2015

MYT PETITION FOR DETERMINATION OF TARIFF FOR FY 2014-15 TO 2018-19

UP RAJYA VIDYUT UTPADAN NIGAM LTD

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1. INTRODUCTION

1.1 Rationale

The Electricity Act, 2003 (Act 36 of 2003) came into force with effect from 10.6.2003 and the previous Acts governing the electricity supply in the country viz. The Indian Electricity Act, 1910 (9 of 1910), the Electricity (Supply) Act, 1948 (54 of 1948), and the Electricity Regulatory Commissions Act, 1998 have been repealed. The provisions of the UP Electricity Reform Act, 1999 (Uttar Pradesh Act 24 of 1999) to the extent not inconsistent with the provisions of the Electricity Act, 2003, however, continue to apply to Uttar Pradesh.

As per Section 10 (2) of the Electricity Act, 2003 (hereinafter referred to as the Act), UPRVUNL shall supply electricity to the Licensees (UPPCL or its successors). Section 61 of the Electricity Act, 2003 deals with Tariff Regulations

Section 62 (1) of the Act provides that the Appropriate Commission shall determine the tariff in accordance with the provisions of the Act, inter-alia, for supply of electricity by a generating company to a distribution licensee. Further, in accordance with Section 86 (1) (a) of the Act, UPERC shall determine the tariff of generation of power at stations owned by the UPRVUNL. Section 86 (1) (b) further mandates UPERC to regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees. Accordingly this petition is being submitted by the state generating utility for determination of tariff of its power stations.

1.2 UPRVUNL

Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited (UPRVUNL), hereinafter referred to as the Petitioner is a company incorporated on 25th August 1980 with the principal object of generating electricity. Petitioner implemented commissioning of 2x210 MW thermal power stations at Unchahar. In February 1992 this power station was transferred to NTPC.

Consequent to the implementation of power sector reforms in the State where under, amongst others, the activities of generation, transmission, distribution and retail supply of electricity carried out by UPSEB have been restructured and UPSEB was unbundled into Uttar Pradesh Power Corporation Limited (UPPCL), Uttar Pradesh Jal Vidyut Nigam Limited (UPJVNL) and UP Rajya Vidyut Utpadan Nigam Limited vide the Uttar Pradesh Electricity Reforms Transfer Scheme, 2000 notification No 149/P-1/2000-24, Lucknow dated January 14th, 2000. As part of the scheme all thermal generating stations as set out in Schedule A to the transfer scheme were transferred to and vested in the Petitioner

The Transfer Scheme assigned a value of Rs. 6009.63 crs (Prov) to gross fixed assets as on March 31, 1999. The Scheme determined the equity capital as Rs. 1053.71 crs. As part of the Scheme certain liabilities (listed in Schedule 'D' to the Scheme) were retained by GoUP

The provisional Scheme was modified by GoUP vide notification no. 348/P-1/2001-24 dated 25 January 2001, which made the Transfer Scheme of the year 2000 effective from 14 January 2000. The modified Scheme provided that value of gross fixed assets as Rs. 6270.60 crs and increased the equity amount to Rs. 1511.44 crs.

In pursuance of GOUP notification no., 2740/P-1/2003-24-14P/2003 dated 12th August 2003, UPPCL was further divided into five successor companies, with UPPCL as Transco and four successor distribution companies (hereinafter referred to as "licensees"), which are as follows:

- Paschhimanchal Vidyut Vitran Nigam Limited, Meerut - (Meerut DisCom)
- Dakshinanchal Vidyut Vitran Nigam Limited, Agra - (Agra DisCom)
- Madhyanchal Vidyut Vitran Nigam Limited, Lucknow - (Lucknow DisCom)
- Poorvanchal Vidyut Vitran Nigam Limited, Varanasi - (Varanasi DisCom)

UPRVUNL is a wholly owned company of the Government of Uttar Pradesh. Pursuant to the Uttar Pradesh Electricity Reforms Act, 1999 and the statutory transfer scheme notified there under, the Petitioner was vested with the activities of generation and sale of electricity from thermal generation assets in the State of Uttar Pradesh. All the electricity generated by the Petitioner is sold to Uttar Pradesh Power Corporation Limited (hereinafter referred to as the 'UPPCL'), which under the aforementioned transfer scheme is vested with the transmission and distribution of electricity in the State of Uttar Pradesh**.**

Presently UPRVUNL owns, maintains and operates the following generating stations-

Table: Generation Capacities of the UPRVUNL

S No	Thermal Power Station	Unit No.	Installed Capacity	Derated Capacity	Date of Commercial Operation
1	**Anpara – A**	**1**	210 MW	210 MW	01-Jan-87
2		**2**	210 MW	210 MW	01-Aug-87
3		**3**	210 MW	210 MW	01-Apr-89
4	**Anpara – B**	**4**	500 MW	500 MW	01-Mar-94
5		**5**	500 MW	500 MW	01-Oct-94
6	**Obra – A**	**1**	50 MW	50 MW	15-Aug-67

S No	Thermal Power Station	Unit No.	Installed Capacity	Derated Capacity	Date of Commercial Operation
7		**2**	50 MW	50 MW	11-Mar-68
8		**3**	50 MW	Nil	13-Oct-68
9		**4**	50 MW	Nil	16-Jul-69
10		**5**	50 MW	Nil	30-Jul-71
11		**6**	100 MW	Nil	04-Oct-73
12		**7**	100 MW	94 MW	14-Dec-74
13		**8**	100 MW	94 MW	01-Jan-76
14		**9**	200 MW	200 MW	15-Mar-80
15		**10**	200 MW	200 MW	06-Mar-79
16	**Obra – B**	**11**	200 MW	200 MW	14-Mar-78
17		**12**	200 MW	200 MW	29-May-81
18		**13**	200 MW	200 MW	29-Jul-82
19		**1**	32 MW	Nil	NA
20	**Panki**	**2**	32 MW	Nil	NA
21		**3**	110 MW	105 MW	29-Jan-77
22		**4**	110 MW	105 MW	29-May-77
23		**1**	50 MW	Nil	21-Apr-68
24		**2**	50 MW	Nil	23-Jan-69
25		**3**	55 MW	Nil	Mar-72
26	**Harduaganj**	**4**	55 MW	Nil	18-Sep-72
27		**5**	60 MW	60 MW	14-May-77
28		**6**	60 MW	Nil	26-Oct-77
29		**7**	110 MW	105 MW	Aug-78
30	**Harduaganj Extn.**	**8**	250 MW	250 MW	01-Feb-12
31		**9**	250 MW	250 MW	10-Oct-13
32	**Parichha**	**1**	110 MW	110 MW	01-Oct-85
33		**2**	110 MW	110 MW	25-Feb-85
34	**Parichha Extn**	**3**	210 MW	210 MW	24-Nov-06
35		**4**	210 MW	210 MW	01-Dec-07
36	**Parichha**	**5**	250 MW	250 MW	17-Jul-12

S No	Thermal Power Station	Unit No.	Installed Capacity	Derated Capacity	Date of Commercial Operation
37	**Extn. Stage 2**	**6**	250 MW	250 MW	18-Apr-13
	Total	**37**	**5544**	**4933**	

- *Obra U#6 was deleted from capacity w.e.f. 12.01.2011*
- *Harduaganj U#3 was deleted from capacity w.e.f. 20.11.10*

1.3 Multi Year Tariff Regulations, 2009

The Hon'ble Commission notified the Uttar Pradesh Electricity Regulatory Commission (Terms and Conditions of Generation Tariff) Regulations, 2009 (hereinafter referred to as the 'Regulations') which came into effect from 01.04.2009 and were for the control period of FY 2009-10 to 2013-14. Such regulations recognizing the vintage of certain power stations of the Petitioner namely Obra A Thermal Power Station (TPS), Obra B TPS, Panki TPS, Harduaganj TPS and Parichha TPS, and accordingly provided relaxed operating norms in respect of such stations.

In the interim period it was expected that the plants would undergo Refurbishment and Renovation and Modernisation, so that by the end of the MYT period the machines would run at improved efficiency levels.

Further, in a departure from previous regulations, the 2009 regulations provides that the aforementioned vintage stations namely Obra A TPS, Obra B TPS, Panki TPS, Harduaganj TPS and Parichha TPS may approach the Commission for adjustment in O&M expenses on account of establishment expenses, insurance charges and repair and maintenance based on annual audited financial statements and prudence check

1.4 MYT Petition for FY 2009-10 to 2013-14

The Petitioner submitted its Multi Year Tariff Petition for FY 2009-10 to 2013-14 on January 20, 2010, being Petition No. 647-656 of 2010 for all its generating units. In the petition the UPRVUNL had submitted the details of the ongoing and proposed schemes towards the Renovation and Modernisation of its vintage stations and had applied for its capitalization in the MYT period and tariff consequences were to follow accordingly. The energy charges and fixed charges were claimed as per the principles stipulated in the regulations.

A significant feature of the MYT Petition was that station wise petitions were filed by the Petitioner unlike previous years filings which were filed for the company as a whole

1.5 MYT Order and its Broad Features

The Hon'ble Commission decided the MYT Petition No. 647 to 656 of 2010 vide its order dated January 20, 2011. The Hon'ble Commission allowed the capitalisation of the R&M programme as per the original estimates submitted by the Petitioner in the MYT Petition. However, the Hon'ble Commission reduced the allowable debt of Obra BTPS to the extent of Rs. 268.48 crore. The Hon'ble Commission further declined payment of finance and bank charges as claimed by the Petitioner stating that it shall 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.

In a significant departure from the earlier orders, the Hon'ble Commission based on petition by UPRVUNL had considered the allowance of other fuel related expenses like station supplies, lubricants, consumables and pollution cess based on actual amounts incurred.

1.6 Review Petition and Additional Submission dated September 22, 2011

The Petitioner filed a Review Petition seeking review of the MYT (2009-10 to 2013-14) order dated 21.1.2011 in Petition No. 647- 656 of 2010 on the following issues:

i. Rescheduling of additional capitalization of approved R&M schemes and relaxation of Norms of Operation due to poor contract execution.
ii. Cascading effect on additional capitalization of R&M Schemes due to consideration of depreciation as deemed loan repayment.
iii. Reduction of allowable debt of Obra 'B'.
iv. Re-computation of Interest of Working Capital
v. Finance and Bank Charges.

However considering more slippages in other stations (namely Anpara BTPS, Obra APTS and Harduaganj TPS), the Petitioner filed an additional submission on September 22, 2011 seeking relaxation in operating norms and suitable adjustment for capitalization/decapitalisation due to delay in start/completion of Renovation and Modernisation schemes in respect of Anpara BTPS, Obra APTS and Harduaganj TPS. The Petitioner in such additional submission had prayed for the trans-positioning of the capitalization in respect of the Renovation and Modernisation schemes and had sought relaxation of operating norms in respect of Target Plant Availability Factor, Target Plant Load Factor, Gross Station Heat Rate, Auxiliary Energy Consumption and Specific Fuel Oil Consumption norms.

1.7 Review Order dated March 20, 2012

The Hon'ble Commission in the Review Order of MYT dated March 20, 2012 has granted partial relief to the UPRVUNL. It has appreciated the dilemma of the Petitioner and allowed the trans-positioning of the capitalisation of the Renovation and Modernisation schemes in respect of Anpara BTPS, Obra APTS and Harduaganj TPS. Further in line with the Petition made by UPRVUNL, the capitalization in respect of Obra BTPS was wholly withdrawn during the MYT period given the uncertainty surrounding its completion. However it did not transpose the improvement trajectories in respect of operating norms namely Target Plant Availability Factor, Target Plant Load Factor, Gross Station Heat Rate, Auxiliary Energy Consumption and Specific Fuel Oil Consumption.

1.8 Appeal filed against the Review Order

The UPRVUNL filed an appeal on the following grounds against the Review Order dated March 20, 2012:

- For considering the relaxation in operating norms in respect of Obra ATPS, Obra BTPS and Harduaganj TPS till the completion of the renovation and modernization at these stations.
- Improvement trajectory should not be applied unless the renovation and modernization is completed at these vintage stations. In the interim period the relaxed norms applicable at the start of the control period (2009-10) may be applicable for such stations. (Only in case of Obra ATPS, Obra BTPS and Harduaganj.
- Allowance of bank and finance charges.

However, later on an application for withdrawal of the appeal was filed by UPRVUNL and the Hon'ble Appellate Tribunal for Electricity thereby disposed off the said appeal in its order dated 17.05.2013 stating *"the Appeal is dismissed as withdrawn"*.

1.9 Amendment to Regulations

The Hon'ble Commission on March 20, 2012 notified the Uttar Pradesh Electricity Regulatory Commission (Terms and Conditions of Generation Tariff) (First Amendment) Regulations 2012 which inter-alia provided for the truing up of capital expenditure and tariff by amending Regulation 5 of the Principal Regulations.

Regulation 5 (5) has been added to the Principal Regulations as below:

"Truing up of Capital Expenditure and Tariff:

(i) The Commission shall carry out truing up exercise along with the tariff petition filed for the next tariff period, with respect to the capital expenditure including additional capital expenditure incurred up to 31-3-2014, as admitted by the Commission after prudence check at the time of truing up:

Provided that the generating company may in its discretion make an application before the Commission one more time prior to 2013-14 for revision of tariff.

(ii) The generating company shall make an application, as per Appendix I to these regulations, for carrying out truing up exercise in respect of the generating station or any of its units or block of units thereof by 31-10-2014.

(iii) The generating company shall submit for the purpose of truing up, details of capital expenditure and additional expenditure and additional capital expenditure incurred for the period from 1-4-2009 to 31-3-2014, duly audited and certified by the auditors.

(iv) Where after the truing up the tariff recovered exceeds the tariff approved by the Commission under these regulations the generating company shall refund to the beneficiaries, the excess amount so recovered along with simple interest at the rate equal to short-term Prime Lending Rate of State Bank of India prevailing as on 1st April of the respective year.

(v) Where after the truing up the tariff recovered is less than the tariff approved by the Commission under these regulations the generating company shall recover from the beneficiaries, the under-recovered amount along with simple interest at the rate equal to short-term Prime Lending Rate of State Bank of India prevailing as on 1st April of the respective year.

(vi) The amount under-recovered or over-recovered, along with simple Interest at the rate equal to short-term Prime Lending Rate of State Bank of India prevailing as on 1st April of the respective year, shall be recovered or refunded by the generating company, in six equal monthly instalments starting within three months from the date of the tariff order issued by the Commission after the truing up exercise." (Emphasis supplied)

The amendment to the Regulations inter-alia provide for the following:

- Filing of an interim truing up petition in respect of capital expenditure incurred and consequential tariff before the final truing up
- Final truing up in respect of capital expenditure incurred and consequential tariff for the period upto FY 2013-14.

1.10 Filing of True-up Petition for FY 2009-10, FY 2010-11, Actual true-up for FY 2011-12 & Revised estimates for FY 2012-13 & FY 2013-14

The Petitioner filed an interim True-up petition for additional capitalisation based on audited accounts for FY 2009-10 & 2010-11 and Actual accounts for FY 2012-13. In its petition the UPRVUNL claimed the final Truing-up for FY 2009-10, FY 2010-11, Actual truing-up for FY 2011-12 and projection of revised estimates for FY 2012-13 & FY 2013-14. The energy charges and fixed charges for FY 2012-13 & FY 2013-14 were claimed as per the principles stipulated in the regulations. The Petitioner in the true-up petition had claimed a reduction of its Annual Revenue Requirement so as to pass on the variation to the beneficiaries by a reduction in generation tariff, on account of lower O&M expenses and transposition of the R&M milestones as approved in the MYT order dated 20th March, 2012.

1.11 True-up Order

The Hon'ble Commission decided the True-up Petition vide its order dated November 14, 2013. The Hon'ble Commission allowed the final True-up for FY 2009-10, FY 2010-11, Actual true-up for FY 2011-12 and approved revised estimates for FY 2012-13 & FY 2013-14 based on the submissions made by UPRVUNL. The Hon'ble Commission also allowed the capitalisation of the R&M programme as per the revised estimates submitted by the Petitioner in the True-up Petition. The Hon'ble Commission restated the Annual Revenue Requirement for FY 2009-10 to FY 2013-14 based on the revised submissions made by the Petitioner in its true-up petition.

1.12 Filing of Final True-up Petition for FY 2011-12, Actual true-up for FY 2012-13 and Revised estimates for FY 2013-14

The Petitioner filed an interim True-up petition for additional capitalisation based on audited accounts for FY 2011-12 and Actual accounts for FY 2012-13. In its petition the UPRVUNL claimed the final Truing-up for FY 2011-12, Actual truing-up for FY 2012-13 and projection of revised estimates for FY 2013-14. The energy charges and fixed charges for FY 2013-14 were claimed as per the principles stipulated in the regulations. The Petitioner in the true-up petition had claimed a reduction of its Annual Revenue Requirement so as to pass on the variation to the beneficiaries by a reduction in generation tariff, on account of lower O&M expenses and transposition of the R&M milestones as approved in the MYT order dated 20th March, 2012.

A hearing on this matter was held with the Hon'ble Commission on 22.07.2014 in which the UPPCL opposed the petition stating that as per the Regulations, the Commission shall carry out the truing-up exercise along-with the tariff petition file for the next tariff period with respect to the capital expenditure including additional capital expenditure incurred upto 31.03.2014. In response to which the Hon'ble Commission directed UPRVUNL to the file a fresh true-up petition along with the MYT petition and accordingly disposed off the current petition vide its Order dated 21st August, 2014.

1.13 Multi Year Tariff Regulations, 2014

The Hon'ble UPERC has framed the "Uttar Pradesh Electricity Regulatory Commission (Terms and Conditions of Generation Tariff) Regulations, 2014" in exercise of powers conferred under section 181 read with Section 61 of the Electricity Act, 2003. The same were issued by the Hon'ble Commission on 16.12.2014 vide Notification No.:;UPERC/Secy/Generation Regulations, 2014/1620. The Generation Tariff Regulations, 2014 were stated to be reckoned to have come into force with effect from 01.04.2014 and would be in force for 5 years up to 31.3.2019.

The Hon'ble Commission had initiated the process of framing the generation tariff principles for the third control period encompassing the financial years 2014-19 by issuing the Discussion Paper towards Generation Tariff Regulations, 2014. On 03.09.2014, the Hon'ble Commission published the Draft Generation Tariff Regulations for FY 2014-19 period and conducted public hearing in this matter after inviting comments from various stakeholders. The Petitioner had also participated in the stakeholder consultation process by submitting detailed comments, suggestions and objections on the Draft Generation Tariff Regulations, 2014 and had elaborated its views in the Public Hearing by presenting a power point presentation.

1.14 Review Petition Filed against the Multi Year Tariff Regulations, 2014

The Petitioner was aggrieved by Generation Tariff Regulations, 2014 of this Hon'ble Commission and filed a Petition for Review of Uttar Pradesh Electricity Regulatory Commission (Terms and Conditions of Generation Tariff) Regulations, 2014 u/s 150 of the UPERC (Conduct Of Business) Regulations, 2004 on the following points:

- Allowance of Interest during Construction (IDC), Incidental Expenditure during Construction (IEDC) read along with Clause 21: Controllable and Uncontrollable Factors.
- Provision for Annual Truing Up
- Norms of Operation for Old / Existing Stations namely Anpara A, Anpara B and Parichha Extn
- Other Fuel Related Charges
- Foreign Exchange Rate Variation (FERV)
- Stablisation Period

1.15 Order of Hon'ble Commission against the Review Petition Filed

The Hon'ble Commission in its order dated 29th April, 2015 stated "*that issues, on which the reviews have been sought by UPRVUNL, the Commission finds that neither they fall under the category of new and important matter or evidence which after exercise of due diligence was not within the knowledge of the petitioner nor fall under the category which could not be produced before the Commission earlier. The same also cannot be treated on account of some mistake or error apparent on the face of the record. The Regulations have been finalized by the Commission after following the due process after hearing all the concerned parties. The details and reasons have been provided through the explanatory memorandum and statement of reasons which has also been declared with the regulations. So invoking the jurisdiction of review for representing the earlier rejected claims is neither justified nor acceptable under the law. As such, explicitly there are no sufficient reasons for review on other issues*"

Consequently the Hon'ble Commission dismissed the review petition filed against the Uttar Pradesh Electricity Regulatory Commission (Terms and Conditions of Generation Tariff) Regulations, 2014. Further in the process of hearing the Commission stated that the Petitioner can bring forth the present issues in the Multi Year Tariff Petition to be filed under the Clause 14 "Power to Remove Difficulties" and Clause 15 "Power to Relax" of the Generation Regulations, 2014. Accordingly the petitioner has raised the issues in the subsequent paragraphs on which it is seeking some relaxation from the Hon'ble Commission.

1.16 Annual Payment of Statutory Charges like Water Cess, Payment to Pollution Control Board, Regulatory Fee, etc

In the Multi Year Tariff Petition for FY 2014-15 to FY 2018-19, the Petitioner had sought recovery of 'duties, taxes payable to Government or local authorities (like Pollution Cess, rates and taxes including Fringe Benefit Tax, Forest Cess) and fees payable to UPERC as separate pass through in tariff as these are payments being statutory in nature and imposed by law"

The Hon'ble Commission in Para 25 (iv) (c) of UPERC (Terms & Conditions of Generation Tariff) Regulations 2014 has allowed such items –

"The expenses on regulatory fee, payment to pollution control board, impact of pay revision, capital spares, cost of water and water cess shall be paid additionally at actuals subject to prudence check"

Thus the Petitioner seeks recovery of such items as separate pass through basis as and when they are incurred and paid.

1.17 Finance & Bank Charges

The Finance charges, guarantee fees and bank charges remain un-recovered as the regulations do not provide for them explicitly. These costs are incidental with rising of debt. The Hon'ble Commission had allowed such expenses in the Tariff Order for FY 2008-09. The Petitioner cannot project such expenses as the likely impact & incidence of charges varies from situation to situation. For example, in the past the GoUP has levied guarantee fees on some loans guaranteed by it, however in other cases it has also given a waiver on guarantee fees

The Petitioner requests the Hon'ble Commission to allow such charges as separate pass through in tariff based on actual payment.

1.18 Payment of Service Tax on CISF Services

The power stations of the Petitioner are important assets which need to be manned and protected. The responsibility of such safety and security has been entrusted to premier defence organization CISF.

Consequent upon replacement of "Commercial Concern" in definition of various taxable services by a "Person" through the changes made in the Finance Bill 2006, CISF services provided against consideration have been covered under the category of "Security Agency Service" as defined under Section 65(94) read with Section 65 (105) (w) of the Finance Act, 1994 for payment of Service Tax w.e.f 01.05.2006.

However since CISF provides its services to PSUs and other client organizations under the directions of Ministry of Home Affairs and cost of deployment is also recovered from the user PSUs/client organizations in such a manner as the Central Government may from time to time specify, in accordance with the provisions contained in Rule 73 of the CISF Rule 2001

In this regard CISF and Ministry of Home Affairs had moved an application with Ministry of Finance for Exemption from Service tax on the security services provided by it.

After examination in consultation with Ministry of Finance, Department of Revenue it has now been decided by Ministry of Home Affairs that Service Tax is payable by CISF w.e.f. from 1st April 2009.

Service tax is to be paid by the service provider (CISF) who in turn would bill the service receiver (Petitioner in this case) for the service tax amount.

The current service tax rate is 14% and the annual impact of service tax would be considerable. The Petitioner requests the Hon'ble Commission to allow recovery of such service tax (additionally other than from O&M) as separate pass through as service tax is a statutory liability.

