564.48	528.26	-36.22
F. C. per Unit (In Paise)	169	158	-11	167	156	-11
V. C. on Fuel (₹ in Cr..)	714.38	836.17	121.79	750.10	877.98	127.88
V. C. per Unit (In paise)	211	247	36	221	259	38
Total Cost (₹ in Cr..)	1287.73	1371.23	83.50	1314.58	1406.24	91.66
Ex-bus Energy Sent Out (kwh)	3388.00	3388.00	0.00	3388.00	3388.00	0.00
<b>Total Cost per Unit (In Paise)</b>	<b>380</b>	<b>405</b>	<b>25</b>	<b>388</b>	<b>415</b>	<b>27</b>



## **8. OTHER PROVISIONS**

### **(A) Recovery of Water Cess and Tax on Income etc.**

In addition to the above tariff UPRVUNL is allowed to recover the payment of statutory charges like water cess, cost of water, payment to Pollution Control Board, rates and taxes, FBT and Regulatory Fee paid to the Commission, on production of details of actual payments made and duly supported with the certificate of the Statutory Auditors. The Petitioner has claimed certain additional charges as variable charges towards other fuel related costs, station supplies, lubricants and consumables critical to the generating stations as separate pass through on actuals. The same is allowed for the consideration period of MYT subject to verification of audited accounts at the time when true up would be considered by the Commission. However, the payment of finance and bank charges as claimed by the Petitioner will not be allowed separately as these charges are considered as part and parcel of the acquired loans to be invested for addition of Gross Fixed Assets and therefore the same shall be claimed as Fixed Charges in the same manner as is applicable for the recovery of interest during construction. Similarly the payment of Service Tax on services provided by CISF shall not be allowed separately because the same has already been included in norms of O & M Expenses.

### **(B) Expenses towards implementation of ABT:**

The Petitioner has also claimed additional expenses towards implementation of ABT. The expenditure has already been incurred by UPRVUNL. The Commission has allowed expenses towards



implementation of ABT as capitalized expenditure in financial year 2009-10.

**(C) Elements of Arrears of Sixth Pay Commission :**

The element of Sixth Pay Commission has been considered in approved O & M expenditures for the financial years 2009-10 to 2013-14 as per the UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009. However, the payment of arrears for the period from 1st January, 2006 to March 31, 2009 shall be claimed by UPRVUNL from the beneficiaries on providing the details of actual payments in the following manner:

- a. Arrears for the period 1st Jan, 2006 to 31st March, 2006 in F.Y. 2010-11.
- b. Arrears for the period 1st April, 2006 to 31st March, 2007 in F.Y. 2011-12.
- c. Arrears for the period 1st April, 2007 to 31st March, 2008 in F.Y. 2012-13.
- d. Arrears for the period 1st April, 2008 to 31st March, 2009 in F.Y. 2013-14.

**(D) Incentive :**

Incentive shall be calculated according to Regulations 23 of UPERC (Terms and Conditions of Generation tariff) Regulations, 2009. Incentive does not form a component of tariff. It would be recoverable only at the end of the year based on the PLF actually achieved by the concerned power station and according to guidelines set out in Regulation 23.

**(E) Billing & Payment :**

Billing and Payment of Capacity Charges shall be done under provisions of Regulation 30 of UPERC (Terms and Conditions of Generation Tariff) Regulations, 2009.



Based on Auxiliary Energy Consumption, Station Heat Rate, Specific Secondary Fuel Oil Consumption, Fuel Cost and GCV as approved in the foregoing paragraphs, the Rate of Energy Charges shall be computed according to Regulation 22 of UPERC (Terms and Conditions of Generation Tariff) Regulations, 2009 and its amendment thereof.

For billing purposes, total energy charge shall be equal to the rate of energy multiplied by actual energy sent out and with ABT it shall be the rate of energy charge multiplied by scheduled energy.

**(F) Payment of Dues :**

The petitioner shall endeavour to realize dues from the Respondents and it may approach the Commission, for default in payments, for necessary relief including proposal for Regulation of Supply associated with alternative sale potential of such regulated power under proviso 2 Regulation 26 of the Generation Regulations.

**(G) Truing up of Capital Expenditure and Tariff**

- (i) The Commission shall carry out true up exercise along with the tariff petition filed for the next tariff period with respect to the Capital Expenditure incurred up to 31.03.2014, as admitted by the Commission after prudence check at the time of true up provided that the UPRVUNL may in its discretion make an application before the Commission one more time prior to 2013-14 for revision of tariff.
- (ii) UPRVUNL shall make an application as per Appendix - I of UPERC (Terms & Conditions of Generation Tariff) Regulation, 2009 for carrying out true up exercise.



- (iii) UPRVUNL shall submit details of duly audited and certified Capital Expenditure and Additional Capital Expenditure incurred for the period from 01.04.2009 to 31.03.2014 for the purpose of true up.
- (iv) Any over or under recovery shall be adjusted retrospectively with simple interest at the rate equal to short term PLR of SBI as on 1<sup>st</sup> April of the respective year

**(H) Commission's Directives**

- (i) It is directed to UPRVUNL to undertake a detailed financial viability analysis of vintage projects in the current year before submitting any R & M proposal for approval of the Commission.
- (ii) It is directed that UPRVUNL put up diligent efforts to enhance the skill of work force through appropriate training programs.
- (iii) The UPRVUNL has not entered into Power Purchase Agreements (PPAs) with the Respondents for the control period of MYT or even for earlier period. As these Generating Stations are state owned and the generated power is utilized by the people of the state through DISCOMs the MYT has been approved by the Commission for up to FY 2013-14 on petitions filed by UPRVUNL even though the required PPAs are not in place. Nevertheless, **UPPCL is directed to submit the PPAs with UPRVUNL for at least the period up to FY 2013-14 for the approval of the Commission within three months from the date of this order. UPRVUNL shall ensure timely submission of PPAs as per the Commission's directive.**