1.19 Expenses towards implementation of ABT

The Hon'ble Commission has recommended for implementation of Availability Based Tariff (ABT) regime in the state. Accordingly UPRVUNL has geared up to prepare the necessary requisite infrastructure for its adoption and its smooth running. In this regard it has made significant investments are given in table below:

The Hon'ble Commission in Para 22 (7) of the UPERC (Terms & Conditions of Generation Tariff) Regulations 2014 has stated:

"Cost on implementation of ABT shall be allowed as additional capital expenditure in tariff"

Accordingly the Petitioner's requests the Hon'ble Commission to allow capitalization of such expenditure as and when incurred in the control period.

1.20 Provision for Annual Truing Up

The Hon'ble Commission has not accepted the suggestion made by the Petitioner during the stakeholder consultation process in respect of the provision for annual truing up. Further, the provision for mid-term review performance / truing up which was provided in the Draft Generation Tariff Regulations, 2014 as well as in the CERC (Terms and Conditions of Tariff) Regulations, 2014 has not been allowed in the Final Generation Tariff Regulations, 2014.

In this regard, the Petitioner seeks to make the following submissions for consideration by this Hon'ble Commission:

a. Annual truing up is critical to ensure that there is no overhang on the balance sheets and there is no burden of carrying cost on the beneficiaries resulting in higher tariffs in later years.

Illustration:

- If suppose there is a revenue gap of Rs. 100 crore in 2014-15, carrying cost as per regulations is allowable @ 13.5% and true up and recovery thereof would be allowed after the terminal year of the control period i.e., in 2019-20.
- Recovery of Rs. 100 crore would have risen to Rs. 188.36 crore thus imposing additional burden on the beneficiaries towards carrying cost.

Further, since five years truing up would be conducted in a single year, it would also lead to tariff shock as well as taxation imbalances to the Petitioner.

b. In view of the above, the provision for Annual Truing up is a common feature across the Tariff Regulations framed by Other State Commissions. An exhaustive list of 15 states in this regard was placed before the Hon'ble Commission along with the comments, suggestions and objections filed by the Petitioner during the stakeholder consultation process. The Petitioner craves leave to refer to such list during the proceedings in this case.

c. The Generation Tariff Regulations notified by the Hon'ble Commission on 31.3.2009 for the second control period encompassing the financial years 2009-10 to 2013-14 read along with its Amendment No. 1 dated 20.03.2012 provided for truing up at the terminal year of the control period. In addition to the terminal year truing up, the Regulations provided for one additional truing up at any time during the control period. The Generation Tariff Regulations, 2009 also provided for truing up /adjustment in O&M expenses on account of establishment expenses, insurance charges and repair and maintenance towards the vintage power stations of the Petitioner namely Obra A, Obra B, Panki, Parichha and Harduaganj.

d. The Draft UPERC Generation Tariff Regulations, 2014 as well as the CERC (Terms and Conditions of Tariff) Regulations, 2014 notified on 21.02.2014 provided for a Mid Term Review in FY 2016-17. However, such a clause has been withdrawn in the Final Generation Tariff Regulations, 2014 on the grounds that "since Commission allows capital expenditure on a scheme-wise basis and the cost of the same is included in the fixed cost at the time of truing-up". The provision of allowing capital expenditure scheme at the time of truing up, is itself against the principle of MYT tariff. More importantly, the annual truing up is being requested by the Petitioner to avoid burden of under-recovery of tariff along with carrying cost on the beneficiaries in later years and to avoid tax imbalances. However, this aspect has not been analysed by the Hon'ble Commission in the Statement of Reasons issued along with the final Generation Tariff Regulations, 2014.

e. In view of the above, the Hon'ble Commission is urged to allow the petitioner for filing of Annual Truing up, both on the capital side as well as revenue side.

1.21 Norms of Operation for Old / Existing Stations namely Anpara A, Anpara B and Parichha Extn

The Petitioner urges that there should be No Revision in Norms in respect of Existing Projects and Projects under Development as it would undermine the Viability of Projects envisaged at the time of Project Planning.

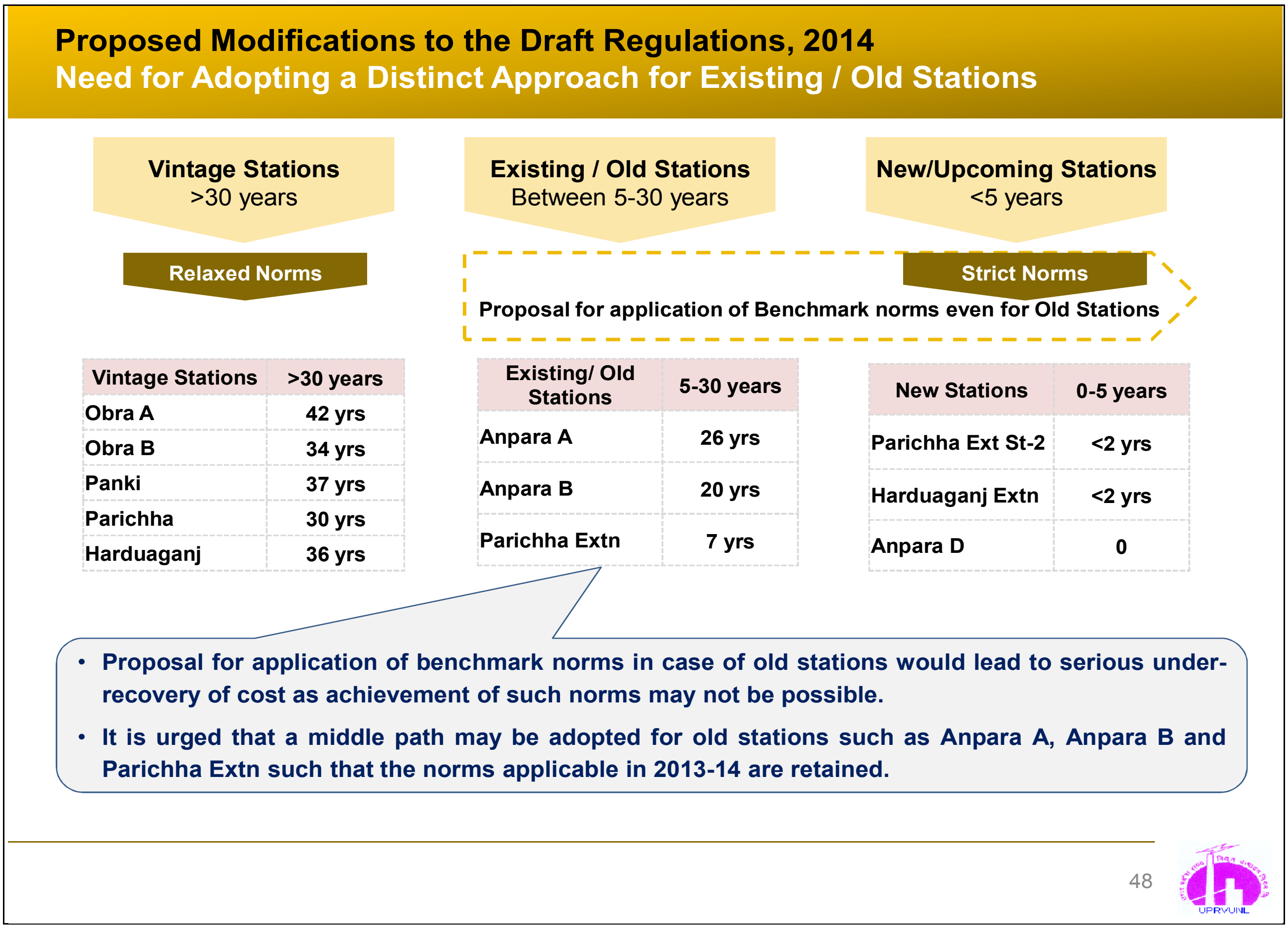
In this regard, the Petitioner seeks to rely on the following facts and submissions for consideration by this Hon'ble Commission:

(i) The Hon'ble Commission considering the age and vintage of certain power stations of the Petitioner namely Obra A, Obra B, Panki, Parichha and Harduaganj had provided special dispensation in terms of relaxed norms from FY 2008-09 onwards. The Generation Tariff Regulations, 2009 applicable for FY 2009-14 control period also provided relaxed norms and the Generation Tariff Regulations, 2014 has extended such special dispensation for the third control period i.e., FY 2014-19 period. **The sole criteria for according special status to the aforementioned stations, was the age of such plants.**

(ii) Even the CERC has accorded special dispensation in terms of relaxed norms for certain stations of NTPC, NLC and DVC in the tariff regulations framed by it.

(iii) The Hon'ble Commission in the Generation Tariff Regulations, 2014 has approved benchmark norms uniformly for all other stations (be it existing / under development / planning stage), without considering the age of the existing power plants of the Petitioner. The existing power plants such as Anpara A and Anpara B are between 20 to 26 years old. Achieving benchmark norms at such stations is not possible due to ageing of boiler, turbine and auxiliaries and also due to technological changes.

(iv) The Petitioner in the comments, suggestions and objections filed during the stakeholder consultation process had emphasized on the need for special treatment for existing stations which has not been analyzed / considered in the final Generation Tariff Regulations, 2014. The Petitioner craves leave to refer to such submissions during the proceedings in this case. A snaphot of the same is presented below:



Proposed Modifications to the Draft Regulations, 2014
Need for Adopting a Distinct Approach for Existing / Old Stations

Vintage Stations >30 years — Relaxed Norms

Existing / Old Stations Between 5-30 years

New/Upcoming Stations <5 years — Strict Norms

Proposal for application of Benchmark norms even for Old Stations

Vintage Stations	>30 years
Obra A	42 yrs
Obra B	34 yrs
Panki	37 yrs
Parichha	30 yrs
Harduaganj	36 yrs

Existing/ Old Stations	5-30 years
Anpara A	26 yrs
Anpara B	20 yrs
Parichha Extn	7 yrs

New Stations	0-5 years
Parichha Ext St-2	<2 yrs
Harduaganj Extn	<2 yrs
Anpara D	0

- Proposal for application of benchmark norms in case of old stations would lead to serious under-recovery of cost as achievement of such norms may not be possible.
- It is urged that a middle path may be adopted for old stations such as Anpara A, Anpara B and Parichha Extn such that the norms applicable in 2013-14 are retained.

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(v) The Petitioner had stated that the Proposal for application of benchmark norms in case of old /existing stations would lead to serious under-recovery of cost as achievement of such norms may not be possible. The Petitioner had urged that that a middle path may be adopted for old stations such as Anpara A, Anpara B and Parichha Extn such that the norms applicable in 2013-14 are retained.

(vi) The following table depicts the changes in the norms of operation applicable to the existing / old stations such as Anpara A, Anpara B and Parichha Extn as applicable in FY 2014-19 period vis-à-vis the norms of operations applicable under the Generation Tariff Regulations 2009 for FY 2009-14 period:

Station	Parameter	2009 Regulations	2014 Regulations	Overall Under-recovery of Energy Charges
Anpara A	Plant Availability Factor (%)	80%	85%	(4.22%)
	Plant Load Factor (%)	80%	85%	

Station	Parameter	2009 Regulations	2014 Regulations	Overall Under-recovery of Energy Charges
	Station Heat Rate (kCal/kWh)	2500	2475	
	Specific Oil Consumption (ml/kWh)	2.00	0.75	
Anpara B	Plant Availability Factor (%)	80%	85%	(6.64%)
	Plant Load Factor (%)	80%	85%	
	Station Heat Rate (kCal/kWh)	2450	2410	
	Specific Oil Consumption (ml/kWh)	2.00	0.75	
	Auxiliary Energy Consumption (%)	7.00%	5.25%	
Parichha Extn	Plant Availability Factor (%)	80%	85%	(4.75%)
	Plant Load Factor (%)	80%	85%	
	Station Heat Rate (kCal/kWh)	2500	2475	
	Specific Oil Consumption (ml/kWh)	2.00	0.75	
	Auxiliary Energy Consumption (%)	9.50%	9.00%	

It is stated that the revision of norms of operation for the aforementioned 3 stations has led to an under-recovery of around Rs. 150 crore in FY 2014-15.

(vii) In view of the above, it is urged that a middle path may be adopted for old stations such as Anpara A, Anpara B and Parichha Extn such that the norms applicable in 2013-14 are retained for 2014-19 period.

1.22 Stablisation Period

The Petitioner requests the Hon'ble Commission to continue with the stablisation period norms applicable to units coming back on the generation stream after Renovation and Modernization of units, as were applicable in case of 2009-14 regulations of the Commission. It is humbly prayed that the stablisation period norms for old units coming back on the generation stream after R&M may not be dispensed with.

1.23 Imported Coal Usage

The Petitioner submits that as per the correspondence received from the Ministry of Power which submits that the complete coal requirement of the Petitioner cannot be materialized from Coal India Limited. Also the quality of indigenous coal received by the Petitioner has been declining over the years.

It may be appreciated that imported coal although has a better GCV than domestic coal, however, the price of imported coal and its calorific value vis-à-vis the price and GCV of domestic coal are not linearly proportional. The same effectively means that usage of imported coal will essentially lead to increase in cost of generation of the plant. The decision for usage of imported coal is not based on the cost-benefit analysis but is rather an outcome of the limitations of choice which is purely beyond the control of the Petitioner. Therefore it is hereby requested that the cost of imported coal should be allowed as pass through.

1.24 Incentive

The Petitioner would be raising bills for recovery of incentive for which it is entitled to in terms of the Tariff regulations of the Commission for the control period of FY 2014-15 to FY 2018-19. Accordingly, for the same the Petitioner is not making any specific submission

1.25 Taxes on Income

The tariff regulations issued by the Commission provides that tax on the income streams of the generating company from its core business shall be computed as an expense and shall be permitted to be recovered. The income tax shall be recovered through the mechanism of tax escrow account.

ANPARA 'A' TPS

ANPARA 'A' THERMAL POWER STATION

MULTI YEAR TARIFF PETITION

FOR

DETERMINATION OF TARIFF FOR

CONTROL PERIOD

FY 2014-15 to FY 2018-19

UP RAJYA VIDYUT UTPADAN NIGAM LTD

1. ANNUAL REVENUE REQUIREMENT & MULTI-YEAR TARIFF PETITION OF 'ANPARA A TPS'

The following sections detail the Annual Revenue Requirement and Tariff Petition of Anpara ATPS for the five year control period of FY 2014-15 to FY 2018-19

1.1. Annual Capacity (Fixed Charges) Charges

As per tariff regulations the annual capacity (fixed) charges consist of

a. Interest on Loan Capital

b. Depreciation including Advance against Depreciation

c. Return on Equity

d. Operation and maintenance expenses including insurance and

e. Interest on Working Capital

f. Compensation Allowance

1.1.1. Gross Fixed Assets

Regulation 19.3 of the UPERC Generation Regulations, 2014 provide the basis for determination of final tariff of an existing project based on the admitted capital cost which shall include:

a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;
b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 22; and
c) Expenditure on account of renovation and modernization as admitted by this Commission in accordance with Regulation 22.

Accordingly the Petitioner for the purpose of this MYT petition for the control period FY 2014-15 to FY 2018-19 has considered the opening GFA balance as on 01.04.2014 equal to the closing GFA balance submitted in the final true-up petition for FY 2013-14 filed along

with the MYT petition being in line with the clause 19.3(c) of the Generation Regulations, 2014.

In this MYT Tariff Petition, the Petitioner is submitting the detailed asset wise list of its fixed assets for the control period FY 2014-15 to FY 2018-19. The Petitioner has considered the opening Gross Fixed Assets for FY 2014-15 on the basis of Final Accounts of FY 2013-14 and have subsequently added the yearly capitalizations for FY 2014-15 to FY 2018-19 as considered in the foregoing sections based on the proposed R&M/Refurbishment & Up-rating schemes, if any.

Accordingly the following table depicts the proposed Gross Fixed Asset balances along with the yearly capitalizations (if any) for the Control period FY 2014-15 to FY 2018-19:

Table: - Gross Fixed Assets Summary - FY 2014-15 to FY 2018-19

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	4,855.82	4,855.82	4,855.82	4,855.82	4,855.82
Capitalisation	-	-	-	-	-
Deletions	-	-	-	-	-
Closing GFA	**4,855.82**	**4,855.82**	**4,855.82**	**4,855.82**	**4,855.82**

1.1.2. Means of Finance

The Hon'ble Commission in its order dated 20th March 2012 and True-up Order dated 14th March, 2013 had prescribed a normative approach of financing of the capital expenditure in the ratio of 70% debt and 30% equity in line with the Tariff Regulations. Further the allowable depreciation had been considered as normative loan repayment.

In order to maintain consistency in approach, the Petitioner has considered the aforementioned philosophy and calculated the normative debt and normative equity. The opening values of accumulated depreciation, normative loan and normative equity as on 1.4.2014 has been adopted from the true-up petition filed for FY 2013-14. Accordingly the gross fixed asset balance, the net fixed asset balance and its financing is presented in the table below:

Table: Calculation of GFA, NFA and its financing

Figures in Rs Crore

Anpara 'A' Power Station	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	885.62	885.62	885.62	885.62	885.62
Additions	-	-	-	-	-
Deletions	-	-	-	-	-
Closing GFA	**885.62**	**885.62**	**885.62**	**885.62**	**885.62**
Closing Net FA	**195.93**	**149.87**	**103.80**	**88.56**	**88.56**
Financing:					
Opening Equity	241.39	241.39	241.39	241.39	241.39
Additions	-	-	-	-	-
Closing Equity	**241.39**	**241.39**	**241.39**	**241.39**	**241.39**
Open. Accumulated Depreciation	643.62	689.69	735.76	781.82	797.06
Depreciation during the year	46.07	46.07	46.07	15.24	-
Closing Accumulated Depreciation	**689.69**	**735.76**	**781.82**	**797.06**	**797.06**
Opening Debts	0.61	-	-	-	-
Additions	-	-	-	-	-
Less: Depreciation (normative repayment)	0.61	-	-	-	-
Closing Debts	**-**	**-**	**-**	**-**	**-**

1.1.3. Interest on Loan Capital

Regulation 25(i) of the UPERC Generation Regulations, 2014 provide the basis for computation of Interest on loan capital. It states that the Interest on loan capital shall be computed on the loans arrived at in the manner indicated in Regulation 24 i.e in the approved Debt: Equity ratio. The loan outstanding as on 1st April 2014 shall be worked out as the gross loan as per Regulation 24 minus cumulative repayment as admitted by the Commission up to 31st March 2014. The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year. In case of decapitalisation of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of decapitalisation of such asset.

Further, the rate of the interest shall be the weighted average rate of interest calculated on the basis of actual loans at the beginning of each year and shall be adjusted based on actual loan each year accordingly. If there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average of interest shall be considered.

Further, It is reiterated that the Petitioner has considered a normative tariff approach with a gearing of 70:30 as considered by the Hon'ble Commission in its True-up Order dated 14th November, 2014. In this approach, 70% of the capital expenditure undertaken in any year has been considered to be financed through loan and balance 30% has been considered to be funded through equity contributions.

Allowable depreciation for the year has been considered as normative loan repayment. The weighted average rate of interest of overall long term loan portfolio for FY 2013-14 has been considered for FY 2014-15 to FY 2018-19, as it seems to be fair and equitable.

Considering the debt worked out as above and applying the rate of 12.50%, the interest on loan capital has been worked out in the table below:

Table: Summary of Interest on Loan for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Debts	0.61	-	-	-	-
Additions	-	-	-	-	-
Less: Normative repayment	0.61	-	-	-	-
Closing Debts	**-**	**-**	**-**	**-**	**-**
Average Debt	0.31	-	-	-	-
Interest on Loan	**0.03**	**-**	**-**	**-**	**-**

1.1.4. Depreciation

The Petitioner submits that the depreciation as per accounts is calculated as per the prescription of New Companies Act, 2013 which is depicted in the accounting policies annexed with the audited accounts. However the Tariff Regulations prescribe that the eligible depreciation shall be calculated annually, based on straight line method over the useful life of the asset and the rates prescribed in Appendix III of such regulations. It is noteworthy of mentioning that the Appendix III prescribes distinct depreciation rates for each class of assets.

The Petitioner has provided the asset class wise list of gross fixed assets in Form 12 of the tariff formats submitted along with this petition. Accordingly the Petitioner has calculated the eligible depreciation based on the rates prescribed in the tariff regulations.

The Petitioner reiterates that the detailed asset wise list is now available with the Hon'ble Commission. Such values are in accordance with the audited financial statements of the Petitioner. The rates of depreciation prescribed by the Hon'ble Commission in Appendix 3 of the Generation Tariff Regulations prescribe different depreciation rates for different assets. In such circumstances it would only be fit to consider station wise depreciation calculated at the rates prescribed in Appendix 3 for different asset classes and not at the average rate.

While calculating the allowable depreciation, the petitioner has considered the residual life of the asset as 10% and depreciation has been considered up to maximum of 90% of the historical capital cost of the asset being in line with the provisions of the Generation Regulations, 2014.

The value of Gross Fixed Assets has been discussed in foregoing sections. The Petitioner has calculated station wise depreciation, on the Gross Fixed Asset (GFA) value of all the plants owned by it, at the rates specified in the Appendix 3 of Generation Tariff Regulations 2014.

The allowable depreciation is depicted in the table below:

Table: Depreciation Summary for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation as per Annexure III of the Regulations	46.07	46.07	46.07	46.07	46.07
Allowable Depreciation subject to maximum of 90% of the Capital Cost	46.07	46.07	46.07	15.24	0.00

1.1.5. Return on Equity

Regulation 25(iii) of the UPERC Generation Regulations, 2014 provides the base for determination of Return on Equity for the purpose of computation of fixed charges. The said regulations state that the Return on equity shall be computed in rupee terms on the equity base determined in accordance with Regulation 24 @15.5% per annum.

The equity base for the thermal power station as on 01.04.2014 has been considered as the closing equity balance for FY 2013-14 as submitted by the petitioner in its final true-up petition for FY 2013-14 submitted along with the MYT Petition. Thereafter 30% of the total capitalisation has been considered to be funded from equity infusion in each year of the control period.

As per the Generation Tariff Regulations, equity would be eligible for return when the asset is commissioned. Accordingly the table below provides the summary of equity base eligible for return and the Return on Equity claimed by the petitioner for the control period:

Table: Return on Equity for the Control Period (FY 2014-15 to FY 2018-19)

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	241.39	241.39	241.39	241.39	241.39
Additions	-	-	-	-	-
Closing Equity	**241.39**	**241.39**	**241.39**	**241.39**	**241.39**
Rate of Return on Equity (%)	15.5%	15.5%	15.5%	15.5%	15.5%
Allowable RoE	**37.42**	**37.42**	**37.42**	**37.42**	**37.42**

1.1.6. Operation & Maintenance Expenses

Regulation 21(iv) of the UPERC Generation Regulations, 2014 deals with the allowance of O&M expenses. The Hon'ble Commission in the generation tariff regulations – Para 25 (iv) (a) have prescribed the yearly O&M expenses for the control period FY 2014-15 to FY 2018-19 based upon the Installed Capacity for the thermal power stations other than plant for Obra A, Obra B, Panki, Harduaganj & Parichha TPS. The Hon'ble Commission has provided special dispensation in the O&M norms for the Thermal power plants namely Obra A, Obra B, Panki, Harduaganj & Parichha TPS, the same have been provided in the Para 25(iv)(b) of the Generation Regulation.

Accordingly based on the above stated norms the O&M expenses allowed for the power station for the Control period is depicted in the table below:

Table: O&M expense for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Capaicty	630.00	630.00	630.00	630.00	630.00
Norms	23.90	25.40	27.00	28.70	30.51
O&M Expenses	**150.57**	**160.02**	**170.10**	**180.81**	**192.21**

Further the Hon'ble Commission in its Para 25(iv) Note (c) has stated that the expenses on account of regulatory fee, payment to pollution control board, impact of pay revision, capital spares, cost of water and water cess shall be paid additionally at actuals subject to prudence check.

Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization.

1.1.7. Compensation Allowance

Para 25 (iv) Note (d) of the UPERC Generation Tariff Regulations 2014 prescribe a separate compensation allowance in case of coal-based thermal generating stations unit-wise, to meet expenses in nature of capital expenditure on replacement of minor assets which are not admissible under Regulation 22 of the regulations. The regulations further state that the revision of the capital cost shall not be allowed on account of compensation allowance but the compensation allowance shall be allowed to be recovered separately.

The following table summarizes the Petitioner's entitlement for Compensation allowance:

Table: Unit-wise Compensation Allowance for the Control Period

(All figures in Rs Crs)

Unit No.	Declared Capacity	Date of Commercial Operation	Age of Plant as on 31.03.2014	Compensation Allowance (Rs/Lakh/MW/Year)	FY 15	FY 16	FY 17	FY 18	FY 19
1	210	01-01-1987	27.00	1.00	2.10	2.10	2.10	2.10	2.10
2	210	01-08-1987	26.00	1.00	2.10	2.10	2.10	2.10	2.10
3	210	01-04-1989	24.00	1.00	2.10	2.10	2.10	2.10	2.10
Total					**6.30**	**6.30**	**6.30**	**6.30**	**6.30**

1.1.8. Interest on Working Capital

The Petitioner has worked out the working capital requirement based on the normative parameters prescribed in Para 25 (v) of the UPERC Generation Tariff Regulations 2014. The rate of interest on working capital has been considered on normative basis as the Bank Rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof is declared under commercial operation, whichever is later.

The Petitioner for this Petition has considered the interest rate on working capital requirement at 12.50% including margin being the Bank rate as specified by the Reserve Bank of India as on 1st April 2014.

Further the Hon'ble Commission has provided the following norms for the purpose of calculating of the normative working capital for coal based generating stations:

i. Cost of coal for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal stock storage capacity whichever is lower
ii. Cost of coal for 30 days for generation corresponding to the target availability
iii. Cost of secondary fuel oil for two months corresponding to the target availability and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;
iv. Operation and Maintenance expenses for one month;
v. Maintenance spares @ 20% of operation and maintenance expenses; and
vi. Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the target availability.

Based on the above premise, the computation of interest on working capital for the control period for kind consideration and approval of the Hon'ble Commission are as per table below:

Table: Interest on Working Capital for the Control Period

(All figures in Rs Crs)

Anpara A	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal	104.17	109.38	114.85	120.60	126.63
Cost of Main Secondary Fuel Oil	3.66	3.85	4.04	4.24	4.45

Anpara A	2014-15	2015-16	2016-17	2017-18	2018-19
Fuel Cost	0.00	0.00	0.00	0.00	0.00
Liquid Fuel Stock	0.00	0.00	0.00	0.00	0.00
O & M Expenses	12.55	13.34	14.18	15.07	16.02
Maintenance Spares	30.11	32.00	34.02	36.16	38.44
Receivables	154.25	161.53	169.21	177.30	185.82
Total Working Capital	304.75	320.10	336.30	353.37	371.35
Rate of Interest	12.50%	12.50%	12.50%	12.50%	12.50%
Interest on Working Capital	**38.09**	**40.01**	**42.04**	**44.17**	**46.42**

1.1.9. Summary of Annual Capacity (Fixed) Charges

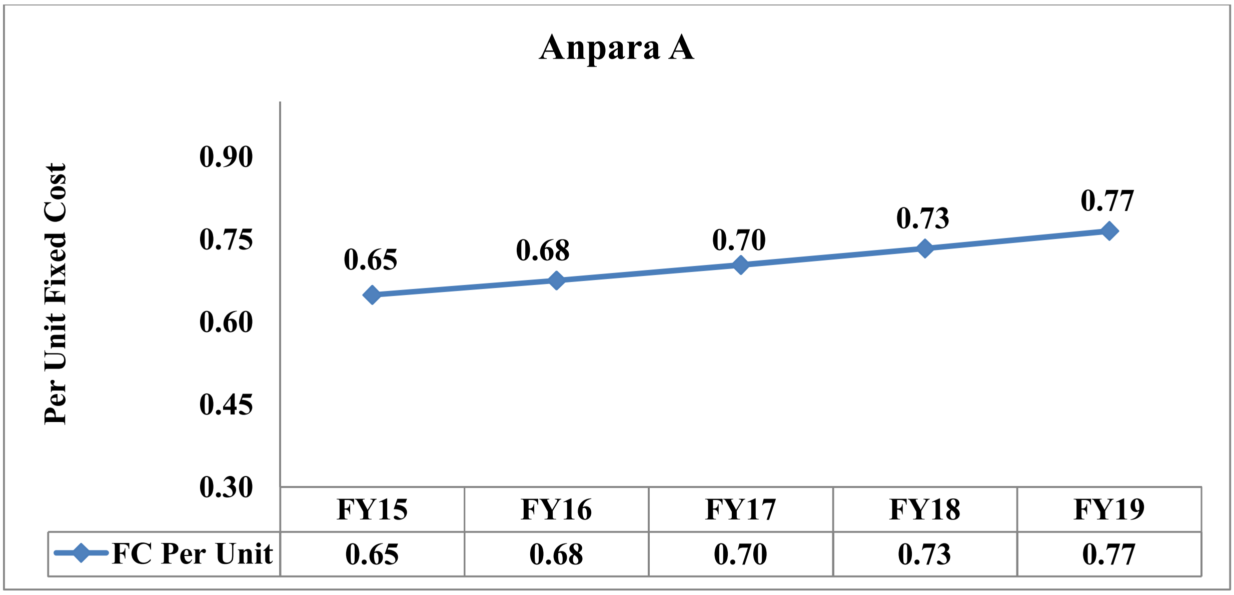
In view of the above submissions, the fixed cost of the Petitioner's Anpara A TPS for the control period under consideration works out at as under:

Table: Summary of Annual Capacity (Fixed) Charges for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	46.07	46.07	46.07	46.07	46.07
Interest on Loan Capital	0.03	0.00	0.00	0.00	0.00
Return on Equity	37.42	37.42	37.42	37.42	37.42
O&M Expenses	150.57	160.02	170.10	180.81	192.21
Compensation Allowance	6.30	6.30	6.30	6.30	6.30
Interest on Working Capital	38.09	40.01	42.04	44.17	46.42
Total Capacity Charges	**278.48**	**289.82**	**301.92**	**314.76**	**328.42**
Energy ex bus	4292	4292	4292	4292	4292
FC per unit	**0.65**	**0.68**	**0.70**	**0.73**	**0.77**

Graph: Fixed Cost per unit in the Control Period



1.2. Energy Charges

The following table highlights the normative parameters which the Hon'ble Commission has prescribed for the control period of FY 2014-15 to FY 2018-19:

Table Normative Operating Parameters for the Control Period

As per Tariff Generation Regulations for MYT FY 2015 to FY 2019

Normative Parameters	Unit	FY15	FY16	FY17	FY18	FY19
Target Availability	%	85%	85%	85%	85%	85%
Target PLF	%	85%	85%	85%	85%	85%
Aux Energy Consumption	%	8.50%	8.50%	8.50%	8.50%	8.50%
Gross Heat Rate	Kcal/kWh	2475	2475	2475	2475	2475
Specific Fuel Oil Cons	ml/kWh	0.75	0.75	0.75	0.75	0.75

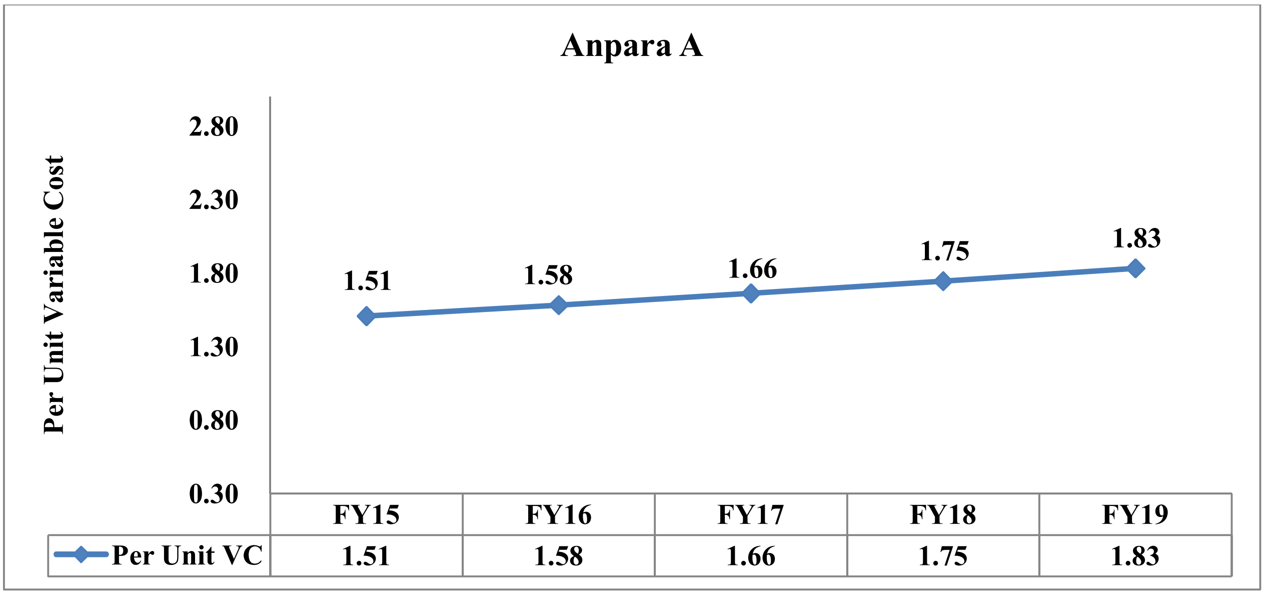
For the purpose of calculations of energy charges for FY 2014-15, the average of the actual GCV of coal and oil and actual cost thereof of the ending three months (October to December 2014) has been taken for the purpose of calculations of energy charges. The Petitioner has assumed an annual Escalation Rate of 5% in the price of fuels over the five year control period starting from the financial year 2014-15 upto FY 2018-19

Energy charges for the control period have been projected based on the operating parameters prescribed in the Generation Tariff Regulations. A summarized position of energy charges proposed for the control period is given in Table below: (The details are available in tariff filing formats prescribed by the Hon'ble Commission)

Table: Calculation of Energy Charges for the Control Period

Description	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Capacity	MW	630	630	630	630	630
PLF	%	85%	85%	85%	85%	85%
Gross Station Heat Rate	Kcal/kWh	2475	2475	2475	2475	2475
Auxiliary Energy Consumption	%	8.50%	8.50%	8.50%	8.50%	8.50%
Energy Generation - Gross	MU	4,691	4,691	4,691	4,691	4,691
Auxiliary Energy Consumption	MU	399	399	399	399	399
Ex-bus Energy Sent Out	MU	4,292	4,292	4,292	4,292	4,292
Specific Oil Consumption	ml/kWh	0.75	0.75	0.75	0.75	0.75
Wt. Avg. GCV of Oil	KCal/Lt	10,657	10,657	10,657	10,657	10,657
Price of Oil	Rs./KL	62,492	65,616	68,897	72,342	75,959
Wt. Avg. GCV of Coal	kCal/kg	3061	3061	3061	3061	3061
Price of Coal	Rs./MT	1653	1736	1823	1914	2010
Heat Contribution from SFO	Kcal/kWh	8	8	8	8	8
Oil Consumption	KL	3518	3518	3518	3518	3518
Heat Contribution from Coal	Kcal/kWh	2467	2467	2467	2467	2467
Specific Coal Consumption	kg/kWh	0.81	0.81	0.81	0.81	0.81
Coal Consumption	MMT	3.78	3.78	3.78	3.78	3.78
Total Cost of Oil	Rs Cr	21.99	23.09	24.24	25.45	26.72
Total Cost of Coal	Rs Cr	625.05	656.30	689.12	723.57	759.75
Total Fuel Cost	Rs Cr	647.04	679.39	713.36	749.02	786.48
Rate of Energy Charge from Secondary Fuel Oil ex-bus	Paise/kWh	5.12	5.38	5.65	5.93	6.23
Rate of Energy Charge from Coal ex-bus	Paise/kWh	145.62	152.90	160.55	168.58	177.01
Rate of Energy Charge ex-bus per kWh	Paise/kWh	150.75	158.28	166.20	174.51	183.23

Graph: Variable Cost per unit in the Control Period



1.2.1. Fuel Cost Adjustment

Regulation 26 (i) (ii) & (iii) of the Generation Tariff Regulations 2014, provide the mechanism for claiming the adjustment of rate of energy charges on account of variation in price and heat values of fuels.

"Initially, Gross Calorific Value of coal or gas or liquid fuel shall be taken as per actual of the preceding three months. Any variation shall be adjusted on month to month basis on the basis of Gross Calorific Value of coal or gas or liquid fuel received and burnt and landed cost incurred by the generating company for procurement of coal, oil, or gas or liquid fuel, as the case may be. No separate petition need to be filed with the Commission for fuel price adjustment. In case of any dispute, an appropriate application in accordance with Uttar Pradesh Electricity Regulatory Commission (Conduct of Business) Regulations 2004, as amended from time to time or any statutory re-enactment thereof, shall be made before the Commission"

Accordingly the Petitioner would raise bills for recovery of Fuel Cost Adjustment.

ANPARA 'B' TPS

ANPARA 'B' THERMAL POWER STATION

MULTI YEAR TARIFF PETITION

FOR

DETERMINATION OF TARIFF FOR

CONTROL PERIOD

FY 2014-15 to FY 2018-19

UP RAJYA VIDYUT UTPADAN NIGAM LTD

1. ANNUAL REVENUE REQUIREMENT & MULTI-YEAR TARIFF PETITION OF 'ANPARA B TPS'

The following sections detail the Annual Revenue Requirement and Tariff Petition of Anpara BTPS for the five year control period of FY 2014-15 to FY 2018-19

1.1. Annual Capacity (Fixed Charges) Charges

As per tariff regulations the annual capacity (fixed) charges consist of

a. Interest on Loan Capital

b. Depreciation including Advance against Depreciation

c. Return on Equity

d. Operation and maintenance expenses including insurance and

e. Interest on Working Capital

f. Compensation Allowance

1.1.1. Gross Fixed Assets

Regulation 19.3 of the UPERC Generation Regulations, 2014 provide the basis for determination of final tariff of an existing project based on the admitted capital cost which shall include:

a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;
b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 22; and
c) Expenditure on account of renovation and modernization as admitted by this Commission in accordance with Regulation 22.

Accordingly the Petitioner for the purpose of this MYT petition for the control period FY 2014-15 to FY 2018-19 has considered the opening GFA balance as on 01.04.2014 equal to the closing GFA balance submitted in the final true-up petition for FY 2013-14 filed along

with the MYT petition being in line with the clause 19.3(c) of the Generation Regulations, 2014.

In this MYT Tariff Petition, the Petitioner is submitting the detailed asset wise list of its fixed assets for the control period FY 2014-15 to FY 2018-19. The Petitioner has considered the opening Gross Fixed Assets for FY 2014-15 on the basis of Final Accounts of FY 2013-14 and have subsequently added the yearly capitalizations for FY 2014-15 to FY 2018-19 as considered in the foregoing sections based on the proposed R&M/Refurbishment & Up-rating schemes, if any.

Accordingly the following table depicts the proposed Gross Fixed Asset balances along with the yearly capitalizations (if any) for the Control period FY 2014-15 to FY 2018-19:

Table: - Gross Fixed Assets Summary - FY 2014-15 to FY 2018-19

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	4,855.82	4,855.82	4,855.82	4,855.82	4,855.82
Capitalisation	-	-	-	-	-
Deletions	-	-	-	-	-
Closing GFA	**4,855.82**	**4,855.82**	**4,855.82**	**4,855.82**	**4,855.82**

1.1.2. Means of Finance

The Hon'ble Commission in its order dated 20th March 2012 and True-up Order dated 14th March, 2013 had prescribed a normative approach of financing of the capital expenditure in the ratio of 70% debt and 30% equity in line with the Tariff Regulations. Further the allowable depreciation had been considered as normative loan repayment.

In order to maintain consistency in approach, the Petitioner has considered the aforementioned philosophy and calculated the normative debt and normative equity. The opening values of accumulated depreciation, normative loan and normative equity as on 1.4.2014 has been adopted from the true-up petition filed for FY 2013-14. Accordingly the gross fixed asset balance, the net fixed asset balance and its financing is presented in the table below:

Table: Calculation of GFA, NFA and its financing

Figures in Rs Crore

Anpara 'B' Power Station	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	4,855.82	4,855.82	4,855.82	4,855.82	4,855.82
Additions	-	-	-	-	-
Deletions	-	-	-	-	-
Closing GFA	**4,855.82**	**4,855.82**	**4,855.82**	**4,855.82**	**4,855.82**
Closing Net FA	**602.57**	**485.58**	**485.58**	**485.58**	**485.58**
Financing:					
Opening Equity	1,317.01	1,317.01	1,317.01	1,317.01	1,317.01
Additions	-	-	-	-	-
Closing Equity	**1,317.01**	**1,317.01**	**1,317.01**	**1,317.01**	**1,317.01**
Open. Accumulated Depreciation	3,975.50	4,253.25	4,370.23	4,370.23	4,370.23
Depreciation during the year	277.75	116.99	-	-	-
Closing Accumulated Depreciation	**4,253.25**	**4,370.23**	**4,370.23**	**4,370.23**	**4,370.23**
Opening Debts	-	-	-	-	-
Additions	-	-	-	-	-
Less: Depreciation (normative repayment)	-	-	-	-	-
Closing Debts	**-**	**-**	**-**	**-**	**-**

1.1.3. Interest on Loan Capital

Regulation 25(i) of the UPERC Generation Regulations, 2014 provide the basis for computation of Interest on loan capital. It states that the Interest on loan capital shall be computed on the loans arrived at in the manner indicated in Regulation 24 i.e in the approved Debt: Equity ratio. The loan outstanding as on 1st April 2014 shall be worked out as the gross loan as per Regulation 24 minus cumulative repayment as admitted by the Commission up to 31st March 2014. The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year. In case of decapitalisation of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of decapitalisation of such asset.

Further, the rate of the interest shall be the weighted average rate of interest calculated on the basis of actual loans at the beginning of each year and shall be adjusted based on actual loan each year accordingly. If there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average of interest shall be considered.

Further, It is reiterated that the Petitioner has considered a normative tariff approach with a gearing of 70:30 as considered by the Hon'ble Commission in its True-up Order dated 14th November, 2014. In this approach, 70% of the capital expenditure undertaken in any year has been considered to be financed through loan and balance 30% has been considered to be funded through equity contributions.

Allowable depreciation for the year has been considered as normative loan repayment. The weighted average rate of interest of overall long term loan portfolio for FY 2013-14 has been considered for FY 2014-15 to FY 2018-19, as it seems to be fair and equitable.

Considering the debt worked out as above and applying the rate of 12.50%, the interest on loan capital has been worked out in the table below:

Table: Summary of Interest on Loan for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Debts	-	-	-	-	-
Additions	-	-	-	-	-
Less: Normative repayment	-	-	-	-	-
Closing Debts	**-**	**-**	**-**	**-**	**-**
Average Debt	-	-	-	-	-
Interest on Loan	**-**	**-**	**-**	**-**	**-**

1.1.4. Depreciation

The Petitioner submits that the depreciation as per accounts is calculated as per the prescription of New Companies Act, 2013 which is depicted in the accounting policies annexed with the audited accounts. However the Tariff Regulations prescribe that the eligible depreciation shall be calculated annually, based on straight line method over the useful life of the asset and the rates prescribed in Appendix III of such regulations. It is noteworthy of mentioning that the Appendix III prescribes distinct depreciation rates for each class of assets.

The Petitioner has provided the asset class wise list of gross fixed assets in Form 12 of the tariff formats submitted along with this petition. Accordingly the Petitioner has calculated the eligible depreciation based on the rates prescribed in the tariff regulations.

The Petitioner reiterates that the detailed asset wise list is now available with the Hon'ble Commission. Such values are in accordance with the audited financial statements of the Petitioner. The rates of depreciation prescribed by the Hon'ble Commission in Appendix 3 of the Generation Tariff Regulations prescribe different depreciation rates for different assets. In such circumstances it would only be fit to consider station wise depreciation calculated at the rates prescribed in Appendix 3 for different asset classes and not at the average rate.

While calculating the allowable depreciation, the petitioner has considered the residual life of the asset as 10% anddepreciation has been considered up to maximum of 90% of the historical capital cost of the asset being in line with the provisions of the Generation Regulations, 2014.

The value of Gross Fixed Assets has been discussed in foregoing sections. The Petitioner has calculated station wise depreciation, on the Gross Fixed Asset (GFA) value of all the plants owned by it, at the rates specified in the Appendix 3 of Generation Tariff Regulations 2014.

The allowable depreciation is depicted in the table below:

Table: Depreciation Summary for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation as per Annexure III of the Regulations	277.75	277.75	277.75	277.75	277.75
Allowable Depreciation subject to maximum of 90% of the Capital Cost	277.75	116.99	0.00	0.00	0.00

1.1.5. Return on Equity

Regulation 25(iii) of the UPERC Generation Regulations, 2014 provides the base for determination of Return on Equity for the purpose of computation of fixed charges. The said regulations state that the Return on equity shall be computed in rupee terms on the equity basedetermined in accordance with Regulation 24@15.5% per annum.

The equity base for the thermal power station as on 01.04.2014 has been considered as the closing equity balance for FY 2013-14 as submitted by the petitioner in its final true-up petition for FY 2013-14 submitted along with the MYT Petition. Thereafter 30% of the total capitalisation has been considered to be funded from equity infusion in each year of the control period.

As per the Generation Tariff Regulations, equity would be eligible for return when the asset is commissioned. Accordingly the table below provides the summary of equity base eligible for return and the Return on Equity claimed by the petitioner for the control period:

Table: Return on Equity for the Control Period (FY 2014-15 to FY 2018-19)

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	1,317.01	1,317.01	1,317.01	1,317.01	1,317.01
Additions	-	-	-	-	-
Closing Equity	**1,317.01**	**1,317.01**	**1,317.01**	**1,317.01**	**1,317.01**
Rate of Return on Equity (%)	15.5%	15.5%	15.5%	15.5%	15.5%
Allowable RoE	**204.14**	**204.14**	**204.14**	**204.14**	**204.14**

1.1.6. Operation & Maintenance Expenses

Regulation 21(iv) of the UPERC Generation Regulations, 2014 deals with the allowance of O&M expenses. The Hon'ble Commission in the generation tariff regulations – Para 25 (iv) (a) have prescribed the yearly O&M expenses for the control period FY 2014-15 to FY 2018-19 based upon the Installed Capacity for the thermal power stations other than plantfor Obra A, Obra B, Panki, Harduaganj & Parichha TPS. The Hon'ble Commission has provided special dispensation in the O&M norms for the Thermal power plants namely Obra A, Obra B, Panki, Harduaganj & Parichha TPS, the same have been provided in the Para 25(iv)(b) of the Generation Regulation.

Accordingly based on the above stated norms the O&M expenses allowed for the power station for the Control period is depicted in the table below:

Table: O&M expense for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Capaicty (MW)	1000	1000	1000	1000	1000
Norms (Rs Lakh/MW)	16.00	17.01	18.08	19.22	20.43
O&M Expenses (Rs Crore)	**160.00**	**170.10**	**180.80**	**192.20**	**204.30**

Further the Hon'ble Commission in its Para 25(iv) Note (c) has stated that the expenses on account of regulatory fee, payment to pollution controlboard, impact of pay revision, capital spares, cost of water and watercess shall be paid additionally at actuals subject to prudence check.

Provided that the generating station shall submit the details ofyear wise actual capital spares consumed at the time of truing upwith appropriate justification for incurring the same and substantiatingthat the same is not funded through compensatory allowance orspecial allowance or claimed as a part of additional capitalisation orconsumption of stores and spares and renovation and modernization.