## 9. APPROVED TARIFF AND ARR – AT A GLANCE

Table 9. 1

### Tariff

(Cost in paisa per unit)

SL NO.	NAME OF POWER STATIONS	2009-10			2010-11		
		FIXED COST	VAR. COST	TOTAL	FIXED COST	VAR. COST	TOTAL
1	ANPARA 'A'	53	109	162	54	115	168
2	ANPARA 'B'	86	112	198	122	117	240
3	OBRA 'A'	94	160	254	107	169	276
4	OBRA 'B'	61	146	207	85	152	237
5	PANKI	114	283	397	117	293	410
6	HARDUAGANJ	181	278	459	304	287	591
7	PARICHHA	94	258	352	105	267	373
8	PARICHHA EXTN.	143	216	358	151	226	377
9	HARDUAGANJ EXTN.	0	0	0	157	206	363
10	PARICHHA EXTN. STAGE-II	0	0	0	146	224	370

SL NO.	NAME OF POWER STATIONS	2011-12			2012-13		
		FIXED COST	VAR. COST	TOTAL	FIXED COST	VAR. COST	TOTAL
1	ANPARA 'A'	55	120	175	57	126	184
2	ANPARA 'B'	100	123	223	98	129	227
3	OBRA 'A'	143	178	321	104	177	281
4	OBRA 'B'	111	158	269	105	165	270
5	PANKI	124	300	424	133	310	443
6	HARDUAGANJ	255	287	541	218	302	521
7	PARICHHA	105	277	382	104	287	391
8	PARICHHA EXTN.	150	238	387	149	250	399
9	HARDUAGANJ EXTN.	157	216	374	171	227	398
10	PARICHHA EXTN. STAGE-II	157	235	392	158	247	405

SL NO.	NAME OF POWER STATIONS	2013-14		
		FIXED COST	VAR. COST	TOTAL
1	ANPARA 'A'	59	133	192
2	ANPARA 'B'	96	136	232
3	OBRA 'A'	104	185	289
4	OBRA 'B'	101	172	273
5	PANKI	135	321	455
6	HARDUAGANJ	208	313	521
7	PARICHHA	101	298	399
8	PARICHHA EXTN.	147	262	410
9	HARDUAGANJ EXTN.	168	239	407
10	PARICHHA EXTN. STAGE-II	156	259	415

Table 9. 2

**Annual Revenue Requirement**

(Cost in paisa per unit ARR in ₹ Cr. Energy in MU)

SL NO.	NAME OF POWER STATIONS	2009-10			2010-11		
		Ex-bus Energy S/O	Total Cost	ARR	Ex-bus Energy S/O	Total Cost	ARR
1	ANPARA 'A'	4040	162	654	4040	168	681
2	ANPARA 'B'	6517	198	1291	5431	240	1302
3	OBRA 'A'	1638	254	416	1476	276	407
4	OBRA 'B'	5178	207	1071	5435	237	1286
5	PANKI	983	397	390	1001	410	411
6	HARDUAGANJ	611	459	280	456	591	269
7	PARICHHA	1023	352	360	1043	373	389
8	PARICHHA EXTN.	2678	358	959	2678	377	1010
9	HARDUAGANJ EXTN.	0	0	0	3388	363	1229
10	PARICHHA EXTN. STAGE-II	0	0	0	3388	370	1253
		22668		5423	28336		8237



Multi Year Tariff of UPRVUNL for FY 2009-14

SL NO.	NAME OF POWER STATIONS	2011-12			2012-13		
		Ex-bus Energy S/O	Total Cost	ARR	Ex-bus Energy S/O	Total Cost	ARR
1	ANPARA 'A'	4040	175	709	4040	184	742
2	ANPARA 'B'	6517	223	1455	6517	227	1479
3	OBRA 'A'	1324	321	426	1900	281	534
4	OBRA 'B'	5783	269	1558	6052	270	1635
5	PANKI	1034	424	438	1055	443	467
6	HARDUAGANJ	851	541	460	1038	521	540
7	PARICHHA	1079	382	413	1133	391	443
8	PARICHHA EXTN.	2678	387	1038	2678	399	1067
9	HARDUAGANJ EXTN.	3388	374	1266	3388	398	1348
10	PARICHHA EXTN. STAGE-II	3388	392	1329	3388	405	1371
		30081		9091	31189		9627

SL NO.	NAME OF POWER STATIONS	2013-14		
		Ex-bus Energy S/O	Total Cost	ARR
1	ANPARA 'A'	4040	192	776
2	ANPARA 'B'	6517	232	1513
3	OBRA 'A'	1957	289	566
4	OBRA 'B'	6408	273	1751
5	PANKI	1092	455	497
6	HARDUAGANJ	1105	521	576
7	PARICHHA	1205	399	480
8	PARICHHA EXTN.	2678	410	1097
9	HARDUAGANJ EXTN.	3388	407	1378
10	PARICHHA EXTN. STAGE-II	3388	415	1406
		31778		10040



## 10. IMPLEMENTATION OF ORDER

This order shall be reckoned to have come into effect from 01.04.2009 and shall remain effective till 31.03.2014 for the Multi Year Tariff period of F.Y. 2009-10 to 2013-14. UPRVUNL is entitled to raise the bills as per the tariff order under provisions of UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009.

(Meenakshi Singh)  
Member

(Shree Ram)  
Member

(Rajesh Awasthi)  
Chairman

Place : Lucknow

Dated: 20.01.2011