1.1.7. Compensation Allowance

Para 25 (iv) Note (d) of the UPERC Generation Tariff Regulations 2014 prescribe a separate compensation allowance in case of coal-based thermal generating stations unit-wise, to meetexpenses in nature of capital expenditure on replacement of minorassets which are not admissible under Regulation 22 of the regulations. The regulations further state that the revision of the capital cost shallnot be allowed on account of compensation allowance but thecompensation allowance shall be allowed to be recoveredseparately.

The following table summarizes the Petitioner's entitlement for Compensation allowance:

Table: Unit-wise Compensation Allowance for the Control Period

(All figures in Rs Crs)

Unit No.	Declared Capacity	Date of Commercial Operation	Age of Plant as on 31.03.2014	Compensation Allowance (Rs/Lakh/MW/Year)	FY 15	FY 16	FY 17	FY 18	FY 19
1	500	01/03/1994	20.00	1.00	5.00	5.00	5.00	5.00	5.00
2	500	01/10/1994	19.00	0.50	2.50	2.50	2.50	2.50	2.50
Total					**7.50**	**7.50**	**7.50**	**7.50**	**7.50**

1.1.8. Interest on Working Capital

The Petitioner has worked out the working capital requirement based on the normative parameters prescribed in Para 25 (v) of the UPERC Generation Tariff Regulations 2014. The rate of interest on working capital has been considered on normative basis as the Bank Rate as on 1.4.2014 or as on 1st April ofthe year during the tariff period 2014-15 to 2018-19in which the generatingstation or a unit thereof is declared under commercial operation, whicheveris later.

The Petitioner for this Petition has considered the interest rate on working capital requirement at 12.50% including margin being the Bank rate as specified by the Reserve Bank of India as on 1st April 2014.

Further the Hon'ble Commission has provided the following norms for the purpose of calculating of the normative working capital for coalbased generating stations:

i. Cost of coal for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor orthe maximum coal stock storage capacity whichever is lower
ii. Cost of coal for 30 days for generation corresponding to the target availability
iii. Cost of secondary fuel oil for two months corresponding to the target availability and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;
iv. Operation and Maintenance expenses for one month;
v. Maintenance spares @ 20% of operation and maintenance expenses; and
vi. Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the target availability.

Based on the above premise, the computation of interest on working capital for the control period for kind consideration and approval of the Hon'ble Commission are as per table below:

Table: Interest on Working Capital for the Control Period

(All figures in Rs Crs)

Anpara B	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal	178.64	187.57	196.95	206.80	217.14
Cost of Main Secondary Fuel Oil	5.82	6.11	6.41	6.73	7.07

Anpara B	2014-15	2015-16	2016-17	2017-18	2018-19
Fuel Cost	0.00	0.00	0.00	0.00	0.00
Liquid Fuel Stock	0.00	0.00	0.00	0.00	0.00
O & M Expenses	13.33	14.18	15.07	16.02	17.03
Maintenance Spares	32.00	34.02	36.16	38.44	40.86
Receivables	301.33	314.66	326.65	339.24	352.47
Total Working Capital	531.12	556.53	581.24	607.22	634.56
Rate of Interest	12.50%	12.50%	12.50%	12.50%	12.50%
Interest on Working Capital	**66.39**	**69.57**	**72.66**	**75.90**	**79.32**

1.1.9. Summary of Annual Capacity (Fixed) Charges

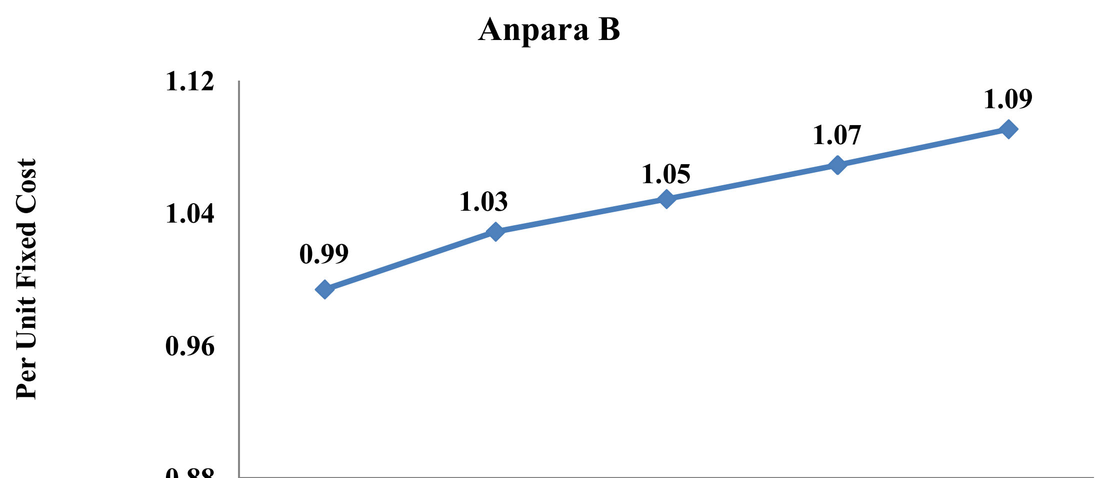
In view of the above submissions, the fixed cost of the Petitioner's Anpara B TPS for the control period under consideration works out at as under:

Table: Summary of Annual Capacity (Fixed) Charges for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	277.75	277.75	277.75	277.75	277.75
Interest on Loan Capital	0.00	0.00	0.00	0.00	0.00
Return on Equity	204.14	204.14	204.14	204.14	204.14
O&M Expenses	160.00	170.10	180.80	192.20	204.30
Compensation Allowance	7.50	7.50	7.50	7.50	7.50
Interest on Working Capital	51.87	66.39	69.57	72.66	75.90
Total Capacity Charges	**701.25**	**725.87**	**739.75**	**754.24**	**769.59**
Energy ex bus	7055	7055	7055	7055	7055
FC per unit	**0.99**	**1.03**	**1.05**	**1.07**	**1.09**

Graph: Fixed Cost per unit in the Control Period



	FY15	FY16	FY17	FY18	FY19
FC Per Unit	0.99	1.03	1.05	1.07	1.09

1.2. Energy Charges

The following table highlights the normative parameters which the Hon'ble Commission has prescribed for the control period of FY 2014-15 to FY 2018-19:

Table Normative Operating Parameters for the Control Period

As per Tariff Generation Regulations for MYT FY 2015 to FY 2019

Normative Parameters	Unit	FY15	FY16	FY17	FY18	FY19
Target Availability	%	85%	85%	85%	85%	85%
Target PLF	%	85%	85%	85%	85%	85%
Aux Energy Consumption	%	5.25%	5.25%	5.25%	5.25%	5.25%
Gross Heat Rate	Kcal/kWh	2410	2410	2410	2410	2410
Specific Fuel Oil Cons	ml/kWh	0.75	0.75	0.75	0.75	0.75

For the purpose of calculations of energy charges for FY 2014-15, the average of the actual GCV of coal and oil and actual cost thereof of the ending three months (October to December 2014) has been taken for the purpose of calculations of energy charges. The Petitioner has assumed an annual Escalation Rate of 5% in the price of fuels over the five year control period starting from the financial year 2014-15 upto FY 2018-19

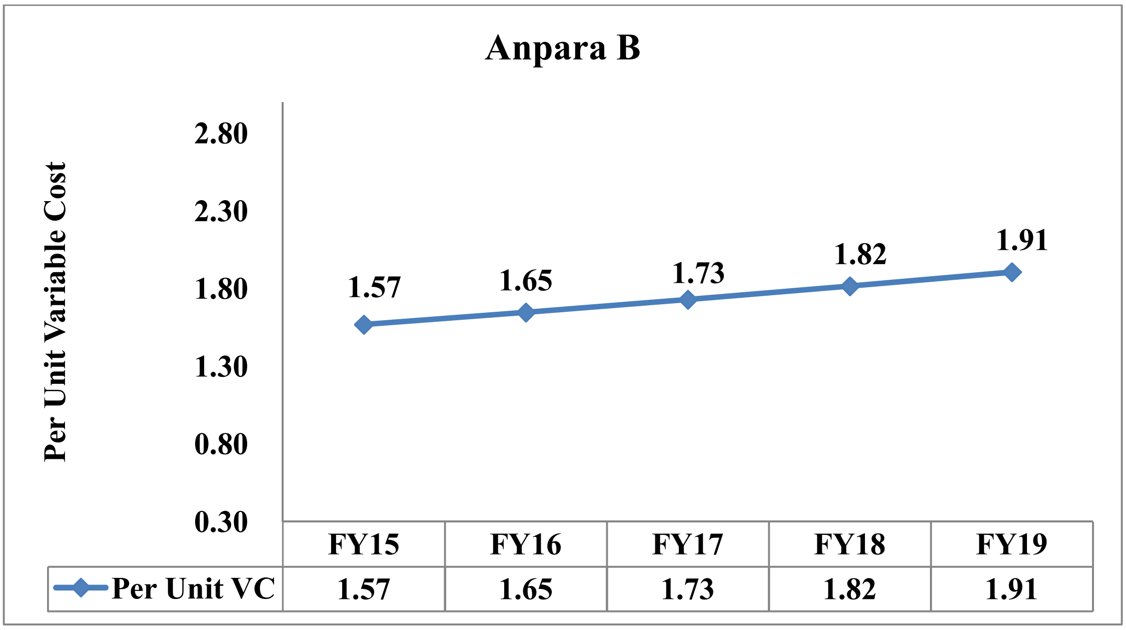
Energy charges for the control period have been projected based on the operating parameters prescribed in the Generation Tariff Regulations. A summarized position of energy charges proposed for the control period is given in Table below: (The details are available in tariff filing formats prescribed by the Hon'ble Commission)

Table: Calculation of Energy Charges for the Control Period

Description	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Capacity	MW	1000	1000	1000	1000	1000
PLF	%	85%	85%	85%	85%	85%
Gross Station Heat Rate	Kcal/kWh	2410	2410	2410	2410	2410
Auxiliary Energy Consumption	%	5.25%	5.25%	5.25%	5.25%	5.25%
Energy Generation - Gross	MU	7,446	7,446	7,446	7,446	7,446
Auxiliary Energy Consumption	MU	391	391	391	391	391
Ex-bus Energy Sent Out	MU	7,055	7,055	7,055	7,055	7,055
Specific Oil Consumption	ml/kWh	0.75	0.75	0.75	0.75	0.75
Wt. Avg. GCV of Oil	KCal/Lt	10,657	10,657	10,657	10,657	10,657
Price of Oil	Rs./KL	62,492	65,616	68,897	72,342	75,959
Wt. Avg. GCV of Coal	kCal/kg	3221	3221	3221	3221	3221
Price of Coal	Rs./MT	1,930	2,027	2,128	2,235	2,346
Heat Contribution from SFO	Kcal/kWh	7.99	7.99	7.99	7.99	7.99
Oil Consumption	KL	5585	5585	5585	5585	5585
Heat Contribution from Coal	Kcal/kWh	2402	2402	2402	2402	2402
Specific Coal Consumption	kg/kWh	0.75	0.75	0.75	0.75	0.75
Coal Consumption	MMT	5.55	5.55	5.55	5.55	5.55
Total Cost of Oil	Rs Cr	34.90	36.64	38.48	40.40	42.42
Total Cost of Coal	Rs Cr	1,071.83	1,125.42	1,181.70	1,240.78	1,302.82
Total Fuel Cost	Rs Cr	1,106.73	1,162.07	1,220.17	1,281.18	1,345.24

Description	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Rate of Energy Charge from Secondary Fuel Oil ex-bus	Paise/kWh	4.95	5.19	5.45	5.73	6.01
Rate of Energy Charge from Coal ex-bus	Paise/kWh	151.92	159.52	167.50	175.87	184.66
Rate of Energy Charge ex-bus per kWh	Paise/kWh	156.87	164.71	172.95	181.60	190.68

Graph: Variable Cost per unit in the Control Period



1.2.1. Fuel Cost Adjustment

Regulation 26 (i) (ii) & (iii) of the Generation Tariff Regulations 2014, provide the mechanism for claiming the adjustment of rate of energy charges on account of variation in price and heat values of fuels.

"Initially, Gross Calorific Value of coal or gas or liquid fuel shall be taken as per actual of the preceding three months. Any variation shall be adjusted on month to month basis on the basis of Gross Calorific Value of coal or gas or liquid fuel received and burnt and landed cost incurred by the generating company for procurement of coal, oil, or gas or liquid fuel, as the case may be. No separate petition need to be filed with the Commission for fuel price adjustment. In case of any dispute, an appropriate application in accordance with Uttar Pradesh Electricity Regulatory Commission (Conduct of Business) Regulations 2004, as

amended from time to time or any statutory re-enactment thereof, shall be made before the Commission”

Accordingly the Petitioner would raise bills for recovery of Fuel Cost Adjustment.

OBRA ‘A’ TPS

OBRA 'A' THERMAL POWER STATION

MULTI YEAR TARIFF PETITION

FOR

DETERMINATION OF TARIFF FOR

CONTROL PERIOD

FY 2014-15 to FY 2018-19

UP RAJYA VIDYUT UTPADAN NIGAM LTD

1. ANNUAL REVENUE REQUIREMENT & MULTI-YEAR TARIFF PETITION OF 'OBRA ATPS'

The following sections detail the Annual Revenue Requirement and Tariff Petition of Obra A TPS for the five year control period of FY 2014-15 to FY 2018-19

1.1. Annual Capacity (Fixed Charges) Charges

As per tariff regulations the annual capacity (fixed) charges consist of

a. Interest on Loan Capital

b. Depreciation including Advance against Depreciation

c. Return on Equity

d. Operation and maintenance expenses including insurance and

e. Interest on Working Capital

f. Compensation Allowance

1.1.1. Gross Fixed Assets

Regulation 19.3 of the UPERC Generation Regulations, 2014 provide the basis for determination of final tariff of an existing project based on the admitted capital cost which shall include:

a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;
b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 22; and
c) Expenditure on account of renovation and modernization as admitted by this Commission in accordance with Regulation 22.

Accordingly the Petitioner for the purpose of this MYT petition for the control period FY 2014-15 to FY 2018-19 has considered the opening GFA balance as on 01.04.2014 equal to the closing GFA balance submitted in the final true-up petition for FY 2013-14 filed along

with the MYT petition being in line with the clause 19.3(c) of the Generation Regulations, 2014.

In this MYT Tariff Petition, the Petitioner is submitting the detailed asset wise list of its fixed assets for the control period FY 2014-15 to FY 2018-19. The Petitioner has considered the opening Gross Fixed Assets for FY 2014-15 on the basis of Final Accounts of FY 2013-14 and have subsequently added the yearly capitalizations for FY 2014-15 to FY 2018-19 as considered in the foregoing sections based on the proposed R&M/Refurbishment & Up-rating schemes, if any.

Accordingly the following table depicts the proposed Gross Fixed Asset balances along with the yearly capitalizations (if any) for the Control period FY 2014-15 to FY 2018-19:

Table: - Gross Fixed Assets Summary - FY 2014-15 to FY 2018-19

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	231.93	231.93	231.93	231.93	231.93
Capitalisation	-	-	-	-	-
Deletions	-	-	-	-	-
Closing GFA	**231.93**	**231.93**	**231.93**	**231.93**	**231.93**

1.1.2. Means of Finance

The Hon'ble Commission in its order dated 20th March 2012 and True-up Order dated 14th March, 2013 had prescribed a normative approach of financing of the capital expenditure in the ratio of 70% debt and 30% equity in line with the Tariff Regulations. Further the allowable depreciation had been considered as normative loan repayment.

In order to maintain consistency in approach, the Petitioner has considered the aforementioned philosophy and calculated the normative debt and normative equity. The opening values of accumulated depreciation, normative loan and normative equity as on 1.4.2014 has been adopted from the true-up petition filed for FY 2013-14. Accordingly the gross fixed asset balance, the net fixed asset balance and its financing is presented in the table below:

Table: Calculation of GFA, NFA and its financing

Figures in Rs Crore

Obra 'A' Power Station	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	231.93	231.93	231.93	231.93	231.93
Additions	-	-	-	-	-
Deletions	-	-	-	-	-
Closing GFA	**231.93**	**231.93**	**231.93**	**231.93**	**231.93**
Closing Net FA	**45.54**	**32.80**	**23.19**	**23.19**	**23.19**
Financing:					
Opening Equity	80.46	80.46	80.46	80.46	80.46
Additions	-	-	-	-	-
Closing Equity	**80.46**	**80.46**	**80.46**	**80.46**	**80.46**
Open. Accumulated Depreciation	173.65	186.39	199.13	208.74	208.74
Depreciation during the year	12.74	12.74	9.61	-	-
Closing Accumulated Depreciation	**186.39**	**199.13**	**208.74**	**208.74**	**208.74**
Opening Debts	107.51	94.77	82.04	72.43	72.43
Additions	-	-	-	-	-
Less: Depreciation (normative repayment)	12.74	12.74	9.61	-	-
Closing Debts	**94.77**	**82.04**	**72.43**	**72.43**	**72.43**

1.1.3. Interest on Loan Capital

Regulation 25(i) of the UPERC Generation Regulations, 2014 provide the basis for computation of Interest on loan capital. It states that the Interest on loan capital shall be computed on the loans arrived at in the manner indicated in Regulation 24 i.e in the approved Debt: Equity ratio. The loan outstanding as on 1st April 2014 shall be worked out as the gross loan as per Regulation 24 minus cumulative repayment as admitted by the Commission up to 31st March 2014. The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year. In case of decapitalisation of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of decapitalisation of such asset.

Further, the rate of the interest shall be the weighted average rate of interest calculated on the basis of actual loans at the beginning of each year and shall be adjusted based on actual loan each year

accordingly. If there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average of interest shall be considered.

Further, It is reiterated that the Petitioner has considered a normative tariff approach with a gearing of 70:30 as considered by the Hon'ble Commission in its True-up Order dated 14th November, 2014. In this approach, 70% of the capital expenditure undertaken in any year has been considered to be financed through loan and balance 30% has been considered to be funded through equity contributions.

Allowable depreciation for the year has been considered as normative loan repayment. The weighted average rate of interest of overall long term loan portfolio for FY 2013-14 has been considered for FY 2014-15 to FY 2018-19, as it seems to be fair and equitable.

Considering the debt worked out as above and applying the rate of 12.50%, the interest on loan capital has been worked out in the table below:

Table: Summary of Interest on Loan for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Debts	107.51	94.77	82.04	72.43	72.43
Additions	-	-	-	-	-
Less: Normative repayment	12.74	12.74	9.61	-	-
Closing Debts	**94.77**	**82.04**	**72.43**	**72.43**	**72.43**
Average Debt	101.14	88.41	77.23	72.43	72.43
Interest on Loan	**11.14**	**9.73**	**8.50**	**7.97**	**7.97**

1.1.4. Depreciation

The Petitioner submits that the depreciation as per accounts is calculated as per the prescription of New Companies Act, 2013 which is depicted in the accounting policies annexed with the audited accounts. However the Tariff Regulations prescribe that the eligible depreciation shall be calculated annually, based on straight line method over the useful life of the asset and the rates prescribed in Appendix III of such regulations. It is noteworthy of mentioning that the Appendix III prescribes distinct depreciation rates for each class of assets.

The Petitioner has provided the asset class wise list of gross fixed assets in Form 12 of the tariff formats submitted along with this petition. Accordingly the Petitioner has calculated the eligible depreciation based on the rates prescribed in the tariff regulations.

The Petitioner reiterates that the detailed asset wise list is now available with the Hon'ble Commission. Such values are in accordance with the audited financial statements of the Petitioner. The rates of depreciation prescribed by the Hon'ble Commission in Appendix 3 of the Generation Tariff Regulations prescribe different depreciation rates for different assets. In such circumstances it would only be fit to consider station wise depreciation calculated at the rates prescribed in Appendix 3 for different asset classes and not at the average rate.

While calculating the allowable depreciation, the petitioner has considered the residual life of the asset as 10% anddepreciation has been considered up to maximum of 90% of the historical capital cost of the asset being in line with the provisions of the Generation Regulations, 2014.

The value of Gross Fixed Assets has been discussed in foregoing sections. The Petitioner has calculated station wise depreciation, on the Gross Fixed Asset (GFA) value of all the plants owned by it, at the rates specified in the Appendix 3 of Generation Tariff Regulations 2014.

The allowable depreciation is depicted in the table below:

Table: Depreciation Summary for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation as per Annexure III of the Regulations	12.74	12.74	12.74	12.74	12.74
Allowable Depreciation subject to maximum of 90% of the Capital Cost	12.74	12.74	9.61	0.00	0.00

1.1.5. Return on Equity

Regulation 25(iii) of the UPERC Generation Regulations, 2014 provides the base for determination of Return on Equity for the purpose of computation of fixed charges. The said regulations state that the Return on equity shall be computed in rupee terms on the equity basedetermined in accordance with Regulation 24@15.5% per annum.

The equity base for the thermal power station as on 01.04.2014 has been considered as the closing equity balance for FY 2013-14 as submitted by the petitioner in its final true-up petition for FY 2013-14 submitted along with the MYT Petition. Thereafter 30% of the total capitalisation has been considered to be funded from equity infusion in each year of the control period.

As per the Generation Tariff Regulations, equity would be eligible for return when the asset is commissioned. Accordingly the table below provides the summary of equity base eligible for return and the Return on Equity claimed by the petitioner for the control period:

Table: Return on Equity for the Control Period (FY 2014-15 to FY 2018-19)

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	80.46	80.46	80.46	80.46	80.46
Additions	-	-	-	-	-
Closing Equity	**80.46**	**80.46**	**80.46**	**80.46**	**80.46**
Rate of Return on Equity (%)	15.5%	15.5%	15.5%	15.5%	15.5%
Allowable RoE	**12.47**	**12.47**	**12.47**	**12.47**	**12.47**

1.1.6. Operation & Maintenance Expenses

Regulation 21(iv) of the UPERC Generation Regulations, 2014 deals with the allowance of O&M expenses. The Hon'ble Commission in the generation tariff regulations – Para 25 (iv) (a) have prescribed the yearly O&M expenses for the control period FY 2014-15 to FY 2018-19 based upon the Installed Capacity for the thermal power stations other than plant for Obra A, Obra B, Panki, Harduaganj & Parichha TPS. The Hon'ble Commission has provided special dispensation in the O&M norms for the Thermal power plants namely Obra A, Obra B, Panki, Harduaganj & Parichha TPS, the same have been provided in the Para 25(iv)(b) of the Generation Regulation.

Accordingly based on the above stated norms the O&M expenses allowed for the power station for the Control period is depicted in the table below:

Table: O&M expense for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Capaicty (MW)	288	288	288	288	288
Norms (Rs Lakh/MW)	46.23	48.16	50.15	52.20	54.31
O&M Expenses (Rs Crore)	**133.14**	**138.70**	**144.43**	**150.34**	**156.41**

Further the Hon'ble Commission in its Para 25(iv) Note (c) has stated that the expenses on account of regulatory fee, payment to pollution controlboard, impact of pay revision, capital spares, cost of water and watercess shall be paid additionally at actuals subject to prudence check.

Provided that the generating station shall submit the details ofyear wise actual capital spares consumed at the time of truing upwith appropriate justification for incurring the same and substantiatingthat the same is not funded through compensatory allowance orspecial allowance or claimed as a part of additional capitalisation orconsumption of stores and spares and renovation and modernization.

1.1.7. Compensation Allowance

Para 25 (iv) Note (d) of the UPERC Generation Tariff Regulations 2014 prescribe a separate compensation allowance in case of coal-based thermal generating stations unit-wise, to meetexpenses in nature of capital expenditure on replacement of minorassets which are not admissible under Regulation 22 of the regulations. The regulations further state that the revision of the capital cost shallnot be allowed on account of compensation allowance but thecompensation allowance shall be allowed to be recoveredseparately.

The following table summarizes the Petitioner's entitlement for Compensation allowance:

Table: Unit-wise Compensation Allowance for the Control Period

(All figures in Rs Crs)

Unit No.	Declared Capacity	Date of Commercial Operation	Age of Plant as on 31.03.2014	Compensation Allowance (Rs/Lakh/MW /Year)	FY 15	FY 16	FY 17	FY 18	FY 19
1	50	15/08/1967	46.00	1.00	0.50	0.50	0.50	0.50	0.50
2	50	11/03/1968	46.00	1.00	0.50	0.50	0.50	0.50	0.50
7	94	14/12/1974	39.00	1.00	0.50	0.50	0.50	0.50	0.50
Total					**1.50**	**1.50**	**1.50**	**1.50**	**1.50**

1.1.8. Interest on Working Capital

The Petitioner has worked out the working capital requirement based on the normative parameters prescribed in Para 25 (v) of the UPERC Generation Tariff Regulations 2014. The rate of interest on working capital has been considered on normative basis as the Bank Rate as on 1.4.2014 or as on 1st April ofthe year during the tariff period 2014-15 to 2018-19in which the generatingstation or a unit thereof is declared under commercial operation, whicheveris later.

The Petitioner for this Petition has considered the interest rate on working capital requirement at 12.50% including margin being the Bank rate as specified by the Reserve Bank of India as on 1st April 2014.

Further the Hon'ble Commission has provided the following norms for the purpose of calculating of the normative working capital for coalbased generating stations:

i. Cost of coal for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor orthe maximum coal stock storage capacity whichever is lower
ii. Cost of coal for 30 days for generation corresponding to the target availability
iii. Cost of secondary fuel oil for two months corresponding to the target availability and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;

iv. Operation and Maintenance expenses for one month;
v. Maintenance spares @ 20% of operation and maintenance expenses; and
vi. Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the target availability.

Based on the above premise, the computation of interest on working capital for the control period for kind consideration and approval of the Hon'ble Commission are as per table below:

Table: Interest on Working Capital for the Control Period

(All figures in Rs Crs)

Obra A	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal	32.57	34.20	35.91	37.70	39.59
Cost of Main Secondary Fuel Oil	2.84	2.98	3.13	3.29	3.45
Fuel Cost	0.00	0.00	0.00	0.00	0.00
Liquid Fuel Stock	0.00	0.00	0.00	0.00	0.00
O & M Expenses	11.10	11.56	12.04	12.53	13.03
Maintenance Spares	26.63	27.74	28.89	30.07	31.28
Receivables	66.82	69.41	72.15	75.13	78.34
Total Working Capital	139.95	145.88	152.10	158.71	165.69
Rate of Interest	12.50%	12.50%	12.50%	12.50%	12.50%
Interest on Working Capital	**17.49**	**18.24**	**19.01**	**19.84**	**20.71**

1.1.9. Summary of Annual Capacity (Fixed) Charges

In view of the above submissions, the fixed cost of the Petitioner's Obra A TPS for the control period under consideration works out at as under:

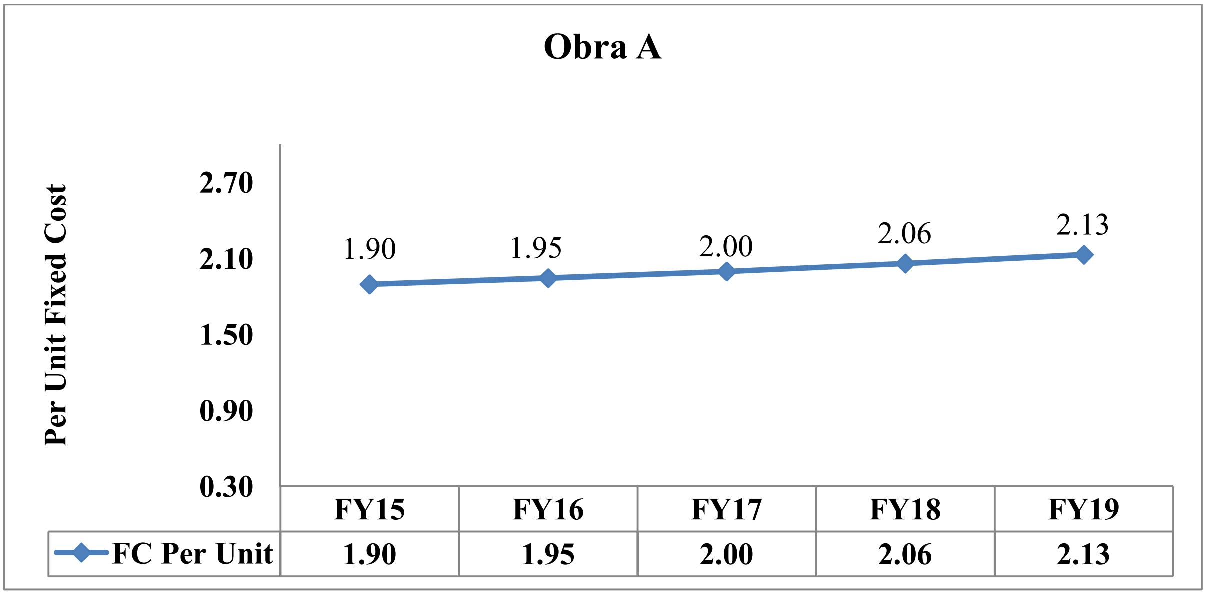
Table: Summary of Annual Capacity (Fixed) Charges for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	12.74	12.74	12.74	12.74	12.74
Interest on Loan Capital	11.14	9.73	8.50	7.97	7.97
Return on Equity	12.47	12.47	12.47	12.47	12.47
O&M Expenses	133.14	138.70	144.43	150.34	156.41
Compensation Allowance	1.50	1.50	1.50	1.50	1.50
Interest on Working Capital	17.49	18.24	19.01	19.84	20.71

Total Capacity Charges	**188.48**	**193.38**	**198.66**	**204.86**	**211.81**
Energy ex bus	994	994	994	994	994
FC per unit	**1.90**	**1.95**	**2.00**	**2.06**	**2.13**

Graph: Fixed Cost per unit in the Control Period



1.2. Energy Charges

The following table highlights the normative parameters which the Hon'ble Commission has prescribed for the control period of FY 2014-15 to FY 2018-19:

Table Normative Operating Parameters for the Control Period

As per Tariff Generation Regulations for MYT FY 2015 to FY 2019

Normative Parameters	Unit	FY15	FY16	FY17	FY18	FY19
Target Availability	%	70%	70%	70%	70%	70%
Target PLF	%	65%	65%	65%	65%	65%
Aux Energy Consumption	%	10%	10%	10%	10%	10%
Gross Heat Rate	Kcal/kWh	2890	2890	2890	2890	2890
Specific Fuel Oil Cons	ml/kWh	3.2	3.2	3.2	3.2	3.2

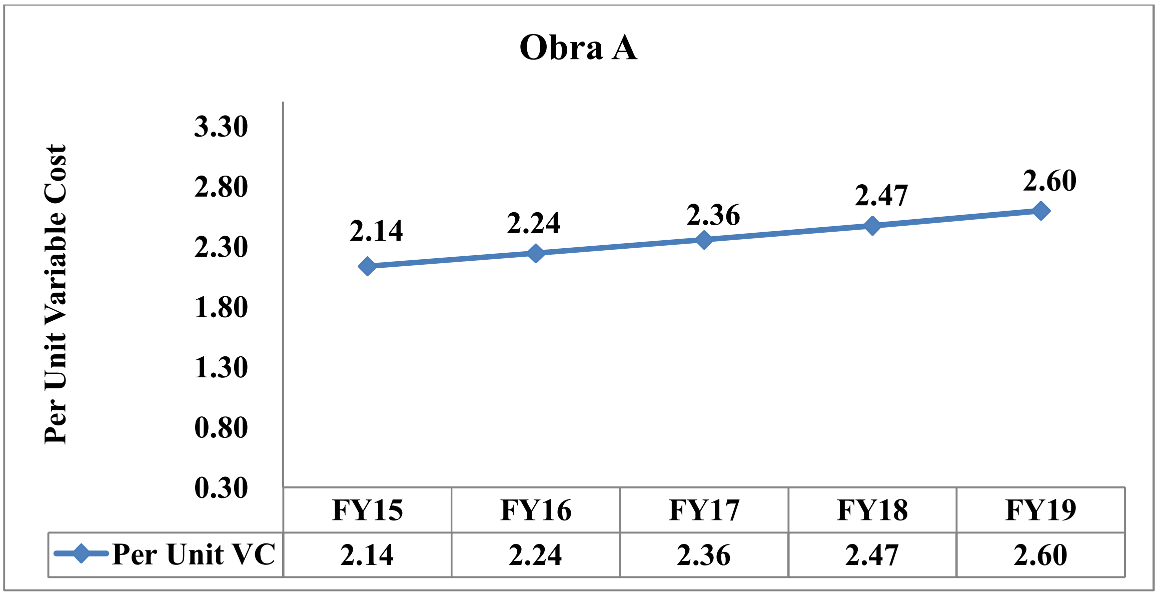
For the purpose of calculations of energy charges for FY 2014-15, the average of the actual GCV of coal and oil and actual cost thereof of the ending three months (October to December 2014) has been taken for the purpose of calculations of energy charges. The Petitioner has assumed an annual Escalation Rate of 5% in the price of fuels over the five year control period starting from the financial year 2014-15 upto FY 2018-19

Energy charges for the control period have been projected based on the operating parameters prescribed in the Generation Tariff Regulations. A summarized position of energy charges proposed for the control period is given in Table below: (The details are available in tariff filing formats prescribed by the Hon'ble Commission)

Table: Calculation of Energy Charges for the Control Period

Description	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Capacity	MW	194	194	194	194	194
PLF	%	65%	65%	65%	65%	65%
Gross Station Heat Rate	Kcal/kWh	2890	2890	2890	2890	2890
Auxiliary Energy Consumption	%	10.0%	10.0%	10.0%	10.0%	10.0%
Energy Generation – Gross	MU	1,105	1,105	1,105	1,105	1,105
Auxiliary Energy Consumption	MU	110	110	110	110	110
Ex-bus Energy Sent Out	MU	994	994	994	994	994
Specific Oil Consumption	ml/kWh	3.20	3.20	3.20	3.20	3.20
Wt. Avg. GCV of Oil	KCal/Lt	10,429	10,429	10,429	10,429	10,429
Price of Oil	Rs./KL	48,187	50,597	53,126	55,783	58,572
Wt. Avg. GCV of Coal	kCal/kg	3430	3430	3430	3430	3430
Price of Coal	Rs./MT	2124	2230	2342	2459	2582
Heat Contribution from SFO	Kcal/kWh	33	33	33	33	33
Oil Consumption	KL	3535	3535	3535	3535	3535
Heat Contribution from Coal	Kcal/kWh	2857	2857	2857	2857	2857
Specific Coal Consumption	kg/kWh	0.83	0.83	0.83	0.83	0.83
Coal Consumption	MMT	0.92	0.92	0.92	0.92	0.92
Total Cost of Oil	Rs Cr	17.03	17.89	18.78	19.72	20.70
Total Cost of Coal	Rs Cr	195.41	205.18	215.44	226.21	237.52
Total Fuel Cost	Rs Cr	212.44	223.06	234.22	245.93	258.22
Rate of Energy Charge from Secondary Fuel Oil ex-bus	Paise/kWh	17.13	17.99	18.89	19.83	20.83
Rate of Energy Charge from Coal ex-bus	Paise/kWh	196.55	206.38	216.70	227.53	238.91
Rate of Energy Charge ex-bus per kWh	Paise/kWh	213.69	224.37	235.59	247.37	259.74

Graph: Variable Cost per unit in the Control Period



1.2.1. Fuel Cost Adjustment

Regulation 26 (i) (ii) & (iii) of the Generation Tariff Regulations 2014, provide the mechanism for claiming the adjustment of rate of energy charges on account of variation in price and heat values of fuels.

"Initially, Gross Calorific Value of coal or gas or liquid fuel shall be taken as per actual of the preceding three months. Any variation shall be adjusted on month to month basis on the basis of Gross Calorific Value of coal or gas or liquid fuel received and burnt and landed cost incurred by the generating company for procurement of coal, oil, or gas or liquid fuel, as the case may be. No separate petition need to be filed with the Commission for fuel price adjustment. In case of any dispute, an appropriate application in accordance with Uttar Pradesh Electricity Regulatory Commission (Conduct of Business) Regulations 2004, as amended from time to time or any statutory re-enactment thereof, shall be made before the Commission"

Accordingly the Petitioner would raise bills for recovery of Fuel Cost Adjustment.

OBRA ‘B’ TPS

OBRA 'B' THERMAL POWER STATION

MULTI YEAR TARIFF PETITION

FOR

DETERMINATION OF TARIFF FOR

CONTROL PERIOD

FY 2014-15 to FY 2018-19

UPRVUNL

UP RAJYA VIDYUT UTPADAN NIGAM LTD

1. ANNUAL REVENUE REQUIREMENT & MULTI-YEAR TARIFF PETITION OF ‘OBRA B TPS’

The following sections detail the Annual Revenue Requirement and Tariff Petition of Obra BTPS for the five year control period of FY 2014-15 to FY 2018-19

1.1. Annual Capacity (Fixed Charges) Charges

As per tariff regulations the annual capacity (fixed) charges consist of

a. Interest on Loan Capital

b. Depreciation including Advance against Depreciation

c. Return on Equity

d. Operation and maintenance expenses including insurance and

e. Interest on Working Capital

f. Compensation Allowance

1.1.1. Gross Fixed Assets

Regulation 19.3 of the UPERC Generation Regulations, 2014 provide the basis for determination of final tariff of an existing project based on the admitted capital cost which shall include:

a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;
b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 22; and
c) Expenditure on account of renovation and modernization as admitted by this Commission in accordance with Regulation 22.

Accordingly the Petitioner for the purpose of this MYT petition for the control period FY 2014-15 to FY 2018-19 has considered the opening GFA balance as on 01.04.2014 equal to the closing GFA balance submitted in the final true-up petition for FY 2013-14 filed along

with the MYT petition being in line with the clause 19.3(c) of the Generation Regulations, 2014.

In this MYT Tariff Petition, the Petitioner is submitting the detailed asset wise list of its fixed assets for the control period FY 2014-15 to FY 2018-19. The Petitioner has considered the opening Gross Fixed Assets for FY 2014-15 on the basis of Final Accounts of FY 2013-14 and have subsequently added the yearly capitalizations for FY 2014-15 to FY 2018-19 as considered in the foregoing sections based on the proposed R&M/Refurbishment & Up-rating schemes, if any.

Accordingly the following table depicts the proposed Gross Fixed Asset balances along with the yearly capitalizations (if any) for the Control period FY 2014-15 to FY 2018-19:

Table: - Gross Fixed Assets Summary - FY 2014-15 to FY 2018-19

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	849.89	849.89	849.89	849.89	849.89
Capitalisation	-	-	-	-	-
Deletions	-	-	-	-	-
Closing GFA	**849.89**	**849.89**	**849.89**	**849.89**	**849.89**

1.1.2. Means of Finance

The Hon'ble Commission in its order dated 20th March 2012 and True-up Order dated 14th March, 2013 had prescribed a normative approach of financing of the capital expenditure in the ratio of 70% debt and 30% equity in line with the Tariff Regulations. Further the allowable depreciation had been considered as normative loan repayment.

In order to maintain consistency in approach, the Petitioner has considered the aforementioned philosophy and calculated the normative debt and normative equity. The opening values of accumulated depreciation, normative loan and normative equity as on 1.4.2014 has been adopted from the true-up petition filed for FY 2013-14. Accordingly the gross fixed asset balance, the net fixed asset balance and its financing is presented in the table below:

Table: Calculation of GFA, NFA and its financing

Figures in Rs Crore

Obra 'B' Power Station	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	849.89	849.89	849.89	849.89	849.89
Additions	-	-	-	-	-
Deletions	-	-	-	-	-
Closing GFA	**849.89**	**849.89**	**849.89**	**849.89**	**849.89**
Closing Net FA	**399.01**	**353.63**	**308.25**	**262.87**	**217.48**
Financing:					
Opening Equity	234.61	234.61	234.61	234.61	234.61
Additions	-	-	-	-	-
Closing Equity	**234.61**	**234.61**	**234.61**	**234.61**	**234.61**
Open. Accumulated Depreciation	405.50	450.88	496.26	541.64	587.03
Depreciation during the year	45.38	45.38	45.38	45.38	45.38
Closing Accumulated Depreciation	**450.88**	**496.26**	**541.64**	**587.03**	**632.41**
Opening Debts	210.21	164.83	119.45	74.06	28.68
Additions	-	-	-	-	-
Less: Depreciation (normative repayment)	45.38	45.38	45.38	45.38	28.68
Closing Debts	**164.83**	**119.45**	**74.06**	**28.68**	**-**

1.1.3. Interest on Loan Capital

Regulation 25(i) of the UPERC Generation Regulations, 2014 provide the basis for computation of Interest on loan capital. It states that the Interest on loan capital shall be computed on the loans arrived at in the manner indicated in Regulation 24 i.e in the approved Debt: Equity ratio. The loan outstanding as on 1st April 2014 shall be worked out as the gross loan as per Regulation 24 minus cumulative repayment as admitted by the Commission up to 31st March 2014. The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year. In case of decapitalisation of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of decapitalisation of such asset.

Further, the rate of the interest shall be the weighted average rate of interest calculated on the basis of actual loans at the beginning of each year and shall be adjusted based on actual loan each year

accordingly. If there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average of interest shall be considered.

Further, It is reiterated that the Petitioner has considered a normative tariff approach with a gearing of 70:30 as considered by the Hon'ble Commission in its True-up Order dated 14th November, 2014. In this approach, 70% of the capital expenditure undertaken in any year has been considered to be financed through loan and balance 30% has been considered to be funded through equity contributions.

Allowable depreciation for the year has been considered as normative loan repayment. The weighted average rate of interest of overall long term loan portfolio for FY 2013-14 has been considered for FY 2014-15 to FY 2018-19, as it seems to be fair and equitable.

Considering the debt worked out as above and applying the rate of 12.50%, the interest on loan capital has been worked out in the table below:

Table: Summary of Interest on Loan for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Debts	210.21	164.83	119.45	74.06	28.68
Additions	-	-	-	-	-
Less: Normative repayment	45.38	45.38	45.38	45.38	28.68
Closing Debts	**164.83**	**119.45**	**74.06**	**28.68**	**-**
Average Debt	187.52	142.14	96.75	51.37	14.34
Interest on Loan	**21.49**	**16.29**	**11.09**	**5.89**	**1.64**

1.1.4. Depreciation

The Petitioner submits that the depreciation as per accounts is calculated as per the prescription of New Companies Act, 2013 which is depicted in the accounting policies annexed with the audited accounts. However the Tariff Regulations prescribe that the eligible depreciation shall be calculated annually, based on straight line method over the useful life of the asset and the rates prescribed in Appendix III of such regulations. It is noteworthy of mentioning that the Appendix III prescribes distinct depreciation rates for each class of assets.

The Petitioner has provided the asset class wise list of gross fixed assets in Form 12 of the tariff formats submitted along with this petition. Accordingly the Petitioner has calculated the eligible depreciation based on the rates prescribed in the tariff regulations.

The Petitioner reiterates that the detailed asset wise list is now available with the Hon'ble Commission. Such values are in accordance with the audited financial statements of the Petitioner. The rates of depreciation prescribed by the Hon'ble Commission in Appendix 3 of the Generation Tariff Regulations prescribe different depreciation rates for different assets. In such circumstances it would only be fit to consider station wise depreciation calculated at the rates prescribed in Appendix 3 for different asset classes and not at the average rate.

While calculating the allowable depreciation, the petitioner has considered the residual life of the asset as 10% and depreciation has been considered up to maximum of 90% of the historical capital cost of the asset being in line with the provisions of the Generation Regulations, 2014.

The value of Gross Fixed Assets has been discussed in foregoing sections. The Petitioner has calculated station wise depreciation, on the Gross Fixed Asset (GFA) value of all the plants owned by it, at the rates specified in the Appendix 3 of Generation Tariff Regulations 2014.

The allowable depreciation is depicted in the table below:

Table: Depreciation Summary for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation as per Annexure III of the Regulations	45.38	45.38	45.38	45.38	45.38
Allowable Depreciation subject to maximum of 90% of the Capital Cost	45.38	45.38	45.38	45.38	45.38

1.1.5. Return on Equity

Regulation 25(iii) of the UPERC Generation Regulations, 2014 provides the base for determination of Return on Equity for the purpose of computation of fixed charges. The said

regulations state that the Return on equity shall be computed in rupee terms on the equity base determined in accordance with Regulation 24 @15.5% per annum.

The equity base for the thermal power station as on 01.04.2014 has been considered as the closing equity balance for FY 2013-14 as submitted by the petitioner in its final true-up petition for FY 2013-14 submitted along with the MYT Petition. Thereafter 30% of the total capitalisation has been considered to be funded from equity infusion in each year of the control period.

As per the Generation Tariff Regulations, equity would be eligible for return when the asset is commissioned. Accordingly the table below provides the summary of equity base eligible for return and the Return on Equity claimed by the petitioner for the control period:

Table: Return on Equity for the Control Period (FY 2014-15 to FY 2018-19)

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	234.61	234.61	234.61	234.61	234.61
Additions	-	-	-	-	-
Closing Equity	**234.61**	**234.61**	**234.61**	**234.61**	**234.61**
Rate of Return on Equity (%)	15.5%	15.5%	15.5%	15.5%	15.5%
Allowable RoE	**36.36**	**36.36**	**36.36**	**36.36**	**36.36**

1.1.6. Operation & Maintenance Expenses

Regulation 21(iv) of the UPERC Generation Regulations, 2014 deals with the allowance of O&M expenses. The Hon'ble Commission in the generation tariff regulations – Para 25 (iv) (a) have prescribed the yearly O&M expenses for the control period FY 2014-15 to FY 2018-19 based upon the Installed Capacity for the thermal power stations other than plant for Obra A, Obra B, Panki, Harduaganj & Parichha TPS. The Hon'ble Commission has provided special dispensation in the O&M norms for the Thermal power plants namely Obra A, Obra B, Panki, Harduaganj & Parichha TPS, the same have been provided in the Para 25(iv)(b) of the Generation Regulation.

Accordingly based on the above stated norms the O&M expenses allowed for the power station for the Control period is depicted in the table below:

Table: O&M expense for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Capaicty (MW)	1000	1000	1000	1000	1000
Norms (Rs Lakh/MW)	23.90	25.40	27.00	28.70	30.51
O&M Expenses (Rs Crore)	**239.00**	**254.00**	**270.00**	**287.00**	**305.10**

Further the Hon'ble Commission in its Para 25(iv) Note (c) has stated that the expenses on account of regulatory fee, payment to pollution control board, impact of pay revision, capital spares, cost of water and water cess shall be paid additionally at actuals subject to prudence check.

Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization.

1.1.7. Compensation Allowance

Para 25 (iv) Note (d) of the UPERC Generation Tariff Regulations 2014 prescribe a separate compensation allowance in case of coal-based thermal generating stations unit-wise, to meet expenses in nature of capital expenditure on replacement of minor assets which are not admissible under Regulation 22 of the regulations. The regulations further state that the revision of the capital cost shall not be allowed on account of compensation allowance but the compensation allowance shall be allowed to be recovered separately.

The following table summarizes the Petitioner's entitlement for Compensation allowance:

Table: Unit-wise Compensation Allowance for the Control Period

(All figures in Rs Crs)

Unit No.	Declared Capacity	Date of Commercial Operation	Age of Plant as on 31.03.2014	Compensation Allowance (Rs/Lakh/MW/Year)	FY 15	FY 16	FY 17	FY 18	FY 19
9	200	15-03-1980	34.00	1.00	2.00	2.00	2.00	2.00	2.00

Unit No.	Declared Capacity	Date of Commercial Operation	Age of Plant as on 31.03.2014	Compensation Allowance (Rs/Lakh/MW/Year)	FY 15	FY 16	FY 17	FY 18	FY 19
10	200	06-03-1979	35.00	1.00	2.00	2.00	2.00	2.00	2.00
11	200	14-03-1978	36.00	1.00	2.00	2.00	2.00	2.00	2.00
12	200	29-05-1981	32.00	1.00	2.00	2.00	2.00	2.00	2.00
13	200	29-07-1982	31.00	1.00	2.00	2.00	2.00	2.00	2.00
Total					**10.00**	**10.00**	**10.00**	**10.00**	**10.00**

1.1.8. Interest on Working Capital

The Petitioner has worked out the working capital requirement based on the normative parameters prescribed in Para 25 (v) of the UPERC Generation Tariff Regulations 2014. The rate of interest on working capital has been considered on normative basis as the Bank Rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof is declared under commercial operation, whichever is later.

The Petitioner for this Petition has considered the interest rate on working capital requirement at 12.50% including margin being the Bank rate as specified by the Reserve Bank of India as on 1st April 2014.

Further the Hon'ble Commission has provided the following norms for the purpose of calculating of the normative working capital for coal based generating stations:

i. Cost of coal for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal stock storage capacity whichever is lower
ii. Cost of coal for 30 days for generation corresponding to the target availability
iii. Cost of secondary fuel oil for two months corresponding to the target availability and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;
iv. Operation and Maintenance expenses for one month;
v. Maintenance spares @ 20% of operation and maintenance expenses; and
vi. Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the target availability.

Based on the above premise, the computation of interest on working capital for the control period for kind consideration and approval of the Hon'ble Commission are as per table below:

Table: Interest on Working Capital for the Control Period

(All figures in Rs Crs)

Obra B	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal	182.02	191.12	200.67	210.71	221.24
Cost of Main Secondary Fuel Oil	11.08	11.63	12.22	12.83	13.47
Fuel Cost	0.00	0.00	0.00	0.00	0.00
Liquid Fuel Stock	0.00	0.00	0.00	0.00	0.00
O & M Expenses	19.92	21.17	22.50	23.92	25.43
Maintenance Spares	47.80	50.80	54.00	57.40	61.02
Receivables	262.71	274.53	287.04	300.24	314.36
Total Working Capital	523.52	549.25	576.42	605.09	635.52
Rate of Interest	12.50%	12.50%	12.50%	12.50%	12.50%
Interest on Working Capital	**65.44**	**68.66**	**72.05**	**75.64**	**79.44**

1.1.9. Summary of Annual Capacity (Fixed) Charges

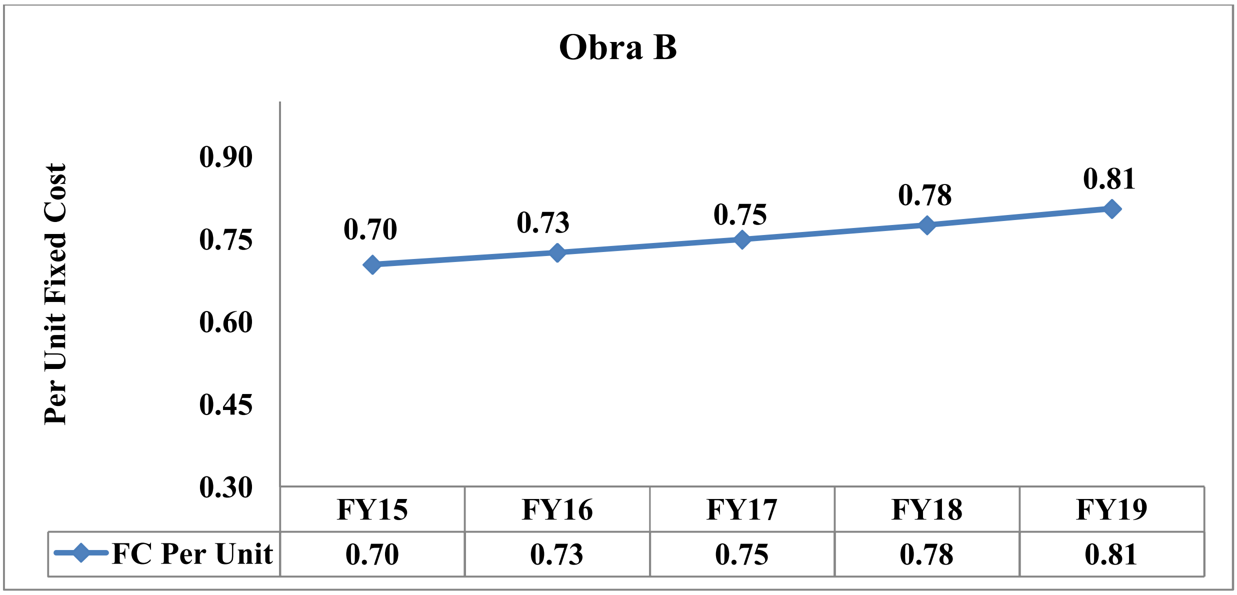
In view of the above submissions, the fixed cost of the Petitioner's Obra B TPS for the control period under consideration works out at as under:

Table: Summary of Annual Capacity (Fixed) Charges for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	45.38	45.38	45.38	45.38	45.38
Interest on Loan Capital	21.49	16.29	11.09	5.89	1.64
Return on Equity	36.36	36.36	36.36	36.36	36.36
O&M Expenses	239.00	254.00	270.00	287.00	305.10
Compensation Allowance	10.00	10.00	10.00	10.00	10.00
Interest on Working Capital	65.44	68.66	72.05	75.64	79.44
Total Capacity Charges	**417.68**	**430.69**	**444.89**	**460.27**	**477.93**
Energy ex bus	5933	5933	5933	5933	5933
FC per unit	**0.70**	**0.73**	**0.75**	**0.78**	**0.81**

Graph: Fixed Cost per unit in the Control Period



1.2. Energy Charges

The following table highlights the normative parameters which the Hon'ble Commission has prescribed for the control period of FY 2014-15 to FY 2018-19:

Table Normative Operating Parameters for the Control Period

As per Tariff Generation Regulations for MYT FY 2015 to FY 2019

Normative Parameters	Unit	FY15	FY16	FY17	FY18	FY19
Target Availability	%	80%	80%	80%	80%	80%
Target PLF	%	75%	75%	75%	75%	75%
Aux Energy Consumption	%	9.7%	9.7%	9.7%	9.7%	9.7%
Gross Heat Rate	Kcal/kWh	2755	2755	2755	2755	2755
Specific Fuel Oil Cons	ml/kWh	2.1	2.1	2.1	2.1	2.1

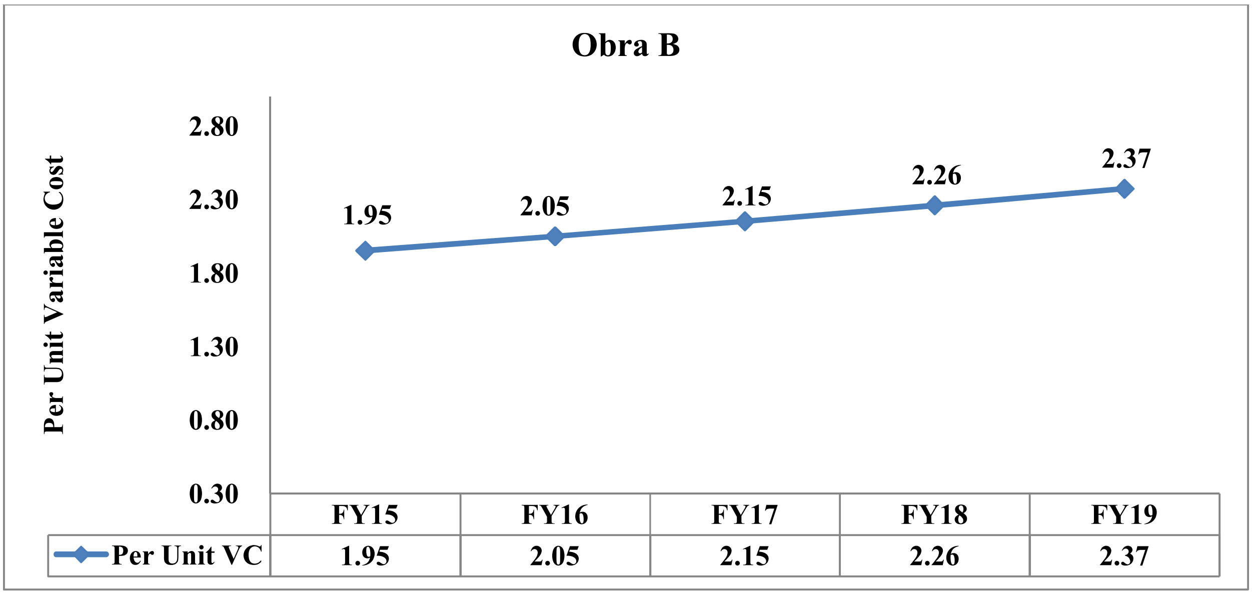
For the purpose of calculations of energy charges for FY 2014-15, the average of the actual GCV of coal and oil and actual cost thereof of the ending three months (October to December 2014) has been taken for the purpose of calculations of energy charges. The Petitioner has assumed an annual Escalation Rate of 5% in the price of fuels over the five year control period starting from the financial year 2014-15 upto FY 2018-19

Energy charges for the control period have been projected based on the operating parameters prescribed in the Generation Tariff Regulations. A summarized position of energy charges proposed for the control period is given in Table below: (The details are available in tariff filing formats prescribed by the Hon'ble Commission)

Table: Calculation of Energy Charges for the Control Period

Description	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Capacity	MW	1000	1000	1000	1000	1000
PLF	%	75%	75%	75%	75%	75%
Gross Station Heat Rate	Kcal/kWh	2755	2755	2755	2755	2755
Auxiliary Energy Consumption	%	9.70%	9.70%	9.70%	9.70%	9.70%
Energy Generation - Gross	MU	6,570	6,570	6,570	6,570	6,570
Auxiliary Energy Consumption	MU	637	637	637	637	637
Ex-bus Energy Sent Out	MU	5,933	5,933	5,933	5,933	5,933
Specific Oil Consumption	ml/kWh	2.10	2.10	2.10	2.10	2.10
Wt. Avg. GCV of Oil	KCal/Lt	10,429	10,429	10,429	10,429	10,429
Price of Oil	Rs./KL	48,187	50,597	53,126	55,783	58,572
Wt. Avg. GCV of Coal	kCal/kg	3430	3430	3430	3430	3430
Price of Coal	Rs./MT	2086	2190	2300	2415	2536
Heat Contribution from SFO	Kcal/kWh	22	22	22	22	22
Oil Consumption	KL	13797	13797	13797	13797	13797
Heat Contribution from Coal	Kcal/kWh	2733	2733	2733	2733	2733
Specific Coal Consumption	kg/kWh	0.80	0.80	0.80	0.80	0.80
Coal Consumption	MMT	5.24	5.24	5.24	5.24	5.24
Total Cost of Oil	Rs Cr	66.48	69.81	73.30	76.96	80.81
Total Cost of Coal	Rs Cr	1,092.09	1,146.70	1,204.03	1,264.23	1,327.44
Total Fuel Cost	Rs Cr	1,158.58	1,216.50	1,277.33	1,341.20	1,408.26
Rate of Energy Charge from Secondary Fuel Oil ex-bus	Paise/kWh	11.21	11.77	12.35	12.97	13.62
Rate of Energy Charge from Coal ex-bus	Paise/kWh	184.08	193.28	202.95	213.10	223.75
Rate of Energy Charge ex-bus per kWh	Paise/kWh	195.29	205.05	215.30	226.07	237.37

Graph: Variable Cost per unit in the Control Period



1.2.1. Fuel Cost Adjustment

Regulation 26 (i) (ii) & (iii) of the Generation Tariff Regulations 2014, provide the mechanism for claiming the adjustment of rate of energy charges on account of variation in price and heat values of fuels.

"Initially, Gross Calorific Value of coal or gas or liquid fuel shall be taken as per actual of the preceding three months. Any variation shall be adjusted on month to month basis on the basis of Gross Calorific Value of coal or gas or liquid fuel received and burnt and landed cost incurred by the generating company for procurement of coal, oil, or gas or liquid fuel, as the case may be. No separate petition need to be filed with the Commission for fuel price adjustment. In case of any dispute, an appropriate application in accordance with Uttar Pradesh Electricity Regulatory Commission (Conduct of Business) Regulations 2004, as amended from time to time or any statutory re-enactment thereof, shall be made before the Commission"

Accordingly the Petitioner would raise bills for recovery of Fuel Cost Adjustment.

HARDUAGANJ TPS

HARDUAGANJ THERMAL POWER STATION

MULTI YEAR TARIFF PETITION

FOR

DETERMINATION OF TARIFF FOR

CONTROL PERIOD

FY 2014-15 to FY 2018-19

UPRVUNL

UP RAJYA VIDYUT UTPADAN NIGAM LTD

1. ANNUAL REVENUE REQUIREMENT & MULTI-YEAR TARIFF PETITION OF 'HARDUAGNJ TPS'

The following sections detail the Annual Revenue Requirement and Tariff Petition of Harduaganj TPS for the five year control period of FY 2014-15 to FY 2018-19

1.1. Annual Capacity (Fixed Charges) Charges

As per tariff regulations the annual capacity (fixed) charges consist of

a. Interest on Loan Capital

b. Depreciation including Advance against Depreciation

c. Return on Equity

d. Operation and maintenance expenses including insurance and

e. Interest on Working Capital

f. Compensation Allowance

1.1.1. Gross Fixed Assets

Regulation 19.3 of the UPERC Generation Regulations, 2014 provide the basis for determination of final tariff of an existing project based on the admitted capital cost which shall include:

a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;
b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 22; and
c) Expenditure on account of renovation and modernization as admitted by this Commission in accordance with Regulation 22.

Accordingly the Petitioner for the purpose of this MYT petition for the control period FY 2014-15 to FY 2018-19 has considered the opening GFA balance as on 01.04.2014 equal to the closing GFA balance submitted in the final true-up petition for FY 2013-14 filed along

with the MYT petition being in line with the clause 19.3(c) of the Generation Regulations, 2014.

In this MYT Tariff Petition, the Petitioner is submitting the detailed asset wise list of its fixed assets for the control period FY 2014-15 to FY 2018-19. The Petitioner has considered the opening Gross Fixed Assets for FY 2014-15 on the basis of Final Accounts of FY 2013-14 and have subsequently added the yearly capitalizations for FY 2014-15 to FY 2018-19 as considered in the foregoing sections based on the proposed R&M/Refurbishment & Up-rating schemes, if any.

Accordingly the following table depicts the proposed Gross Fixed Asset balances along with the yearly capitalizations (if any) for the Control period FY 2014-15 to FY 2018-19:

Table: - Gross Fixed Assets Summary - FY 2014-15 to FY 2018-19

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	145.42	145.42	145.42	145.42	145.42
Capitalisation	-	-	-	-	-
Deletions	-	-	-	-	-
Closing GFA	**145.42**	**145.42**	**145.42**	**145.42**	**145.42**

1.1.2. Means of Finance

The Hon'ble Commission in its order dated 20th March 2012 and True-up Order dated 14th March, 2013 had prescribed a normative approach of financing of the capital expenditure in the ratio of 70% debt and 30% equity in line with the Tariff Regulations. Further the allowable depreciation had been considered as normative loan repayment.

In order to maintain consistency in approach, the Petitioner has considered the aforementioned philosophy and calculated the normative debt and normative equity. The opening values of accumulated depreciation, normative loan and normative equity as on 1.4.2014 has been adopted from the true-up petition filed for FY 2013-14. Accordingly the gross fixed asset balance, the net fixed asset balance and its financing is presented in the table below:

Table: Calculation of GFA, NFA and its financing

Figures in Rs Crore

Harduaganj Power Station	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	145.42	145.42	145.42	145.42	145.42
Additions	-	-	-	-	-
Deletions	-	-	-	-	-
Closing GFA	**145.42**	**145.42**	**145.42**	**145.42**	**145.42**
Closing Net FA	**30.63**	**24.29**	**24.29**	**24.29**	**24.29**
Financing:					
Opening Equity	44.63	44.63	44.63	44.63	44.63
Additions	-	-	-	-	-
Closing Equity	**44.63**	**44.63**	**44.63**	**44.63**	**44.63**
Open. Accumulated Depreciation	107.73	114.79	121.13	121.13	121.13
Depreciation during the year	7.06	6.34	-	-	-
Closing Accumulated Depreciation	**114.79**	**121.13**	**121.13**	**121.13**	**121.13**
Opening Debts	-	-	-	-	-
Additions	-	-	-	-	-
Less: Depreciation (normative repayment)	-	-	-	-	-
Closing Debts	**-**	**-**	**-**	**-**	**-**

1.1.3. Interest on Loan Capital

Regulation 25(i) of the UPERC Generation Regulations, 2014 provide the basis for computation of Interest on loan capital. It states that the Interest on loan capital shall be computed on the loans arrived at in the manner indicated in Regulation 24 i.e in the approved Debt: Equity ratio. The loan outstanding as on 1st April 2014 shall be worked out as the gross loan as per Regulation 24 minus cumulative repayment as admitted by the Commission up to 31st March 2014. The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year. In case of decapitalisation of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of decapitalisation of such asset.

Further, the rate of the interest shall be the weighted average rate of interest calculated on the basis of actual loans at the beginning of each year and shall be adjusted based on actual loan each year

accordingly. If there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average of interest shall be considered.

Further, It is reiterated that the Petitioner has considered a normative tariff approach with a gearing of 70:30 as considered by the Hon'ble Commission in its True-up Order dated 14th November, 2014. In this approach, 70% of the capital expenditure undertaken in any year has been considered to be financed through loan and balance 30% has been considered to be funded through equity contributions.

Allowable depreciation for the year has been considered as normative loan repayment. The weighted average rate of interest of overall long term loan portfolio for FY 2013-14 has been considered for FY 2014-15 to FY 2018-19, as it seems to be fair and equitable.

Considering the debt worked out as above and applying the rate of 12.50%, the interest on loan capital has been worked out in the table below:

Table: Summary of Interest on Loan for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Debts	-	-	-	-	-
Additions	-	-	-	-	-
Less: Normative repayment	-	-	-	-	-
Closing Debts	**-**	**-**	**-**	**-**	**-**
Average Debt	-	-	-	-	-
Interest on Loan	**-**	**-**	**-**	**-**	**-**

1.1.4. Depreciation

The Petitioner submits that the depreciation as per accounts is calculated as per the prescription of New Companies Act, 2013 which is depicted in the accounting policies annexed with the audited accounts. However the Tariff Regulations prescribe that the eligible depreciation shall be calculated annually, based on straight line method over the useful life of the asset and the rates prescribed in Appendix III of such regulations. It is noteworthy of mentioning that the Appendix III prescribes distinct depreciation rates for each class of assets.

The Petitioner has provided the asset class wise list of gross fixed assets in Form 12 of the tariff formats submitted along with this petition. Accordingly the Petitioner has calculated the eligible depreciation based on the rates prescribed in the tariff regulations.

The Petitioner reiterates that the detailed asset wise list is now available with the Hon'ble Commission. Such values are in accordance with the audited financial statements of the Petitioner. The rates of depreciation prescribed by the Hon'ble Commission in Appendix 3 of the Generation Tariff Regulations prescribe different depreciation rates for different assets. In such circumstances it would only be fit to consider station wise depreciation calculated at the rates prescribed in Appendix 3 for different asset classes and not at the average rate.

While calculating the allowable depreciation, the petitioner has considered the residual life of the asset as 10% and depreciation has been considered up to maximum of 90% of the historical capital cost of the asset being in line with the provisions of the Generation Regulations, 2014.

The value of Gross Fixed Assets has been discussed in foregoing sections. The Petitioner has calculated station wise depreciation, on the Gross Fixed Asset (GFA) value of all the plants owned by it, at the rates specified in the Appendix 3 of Generation Tariff Regulations 2014.

The allowable depreciation is depicted in the table below:

Table: Depreciation Summary for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation as per Annexure III of the Regulations	7.06	7.06	7.06	7.06	7.06
Allowable Depreciation subject to maximum of 90% of the Capital Cost	7.06	6.34	0.00	0.00	0.00

1.1.5. Return on Equity

Regulation 25(iii) of the UPERC Generation Regulations, 2014 provides the base for determination of Return on Equity for the purpose of computation of fixed charges. The said

regulations state that the Return on equity shall be computed in rupee terms on the equity base determined in accordance with Regulation 24 @15.5% per annum.

The equity base for the thermal power station as on 01.04.2014 has been considered as the closing equity balance for FY 2013-14 as submitted by the petitioner in its final true-up petition for FY 2013-14 submitted along with the MYT Petition. Thereafter 30% of the total capitalisation has been considered to be funded from equity infusion in each year of the control period.

As per the Generation Tariff Regulations, equity would be eligible for return when the asset is commissioned. Accordingly the table below provides the summary of equity base eligible for return and the Return on Equity claimed by the petitioner for the control period:

Table: Return on Equity for the Control Period (FY 2014-15 to FY 2018-19)

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	44.63	44.63	44.63	44.63	44.63
Additions	-	-	-	-	-
Closing Equity	**44.63**	**44.63**	**44.63**	**44.63**	**44.63**
Rate of Return on Equity (%)	15.5%	15.5%	15.5%	15.5%	15.5%
Allowable RoE	**6.92**	**6.92**	**6.92**	**6.92**	**6.92**

1.1.6. Operation & Maintenance Expenses

Regulation 21(iv) of the UPERC Generation Regulations, 2014 deals with the allowance of O&M expenses. The Hon'ble Commission in the generation tariff regulations – Para 25 (iv) (a) have prescribed the yearly O&M expenses for the control period FY 2014-15 to FY 2018-19 based upon the Installed Capacity for the thermal power stations other than plant for Obra A, Obra B, Panki, Harduaganj & Parichha TPS. The Hon'ble Commission has provided special dispensation in the O&M norms for the Thermal power plants namely Obra A, Obra B, Panki, Harduaganj & Parichha TPS, the same have been provided in the Para 25(iv)(b) of the Generation Regulation.

Accordingly based on the above stated norms the O&M expenses allowed for the power station for the Control period is depicted in the table below:

Table: O&M expense for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Capaicty (MW)	165	165	165	165	165
Norms (Rs Lakh/MW)	53.28	55.51	57.80	60.17	62.60
O&M Expenses (Rs Crore)	**87.91**	**91.59**	**95.37**	**99.28**	**103.29**

Further the Hon'ble Commission in its Para 25(iv) Note (c) has stated that the expenses on account of regulatory fee, payment to pollution control board, impact of pay revision, capital spares, cost of water and water cess shall be paid additionally at actuals subject to prudence check.

Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization.

1.1.7. Compensation Allowance

Para 25 (iv) Note (d) of the UPERC Generation Tariff Regulations 2014 prescribe a separate compensation allowance in case of coal-based thermal generating stations unit-wise, to meet expenses in nature of capital expenditure on replacement of minor assets which are not admissible under Regulation 22 of the regulations. The regulations further state that the revision of the capital cost shall not be allowed on account of compensation allowance but the compensation allowance shall be allowed to be recovered separately.

The following table summarizes the Petitioner's entitlement for Compensation allowance:

Table: Unit-wise Compensation Allowance for the Control Period

(All figures in Rs Crs)

Unit No.	Declared Capacity	Date of Commercial Operation	Age of Plant as on 31.03.2014	Compensation Allowance (Rs/Lakh/MW/Year)	FY 15	FY 16	FY 17	FY 18	FY 19
1	60	14-05-1977	36.00	1.00	0.60	0.60	0.60	0.60	0.60
2	105	01-08-1978	35.00	1.00	1.05	1.05	1.05	1.05	1.05
Total					**1.65**	**1.65**	**1.65**	**1.65**	**1.65**

1.1.8. Interest on Working Capital

The Petitioner has worked out the working capital requirement based on the normative parameters prescribed in Para 25 (v) of the UPERC Generation Tariff Regulations 2014. The rate of interest on working capital has been considered on normative basis as the Bank Rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof is declared under commercial operation, whichever is later.

The Petitioner for this Petition has considered the interest rate on working capital requirement at 12.50% including margin being the Bank rate as specified by the Reserve Bank of India as on 1st April 2014.

Further the Hon'ble Commission has provided the following norms for the purpose of calculating of the normative working capital for coal based generating stations:

i. Cost of coal for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal stock storage capacity whichever is lower
ii. Cost of coal for 30 days for generation corresponding to the target availability
iii. Cost of secondary fuel oil for two months corresponding to the target availability and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;
iv. Operation and Maintenance expenses for one month;
v. Maintenance spares @ 20% of operation and maintenance expenses; and
vi. Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the target availability.

Based on the above premise, the computation of interest on working capital for the control period for kind consideration and approval of the Hon'ble Commission are as per table below:

Table: Interest on Working Capital for the Control Period

(All figures in Rs Crs)

Harduaganj	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal	45.48	47.76	50.14	52.65	55.28
Cost of Main Secondary Fuel Oil	3.00	3.15	3.31	3.48	3.65

Harduaganj	2014-15	2015-16	2016-17	2017-18	2018-19
Fuel Cost	0.00	0.00	0.00	0.00	0.00
Liquid Fuel Stock	0.00	0.00	0.00	0.00	0.00
O & M Expenses	7.33	7.63	7.95	8.27	8.61
Maintenance Spares	17.58	18.32	19.07	19.86	20.66
Receivables	68.70	71.88	75.20	78.67	82.31
Total Working Capital	142.10	148.74	155.68	162.93	170.51
Rate of Interest	12.50%	12.50%	12.50%	12.50%	12.50%
Interest on Working Capital	**17.76**	**18.59**	**19.46**	**20.37**	**21.31**

1.1.9. Summary of Annual Capacity (Fixed) Charges

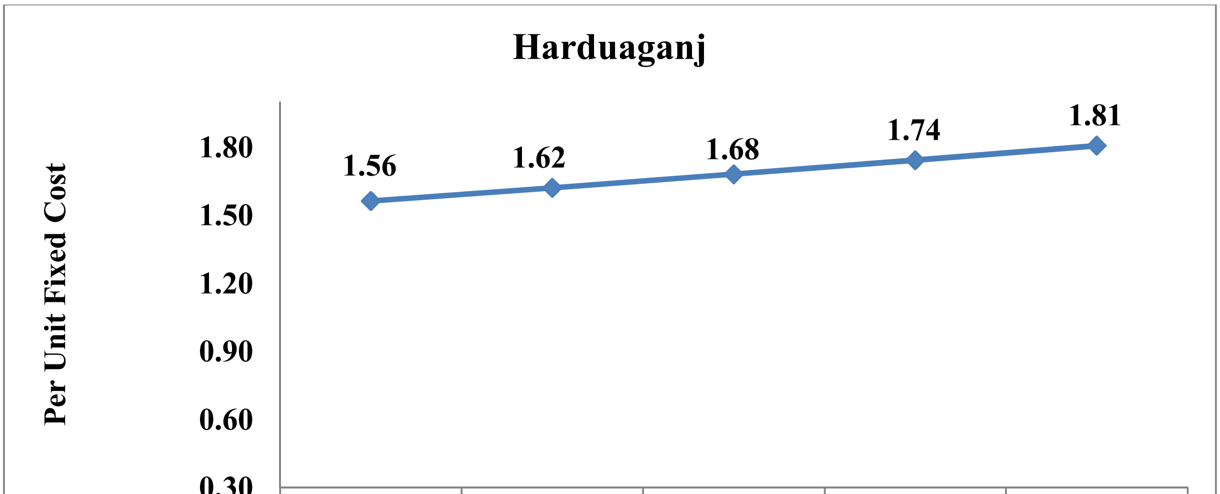
In view of the above submissions, the fixed cost of the Petitioner's Harduaganj TPS for the control period under consideration works out at as under:

Table: Summary of Annual Capacity (Fixed) Charges for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	7.06	7.06	7.06	7.06	7.06
Interest on Loan Capital	0.00	0.00	0.00	0.00	0.00
Return on Equity	6.92	6.92	6.92	6.92	6.92
O&M Expenses	87.91	91.59	95.37	99.28	103.29
Compensation Allowance	1.65	1.65	1.65	1.65	1.65
Interest on Working Capital	17.76	18.59	19.46	20.37	21.31
Total Capacity Charges	**121.31**	**125.82**	**130.46**	**135.28**	**140.24**
Energy ex bus	776	776	776	776	776
FC per unit	**1.56**	**1.62**	**1.68**	**1.74**	**1.81**

Graph: Fixed Cost per unit in the Control Period



	FY15	FY16	FY17	FY18	FY19
FC Per Unit	1.56	1.62	1.68	1.74	1.81

1.2. Energy Charges

The following table highlights the normative parameters which the Hon'ble Commission has prescribed for the control period of FY 2014-15 to FY 2018-19:

Table Normative Operating Parameters for the Control Period

As per Tariff Generation Regulations for MYT FY 2015 to FY 2019

Normative Parameters	Unit	FY15	FY16	FY17	FY18	FY19
Target Availability	%	65%	65%	65%	65%	65%
Target PLF	%	60%	60%	60%	60%	60%
Aux Energy Consumption	%	10.5%	10.5%	10.5%	10.5%	10.5%
Gross Heat Rate	Kcal/kWh	3150	3150	3150	3150	3150
Specific Fuel Oil Cons	ml/kWh	3.7	3.7	3.7	3.7	3.7

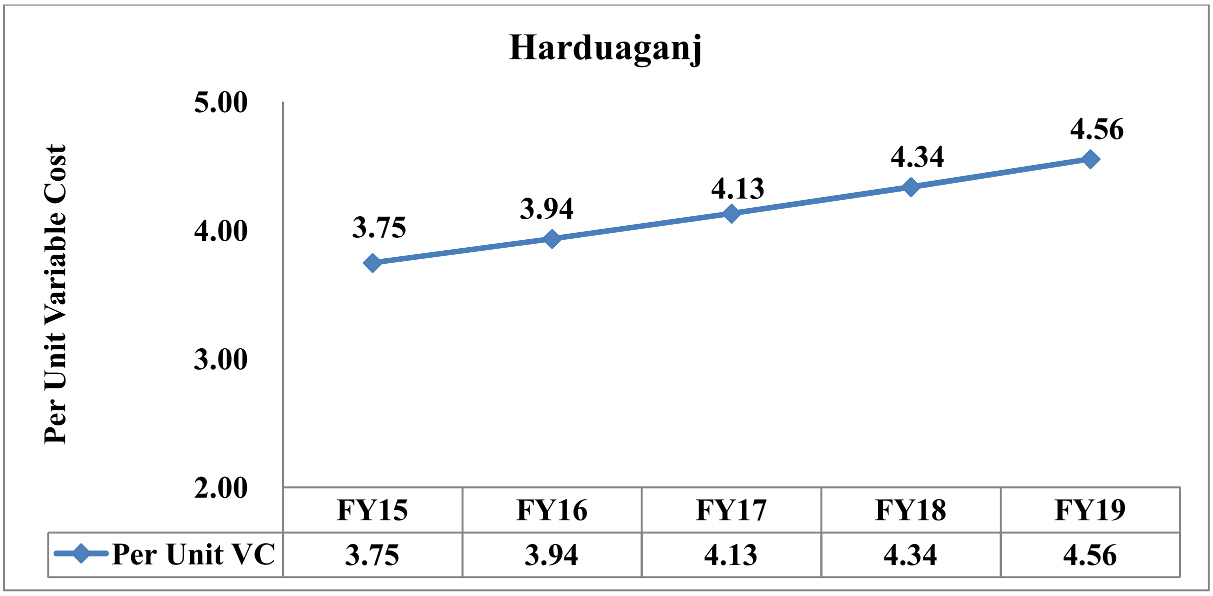
For the purpose of calculations of energy charges for FY 2014-15, the average of the actual GCV of coal and oil and actual cost thereof of the ending three months (October to December 2014) has been taken for the purpose of calculations of energy charges. The Petitioner has assumed an annual Escalation Rate of 5% in the price of fuels over the five year control period starting from the financial year 2014-15 upto FY 2018-19

Energy charges for the control period have been projected based on the operating parameters prescribed in the Generation Tariff Regulations. A summarized position of energy charges proposed for the control period is given in Table below: (The details are available in tariff filing formats prescribed by the Hon'ble Commission)

Table: Calculation of Energy Charges for the Control Period

Description	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Capacity	MW	165	165	165	165	165
PLF	%	60%	60%	60%	60%	60%
Gross Station Heat Rate	Kcal/kWh	3150	3150	3150	3150	3150
Auxiliary Energy Consumption	%	10.50%	10.50%	10.50%	10.50%	10.50%
Energy Generation - Gross	MU	867	867	867	867	867
Auxiliary Energy Consumption	MU	91	91	91	91	91
Ex-bus Energy Sent Out	MU	776	776	776	776	776
Specific Oil Consumption	ml/kWh	3.70	3.70	3.70	3.70	3.70
Wt. Avg. GCV of Oil	KCal/Lt	9,482	9,482	9,482	9,482	9,482
Price of Oil	Rs./KL	56,170	58,978	61,927	65,024	68,275
Wt. Avg. GCV of Coal	kCal/kg	4312	4312	4312	4312	4312
Price of Coal	Rs./MT	4356	4574	4802	5043	5295
Heat Contribution from SFO	Kcal/kWh	35	35	35	35	35
Oil Consumption	KL	3209	3209	3209	3209	3209
Heat Contribution from Coal	Kcal/kWh	3115	3115	3115	3115	3115
Specific Coal Consumption	kg/kWh	0.72	0.72	0.72	0.72	0.72
Coal Consumption	MMT	0.63	0.63	0.63	0.63	0.63
Total Cost of Oil	Rs Cr	18.02	18.92	19.87	20.86	21.91
Total Cost of Coal	Rs Cr	272.89	286.54	300.86	315.91	331.70
Total Fuel Cost	Rs Cr	290.92	305.46	320.73	336.77	353.61
Rate of Energy Charge from Secondary Fuel Oil ex-bus	Paise/kWh	23.22	24.38	25.60	26.88	28.23
Rate of Energy Charge from Coal ex-bus	Paise/kWh	351.58	369.16	387.62	407.00	427.35
Rate of Energy Charge ex-bus per kWh	Paise/kWh	374.80	393.54	413.22	433.88	455.58

Graph: Variable Cost per unit in the Control Period



1.2.1. Fuel Cost Adjustment

Regulation 26 (i) (ii) & (iii) of the Generation Tariff Regulations 2014, provide the mechanism for claiming the adjustment of rate of energy charges on account of variation in price and heat values of fuels.

"Initially, Gross Calorific Value of coal or gas or liquid fuel shall be taken as per actual of the preceding three months. Any variation shall be adjusted on month to month basis on the basis of Gross Calorific Value of coal or gas or liquid fuel received and burnt and landed cost incurred by the generating company for procurement of coal, oil, or gas or liquid fuel, as the case may be. No separate petition need to be filed with the Commission for fuel price adjustment. In case of any dispute, an appropriate application in accordance with Uttar Pradesh Electricity Regulatory Commission (Conduct of Business) Regulations 2004, as amended from time to time or any statutory re-enactment thereof, shall be made before the Commission"

Accordingly the Petitioner would raise bills for recovery of Fuel Cost Adjustment.

HARDUAGANJ EXTN. TPS

HARDUAGANJ EXTN. THERMAL POWER STATION

MULTI YEAR TARIFF PETITION

FOR

DETERMINATION OF TARIFF FOR

CONTROL PERIOD

FY 2014-15 to FY 2018-19

UPRVUNL

UP RAJYA VIDYUT UTPADAN NIGAM LTD

1. ANNUAL REVENUE REQUIREMENT & MULTI-YEAR TARIFF PETITION OF 'HARDUAGANJ EXTN TPS'

The following sections detail the Annual Revenue Requirement and Tariff Petition of Harduaganj Extn. TPS for the five year control period of FY 2014-15 to FY 2018-19

1.1. Annual Capacity (Fixed Charges) Charges

As per tariff regulations the annual capacity (fixed) charges consist of

a. Interest on Loan Capital

b. Depreciation including Advance against Depreciation

c. Return on Equity

d. Operation and maintenance expenses including insurance and

e. Interest on Working Capital

f. Compensation Allowance

1.1.1. Gross Fixed Assets

Regulation 19.3 of the UPERC Generation Regulations, 2014 provide the basis for determination of final tariff of an existing project based on the admitted capital cost which shall include:

a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;
b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 22; and
c) Expenditure on account of renovation and modernization as admitted by this Commission in accordance with Regulation 22.

Accordingly the Petitioner for the purpose of this MYT petition for the control period FY 2014-15 to FY 2018-19 has considered the opening GFA balance as on 01.04.2014 equal to the closing GFA balance submitted in the final true-up petition for FY 2013-14 filed along

with the MYT petition being in line with the clause 19.3(c) of the Generation Regulations, 2014.

In this MYT Tariff Petition, the Petitioner is submitting the detailed asset wise list of its fixed assets for the control period FY 2014-15 to FY 2018-19. The Petitioner has considered the opening Gross Fixed Assets for FY 2014-15 on the basis of Final Accounts of FY 2013-14 and have subsequently added the yearly capitalizations for FY 2014-15 to FY 2018-19 as considered in the foregoing sections based on the proposed R&M/Refurbishment & Up-rating schemes, if any.

Accordingly the following table depicts the proposed Gross Fixed Asset balances along with the yearly capitalizations (if any) for the Control period FY 2014-15 to FY 2018-19:

Table: - Gross Fixed Assets Summary - FY 2014-15 to FY 2018-19

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	3,117.68	3,117.68	3,117.68	3,117.68	3,117.68
Capitalisation	-	-	-	-	-
Deletions	-	-	-	-	-
Closing GFA	**3,117.68**	**3,117.68**	**3,117.68**	**3,117.68**	**3,117.68**

1.1.2. Means of Finance

The Hon'ble Commission in its order dated 20th March 2012 and True-up Order dated 14th March, 2013 had prescribed a normative approach of financing of the capital expenditure in the ratio of 70% debt and 30% equity in line with the Tariff Regulations. Further the allowable depreciation had been considered as normative loan repayment.

In order to maintain consistency in approach, the Petitioner has considered the aforementioned philosophy and calculated the normative debt and normative equity. The opening values of accumulated depreciation, normative loan and normative equity as on 1.4.2014 has been adopted from the true-up petition filed for FY 2013-14. Accordingly the gross fixed asset balance, the net fixed asset balance and its financing is presented in the table below:

Table: Calculation of GFA, NFA and its financing

Figures in Rs Crore

Harduaganj Extn. Power Station	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	3,117.68	3,117.68	3,117.68	3,117.68	3,117.68
Additions	-	-	-	-	-
Deletions	-	-	-	-	-
Closing GFA	**3,117.68**	**3,117.68**	**3,117.68**	**3,117.68**	**3,117.68**
Closing Net FA	**2,788.09**	**2,624.74**	**2,461.39**	**2,298.03**	**2,134.68**
Financing:					
Opening Equity	935.30	935.30	935.30	935.30	935.30
Additions	-	-	-	-	-
Closing Equity	**935.30**	**935.30**	**935.30**	**935.30**	**935.30**
Open. Accumulated Depreciation	166.23	329.58	492.94	656.29	819.65
Depreciation during the year	163.35	163.35	163.35	163.35	163.35
Closing Accumulated Depreciation	**329.58**	**492.94**	**656.29**	**819.65**	**983.00**
Opening Debts	2,016.15	1,852.79	1,689.44	1,526.09	1,362.73
Additions	-	-	-	-	-
Less: Depreciation (normative repayment)	163.35	163.35	163.35	163.35	163.35
Closing Debts	**1,852.79**	**1,689.44**	**1,526.09**	**1,362.73**	**1,199.38**

1.1.3. Interest on Loan Capital

Regulation 25(i) of the UPERC Generation Regulations, 2014 provide the basis for computation of Interest on loan capital. It states that the Interest on loan capital shall be computed on the loans arrived at in the manner indicated in Regulation 24 i.e in the approved Debt: Equity ratio. The loan outstanding as on 1st April 2014 shall be worked out as the gross loan as per Regulation 24 minus cumulative repayment as admitted by the Commission up to 31st March 2014. The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year. In case of decapitalisation of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of decapitalisation of such asset.

Further, the rate of the interest shall be the weighted average rate of interest calculated on the basis of actual loans at the beginning of each year and shall be adjusted based on actual loan each year

accordingly. If there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average of interest shall be considered.

Further, It is reiterated that the Petitioner has considered a normative tariff approach with a gearing of 70:30 as considered by the Hon'ble Commission in its True-up Order dated 14th November, 2014. In this approach, 70% of the capital expenditure undertaken in any year has been considered to be financed through loan and balance 30% has been considered to be funded through equity contributions.

Allowable depreciation for the year has been considered as normative loan repayment. The weighted average rate of interest of overall long term loan portfolio for FY 2013-14 has been considered for FY 2014-15 to FY 2018-19, as it seems to be fair and equitable.

Considering the debt worked out as above and applying the rate of 12.50%, the interest on loan capital has been worked out in the table below:

Table: Summary of Interest on Loan for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Debts	2,016.15	1,852.79	1,689.44	1,526.09	1,362.73
Additions	-	-	-	-	-
Less: Normative repayment	163.35	163.35	163.35	163.35	163.35
Closing Debts	**1,852.79**	**1,689.44**	**1,526.09**	**1,362.73**	**1,199.38**
Average Debt	1,934.47	1,771.12	1,607.76	1,444.41	1,281.05
Interest on Loan	**203.12**	**185.97**	**168.82**	**151.66**	**134.51**

1.1.4. Depreciation

The Petitioner submits that the depreciation as per accounts is calculated as per the prescription of New Companies Act, 2013 which is depicted in the accounting policies annexed with the audited accounts. However the Tariff Regulations prescribe that the eligible depreciation shall be calculated annually, based on straight line method over the useful life of the asset and the rates prescribed in Appendix III of such regulations. It is noteworthy of mentioning that the Appendix III prescribes distinct depreciation rates for each class of assets.

The Petitioner has provided the asset class wise list of gross fixed assets in Form 12 of the tariff formats submitted along with this petition. Accordingly the Petitioner has calculated the eligible depreciation based on the rates prescribed in the tariff regulations.

The Petitioner reiterates that the detailed asset wise list is now available with the Hon'ble Commission. Such values are in accordance with the audited financial statements of the Petitioner. The rates of depreciation prescribed by the Hon'ble Commission in Appendix 3 of the Generation Tariff Regulations prescribe different depreciation rates for different assets. In such circumstances it would only be fit to consider station wise depreciation calculated at the rates prescribed in Appendix 3 for different asset classes and not at the average rate.

While calculating the allowable depreciation, the petitioner has considered the residual life of the asset as 10% and depreciation has been considered up to maximum of 90% of the historical capital cost of the asset being in line with the provisions of the Generation Regulations, 2014.

The value of Gross Fixed Assets has been discussed in foregoing sections. The Petitioner has calculated station wise depreciation, on the Gross Fixed Asset (GFA) value of all the plants owned by it, at the rates specified in the Appendix 3 of Generation Tariff Regulations 2014.

The allowable depreciation is depicted in the table below:

Table: Depreciation Summary for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation as per Annexure III of the Regulations	163.35	163.35	163.35	163.35	163.35
Allowable Depreciation subject to maximum of 90% of the Capital Cost	163.35	163.35	163.35	163.35	163.35

1.1.5. Return on Equity

Regulation 25(iii) of the UPERC Generation Regulations, 2014 provides the base for determination of Return on Equity for the purpose of computation of fixed charges. The said

regulations state that the Return on equity shall be computed in rupee terms on the equity base determined in accordance with Regulation 24 @15.5% per annum.

The equity base for the thermal power station as on 01.04.2014 has been considered as the closing equity balance for FY 2013-14 as submitted by the petitioner in its final true-up petition for FY 2013-14 submitted along with the MYT Petition. Thereafter 30% of the total capitalisation has been considered to be funded from equity infusion in each year of the control period.

As per the Generation Tariff Regulations, equity would be eligible for return when the asset is commissioned. Accordingly the table below provides the summary of equity base eligible for return and the Return on Equity claimed by the petitioner for the control period:

Table: Return on Equity for the Control Period (FY 2014-15 to FY 2018-19)

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	935.30	935.30	935.30	935.30	935.30
Additions	-	-	-	-	-
Closing Equity	**935.30**	**935.30**	**935.30**	**935.30**	**935.30**
Rate of Return on Equity (%)	15.5%	15.5%	15.5%	15.5%	15.5%
Allowable RoE	**144.97**	**144.97**	**144.97**	**144.97**	**144.97**

1.1.6. Operation & Maintenance Expenses

Regulation 21(iv) of the UPERC Generation Regulations, 2014 deals with the allowance of O&M expenses. The Hon'ble Commission in the generation tariff regulations – Para 25 (iv) (a) have prescribed the yearly O&M expenses for the control period FY 2014-15 to FY 2018-19 based upon the Installed Capacity for the thermal power stations other than plant for Obra A, Obra B, Panki, Harduaganj & Parichha TPS. The Hon'ble Commission has provided special dispensation in the O&M norms for the Thermal power plants namely Obra A, Obra B, Panki, Harduaganj & Parichha TPS, the same have been provided in the Para 25(iv)(b) of the Generation Regulation.

Accordingly based on the above stated norms the O&M expenses allowed for the power station for the Control period is depicted in the table below:

Table: O&M expense for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Capaicty (MW)	500	500	500	500	500
Norms (Rs Lakh/MW)	23.90	25.40	27.00	28.70	30.51
O&M Expenses (Rs Crore)	**119.50**	**127.00**	**135.00**	**143.50**	**152.55**

Further the Hon'ble Commission in its Para 25(iv) Note (c) has stated that the expenses on account of regulatory fee, payment to pollution control board, impact of pay revision, capital spares, cost of water and water cess shall be paid additionally at actuals subject to prudence check.

Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization.

1.1.7. Interest on Working Capital

The Petitioner has worked out the working capital requirement based on the normative parameters prescribed in Para 25 (v) of the UPERC Generation Tariff Regulations 2014. The rate of interest on working capital has been considered on normative basis as the Bank Rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof is declared under commercial operation, whichever is later.

The Petitioner for this Petition has considered the interest rate on working capital requirement at 12.50% including margin being the Bank rate as specified by the Reserve Bank of India as on 1st April 2014.

Further the Hon'ble Commission has provided the following norms for the purpose of calculating of the normative working capital for coal based generating stations:

i. Cost of coal for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal stock storage capacity whichever is lower
ii. Cost of coal for 30 days for generation corresponding to the target availability
iii. Cost of secondary fuel oil for two months corresponding to the target availability and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;
iv. Operation and Maintenance expenses for one month;
v. Maintenance spares @ 20% of operation and maintenance expenses; and
vi. Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the target availability.

Based on the above premise, the computation of interest on working capital for the control period for kind consideration and approval of the Hon'ble Commission are as per table below:

Table: Interest on Working Capital for the Control Period

(All figures in Rs Crs)

Harduaganj Extn	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal	154.69	162.43	170.55	179.08	188.03
Cost of Main Secondary Fuel Oil	2.61	2.74	2.88	3.03	3.18
Fuel Cost	0.00	0.00	0.00	0.00	0.00
Liquid Fuel Stock	0.00	0.00	0.00	0.00	0.00
O & M Expenses	9.96	10.58	11.25	11.96	12.71
Maintenance Spares	23.90	25.40	27.00	28.70	30.51
Receivables	272.12	278.72	285.82	293.44	301.61
Total Working Capital	463.28	479.87	497.50	516.20	536.04
Rate of Interest	12.50%	12.50%	12.50%	12.50%	12.50%
Interest on Working Capital	**57.91**	**59.98**	**62.19**	**64.52**	**67.00**

1.1.8. Summary of Annual Capacity (Fixed) Charges

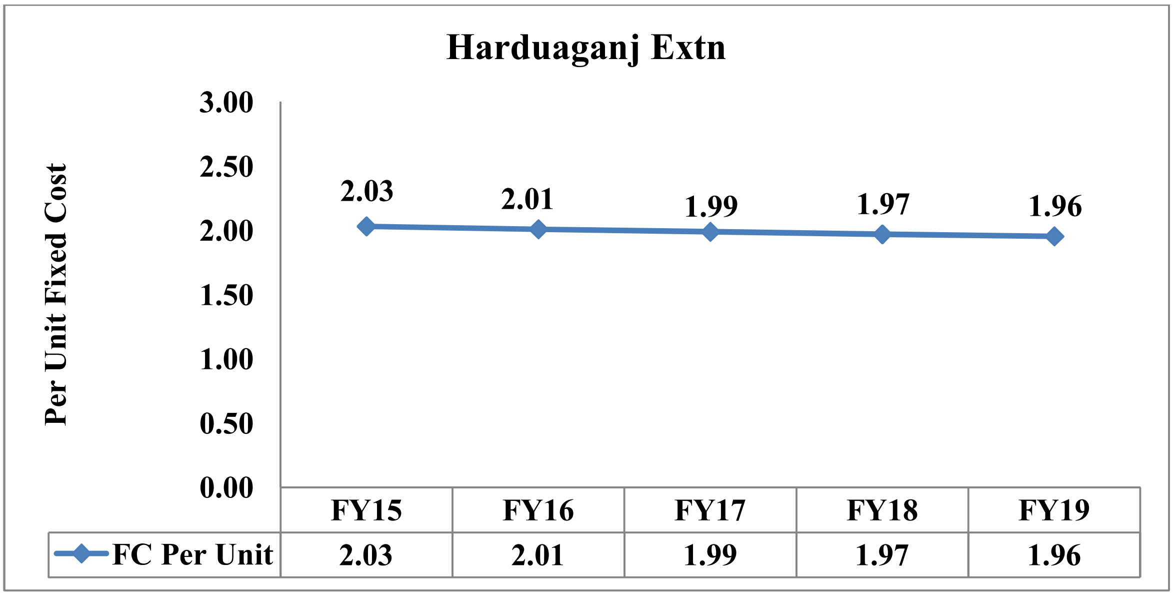
In view of the above submissions, the fixed cost of the Petitioner's Harduaganj Ext TPS for the control period under consideration works out at as under:

Table: Summary of Annual Capacity (Fixed) Charges for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	163.35	163.35	163.35	163.35	163.35
Interest on Loan Capital	203.12	185.97	168.82	151.66	134.51
Return on Equity	144.97	144.97	144.97	144.97	144.97
O&M Expenses	119.50	127.00	135.00	143.50	152.55
Compensation Allowance	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	57.91	59.98	62.19	64.52	67.00
Total Capacity Charges	**688.86**	**681.28**	**674.33**	**668.01**	**662.39**
Energy ex bus	3388	3388	3388	3388	3388
FC per unit	**2.03**	**2.01**	**1.99**	**1.97**	**1.96**

Graph: Fixed Cost per unit in the Control Period



1.2. Energy Charges

The following table highlights the normative parameters which the Hon'ble Commission has prescribed for the control period of FY 2014-15 to FY 2018-19:

Table Normative Operating Parameters for the Control Period

As per Tariff Generation Regulations for MYT FY 2015 to FY 2019

Normative Parameters	Unit	FY15	FY16	FY17	FY18	FY19
Target Availability	%	85%	85%	85%	85%	85%

Target PLF	%	85%	85%	85%	85%	85%
Aux Energy Consumption	%	9.0%	9.0%	9.0%	9.0%	9.0%
Gross Heat Rate	Kcal/kWh	2475	2475	2475	2475	2475
Specific Fuel Oil Cons	ml/kWh	0.75	0.75	0.75	0.75	0.75

For the purpose of calculations of energy charges for FY 2014-15, the average of the actual GCV of coal and oil and actual cost thereof of the ending three months (October to December 2014) has been taken for the purpose of calculations of energy charges. The Petitioner has assumed an annual Escalation Rate of 5% in the price of fuels over the five year control period starting from the financial year 2014-15 upto FY 2018-19

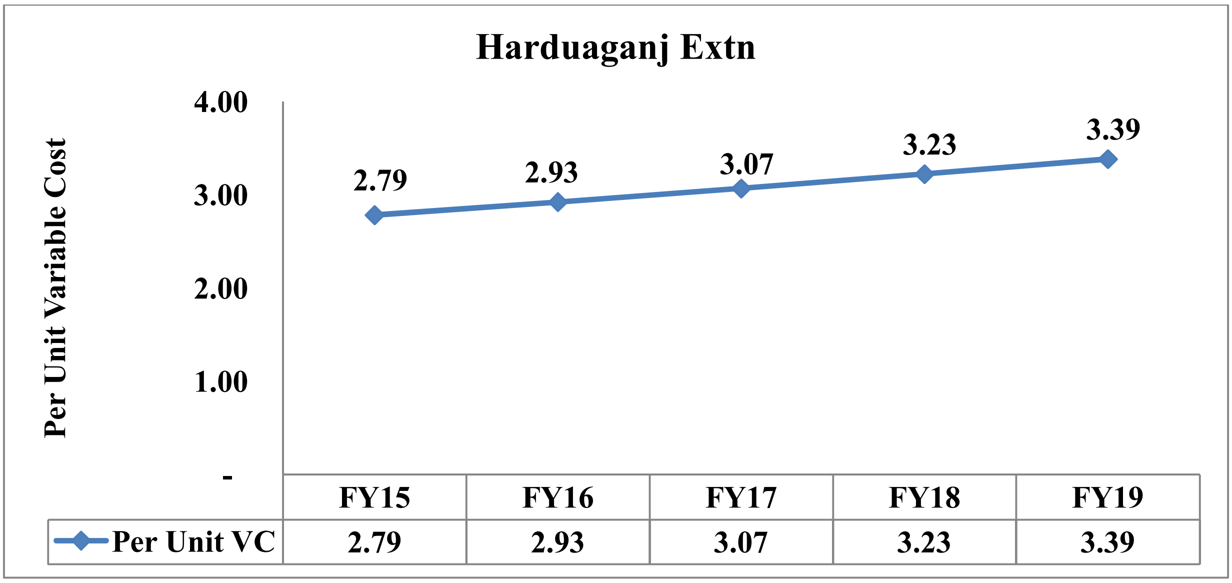
Energy charges for the control period have been projected based on the operating parameters prescribed in the Generation Tariff Regulations. A summarized position of energy charges proposed for the control period is given in Table below: (The details are available in tariff filing formats prescribed by the Hon'ble Commission)

Table: Calculation of Energy Charges for the Control Period

Description	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Capacity	MW	500	500	500	500	500
PLF	%	85%	85%	85%	85%	85%
Gross Station Heat Rate	Kcal/kWh	2475	2475	2475	2475	2475
Auxiliary Energy Consumption	%	9.0%	9.0%	9.0%	9.0%	9.0%
Energy Generation - Gross	MU	3,723	3,723	3,723	3,723	3,723
Auxiliary Energy Consumption	MU	335	335	335	335	335
Ex-bus Energy Sent Out	MU	3,388	3,388	3,388	3,388	3,388
Specific Oil Consumption	ml/kWh	0.75	0.75	0.75	0.75	0.75
Wt. Avg. GCV of Oil	KCal/Lt	9,482	9,482	9,482	9,482	9,482
Price of Oil	Rs./KL	56,170	58,978	61,927	65,024	68,275
Wt. Avg. GCV of Coal	kCal/kg	4312	4312	4312	4312	4312
Price of Coal	Rs./MT	4,356	4,574	4,802	5,043	5,295

Description	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Heat Contribution from SFO	Kcal/kWh	7.1	7.1	7.1	7.1	7.1
Oil Consumption	KL	2792	2792	2792	2792	2792
Heat Contribution from Coal	Kcal/kWh	2468	2468	2468	2468	2468
Specific Coal Consumption	kg/kWh	0.57	0.57	0.57	0.57	0.57
Coal Consumption	MMT	2.13	2.13	2.13	2.13	2.13
Total Cost of Oil	Rs Cr	15.68	16.47	17.29	18.16	19.06
Total Cost of Coal	Rs Cr	928.16	974.57	1,023.30	1,074.46	1,128.18
Total Fuel Cost	Rs Cr	943.84	991.04	1,040.59	1,092.62	1,147.25
Rate of Energy Charge from Secondary Fuel Oil ex-bus	Paise/kWh	4.63	4.86	5.10	5.36	5.63
Rate of Energy Charge from Coal ex-bus	Paise/kWh	273.96	287.66	302.04	317.14	333.00
Rate of Energy Charge ex-bus per kWh	Paise/kWh	278.59	292.52	307.15	322.50	338.63

Graph: Variable Cost per unit in the Control Period



1.2.1. Fuel Cost Adjustment

Regulation 26 (i) (ii) & (iii) of the Generation Tariff Regulations 2014, provide the mechanism for claiming the adjustment of rate of energy charges on account of variation in price and heat values of fuels.

"Initially, Gross Calorific Value of coal or gas or liquid fuel shall be taken as per actual of the preceding three months. Any variation shall be adjusted on month to month basis on the basis of Gross Calorific Value of coal or gas or liquid fuel received and burnt and landed cost incurred by the generating company for procurement of coal, oil, or gas or liquid fuel, as the case may be. No separate petition need to be filed with the Commission for fuel price adjustment. In case of any dispute, an appropriate application in accordance with Uttar Pradesh Electricity Regulatory Commission (Conduct of Business) Regulations 2004, as amended from time to time or any statutory re-enactment thereof, shall be made before the Commission"

Accordingly the Petitioner would raise bills for recovery of Fuel Cost Adjustment.

PANKI TPS

PANKI THERMAL POWER STATION

MULTI YEAR TARIFF PETITION

FOR

DETERMINATION OF TARIFF FOR

CONTROL PERIOD

FY 2014-15 to FY 2018-19

UPRVUNL

UP RAJYA VIDYUT UTPADAN NIGAM LTD

1. ANNUAL REVENUE REQUIREMENT & MULTI-YEAR TARIFF PETITION OF 'PANKI TPS'

The following sections detail the Annual Revenue Requirement and Tariff Petition of Panki TPS for the five year control period of FY 2014-15 to FY 2018-19

1.1. Annual Capacity (Fixed Charges) Charges

As per tariff regulations the annual capacity (fixed) charges consist of

a. Interest on Loan Capital

b. Depreciation including Advance against Depreciation

c. Return on Equity

d. Operation and maintenance expenses including insurance and

e. Interest on Working Capital

f. Compensation Allowance

1.1.1. Gross Fixed Assets

Regulation 19.3 of the UPERC Generation Regulations, 2014 provide the basis for determination of final tariff of an existing project based on the admitted capital cost which shall include:

a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;
b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 22; and
c) Expenditure on account of renovation and modernization as admitted by this Commission in accordance with Regulation 22.

Accordingly the Petitioner for the purpose of this MYT petition for the control period FY 2014-15 to FY 2018-19 has considered the opening GFA balance as on 01.04.2014 equal to the closing GFA balance submitted in the final true-up petition for FY 2013-14 filed along

with the MYT petition being in line with the clause 19.3(c) of the Generation Regulations, 2014.

In this MYT Tariff Petition, the Petitioner is submitting the detailed asset wise list of its fixed assets for the control period FY 2014-15 to FY 2018-19. The Petitioner has considered the opening Gross Fixed Assets for FY 2014-15 on the basis of Final Accounts of FY 2013-14 and have subsequently added the yearly capitalizations for FY 2014-15 to FY 2018-19 as considered in the foregoing sections based on the proposed R&M/Refurbishment & Up-rating schemes, if any.

Accordingly the following table depicts the proposed Gross Fixed Asset balances along with the yearly capitalizations (if any) for the Control period FY 2014-15 to FY 2018-19:

Table: - Gross Fixed Assets Summary - FY 2014-15 to FY 2018-19

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	160.00	160.00	160.00	160.00	160.00
Capitalisation	-	-	-	-	-
Deletions	-	-	-	-	-
Closing GFA	**160.00**	**160.00**	**160.00**	**160.00**	**160.00**

1.1.2. Means of Finance

The Hon'ble Commission in its order dated 20th March 2012 and True-up Order dated 14th March, 2013 had prescribed a normative approach of financing of the capital expenditure in the ratio of 70% debt and 30% equity in line with the Tariff Regulations. Further the allowable depreciation had been considered as normative loan repayment.

In order to maintain consistency in approach, the Petitioner has considered the aforementioned philosophy and calculated the normative debt and normative equity. The opening values of accumulated depreciation, normative loan and normative equity as on 1.4.2014 has been adopted from the true-up petition filed for FY 2013-14. Accordingly the gross fixed asset balance, the net fixed asset balance and its financing is presented in the table below:

Table: Calculation of GFA, NFA and its financing

Figures in Rs Crore

Panki Power Station	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	160.00	160.00	160.00	160.00	160.00
Additions	-	-	-	-	-
Deletions	-	-	-	-	-
Closing GFA	**160.00**	**160.00**	**160.00**	**160.00**	**160.00**
Closing Net FA	**38.99**	**31.58**	**24.18**	**16.78**	**16.00**
Financing:					
Opening Equity	36.64	36.64	36.64	36.64	36.64
Additions	-	-	-	-	-
Closing Equity	**36.64**	**36.64**	**36.64**	**36.64**	**36.64**
Open. Accumulated Depreciation	113.61	121.01	128.42	135.82	143.22
Depreciation during the year	7.40	7.40	7.40	7.40	0.78
Closing Accumulated Depreciation	**121.01**	**128.42**	**135.82**	**143.22**	**144.00**
Opening Debts	25.16	17.75	10.35	2.95	-
Additions	-	-	-	-	-
Less: Depreciation (normative repayment)	7.40	7.40	7.40	2.95	-
Closing Debts	**17.75**	**10.35**	**2.95**	**-**	**-**

1.1.3. Interest on Loan Capital

Regulation 25(i) of the UPERC Generation Regulations, 2014 provide the basis for computation of Interest on loan capital. It states that the Interest on loan capital shall be computed on the loans arrived at in the manner indicated in Regulation 24 i.e in the approved Debt: Equity ratio. The loan outstanding as on 1st April 2014 shall be worked out as the gross loan as per Regulation 24 minus cumulative repayment as admitted by the Commission up to 31st March 2014. The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year. In case of decapitalisation of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of decapitalisation of such asset.

Further, the rate of the interest shall be the weighted average rate of interest calculated on the basis of actual loans at the beginning of each year and shall be adjusted based on actual loan each year

accordingly. If there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average of interest shall be considered.

Further, It is reiterated that the Petitioner has considered a normative tariff approach with a gearing of 70:30 as considered by the Hon'ble Commission in its True-up Order dated 14th November, 2014. In this approach, 70% of the capital expenditure undertaken in any year has been considered to be financed through loan and balance 30% has been considered to be funded through equity contributions.

Allowable depreciation for the year has been considered as normative loan repayment. The weighted average rate of interest of overall long term loan portfolio for FY 2013-14 has been considered for FY 2014-15 to FY 2018-19, as it seems to be fair and equitable.

Considering the debt worked out as above and applying the rate of 12.50%, the interest on loan capital has been worked out in the table below:

Table: Summary of Interest on Loan for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Debts	25.16	17.75	10.35	2.95	-
Additions	-	-	-	-	-
Less: Normative repayment	7.40	7.40	7.40	2.95	-
Closing Debts	**17.75**	**10.35**	**2.95**	**-**	**-**
Average Debt	21.46	14.05	6.65	1.47	-
Interest on Loan	**2.48**	**1.62**	**0.77**	**0.17**	**-**

1.1.4. Depreciation

The Petitioner submits that the depreciation as per accounts is calculated as per the prescription of New Companies Act, 2013 which is depicted in the accounting policies annexed with the audited accounts. However the Tariff Regulations prescribe that the eligible depreciation shall be calculated annually, based on straight line method over the useful life of the asset and the rates prescribed in Appendix III of such regulations. It is noteworthy of mentioning that the Appendix III prescribes distinct depreciation rates for each class of assets.

The Petitioner has provided the asset class wise list of gross fixed assets in Form 12 of the tariff formats submitted along with this petition. Accordingly the Petitioner has calculated the eligible depreciation based on the rates prescribed in the tariff regulations.

The Petitioner reiterates that the detailed asset wise list is now available with the Hon'ble Commission. Such values are in accordance with the audited financial statements of the Petitioner. The rates of depreciation prescribed by the Hon'ble Commission in Appendix 3 of the Generation Tariff Regulations prescribe different depreciation rates for different assets. In such circumstances it would only be fit to consider station wise depreciation calculated at the rates prescribed in Appendix 3 for different asset classes and not at the average rate.

While calculating the allowable depreciation, the petitioner has considered the residual life of the asset as 10% and depreciation has been considered up to maximum of 90% of the historical capital cost of the asset being in line with the provisions of the Generation Regulations, 2014.

The value of Gross Fixed Assets has been discussed in foregoing sections. The Petitioner has calculated station wise depreciation, on the Gross Fixed Asset (GFA) value of all the plants owned by it, at the rates specified in the Appendix 3 of Generation Tariff Regulations 2014.

The allowable depreciation is depicted in the table below:

Table: Depreciation Summary for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation as per Annexure III of the Regulations	7.40	7.40	7.40	7.40	7.40
Allowable Depreciation subject to maximum of 90% of the Capital Cost	7.40	7.40	7.40	7.40	0.78

1.1.5. Return on Equity

Regulation 25(iii) of the UPERC Generation Regulations, 2014 provides the base for determination of Return on Equity for the purpose of computation of fixed charges. The said

regulations state that the Return on equity shall be computed in rupee terms on the equity base determined in accordance with Regulation 24 @15.5% per annum.

The equity base for the thermal power station as on 01.04.2014 has been considered as the closing equity balance for FY 2013-14 as submitted by the petitioner in its final true-up petition for FY 2013-14 submitted along with the MYT Petition. Thereafter 30% of the total capitalisation has been considered to be funded from equity infusion in each year of the control period.

As per the Generation Tariff Regulations, equity would be eligible for return when the asset is commissioned. Accordingly the table below provides the summary of equity base eligible for return and the Return on Equity claimed by the petitioner for the control period:

Table: Return on Equity for the Control Period (FY 2014-15 to FY 2018-19)

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	36.64	36.64	36.64	36.64	36.64
Additions	-	-	-	-	-
Closing Equity	**36.64**	**36.64**	**36.64**	**36.64**	**36.64**
Rate of Return on Equity (%)	15.5%	15.5%	15.5%	15.5%	15.5%
Allowable RoE	**5.68**	**5.68**	**5.68**	**5.68**	**5.68**

1.1.6. Operation & Maintenance Expenses

Regulation 21(iv) of the UPERC Generation Regulations, 2014 deals with the allowance of O&M expenses. The Hon'ble Commission in the generation tariff regulations – Para 25 (iv) (a) have prescribed the yearly O&M expenses for the control period FY 2014-15 to FY 2018-19 based upon the Installed Capacity for the thermal power stations other than plant for Obra A, Obra B, Panki, Harduaganj & Parichha TPS. The Hon'ble Commission has provided special dispensation in the O&M norms for the Thermal power plants namely Obra A, Obra B, Panki, Harduaganj & Parichha TPS, the same have been provided in the Para 25(iv)(b) of the Generation Regulation.

Accordingly based on the above stated norms the O&M expenses allowed for the power station for the Control period is depicted in the table below:

Table: O&M expense for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Capaicty (MW)	210	210	210	210	210
Norms (Rs Lakh/MW)	54.94	57.24	59.61	62.04	64.55
O&M Expenses (Rs Crore)	**115.37**	**120.20**	**125.18**	**130.28**	**135.56**

Further the Hon'ble Commission in its Para 25(iv) Note (c) has stated that the expenses on account of regulatory fee, payment to pollution control board, impact of pay revision, capital spares, cost of water and water cess shall be paid additionally at actuals subject to prudence check.

Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization.

1.1.7. Compensation Allowance

Para 25 (iv) Note (d) of the UPERC Generation Tariff Regulations 2014 prescribe a separate compensation allowance in case of coal-based thermal generating stations unit-wise, to meet expenses in nature of capital expenditure on replacement of minor assets which are not admissible under Regulation 22 of the regulations. The regulations further state that the revision of the capital cost shall not be allowed on account of compensation allowance but the compensation allowance shall be allowed to be recovered separately.

The following table summarizes the Petitioner's entitlement for Compensation allowance:

Table: Unit-wise Compensation Allowance for the Control Period

(All figures in Rs Crs)

Unit No.	Declared Capacity	Date of Commercial Operation	Age of Plant as on 31.03.2014	Compensation Allowance (Rs/Lakh/MW/Year)	FY 15	FY 16	FY 17	FY 18	FY 19
1	105	29-01-1977	37.00	1.00	1.05	1.05	1.05	1.05	1.05
2	105	29-05-1977	36.00	1.00	1.05	1.05	1.05	1.05	1.05
Total					**2.10**	**2.10**	**2.10**	**2.10**	**2.10**

1.1.8. Interest on Working Capital

The Petitioner has worked out the working capital requirement based on the normative parameters prescribed in Para 25 (v) of the UPERC Generation Tariff Regulations 2014. The rate of interest on working capital has been considered on normative basis as the Bank Rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof is declared under commercial operation, whichever is later.

The Petitioner for this Petition has considered the interest rate on working capital requirement at 12.50% including margin being the Bank rate as specified by the Reserve Bank of India as on 1st April 2014.

Further the Hon'ble Commission has provided the following norms for the purpose of calculating of the normative working capital for coal based generating stations:

i. Cost of coal for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal stock storage capacity whichever is lower
ii. Cost of coal for 30 days for generation corresponding to the target availability
iii. Cost of secondary fuel oil for two months corresponding to the target availability and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;
iv. Operation and Maintenance expenses for one month;
v. Maintenance spares @ 20% of operation and maintenance expenses; and
vi. Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the target availability.

Based on the above premise, the computation of interest on working capital for the control period for kind consideration and approval of the Hon'ble Commission are as per table below:

Table: Interest on Working Capital for the Control Period

(All figures in Rs Crs)

Panki	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal	63.91	67.10	70.46	73.98	77.68
Cost of Main Secondary Fuel Oil	2.28	2.39	2.51	2.64	2.77

Panki	2014-15	2015-16	2016-17	2017-18	2018-19
Fuel Cost	0.00	0.00	0.00	0.00	0.00
Liquid Fuel Stock	0.00	0.00	0.00	0.00	0.00
O & M Expenses	9.61	10.02	10.43	10.86	11.30
Maintenance Spares	23.07	24.04	25.04	26.06	27.11
Receivables	92.34	96.50	100.85	105.46	110.35
Total Working Capital	191.22	200.05	209.29	218.99	229.21
Rate of Interest	12.50%	12.50%	12.50%	12.50%	12.50%
Interest on Working Capital	**23.90**	**25.01**	**26.16**	**27.37**	**28.65**

1.1.9. Summary of Annual Capacity (Fixed) Charges

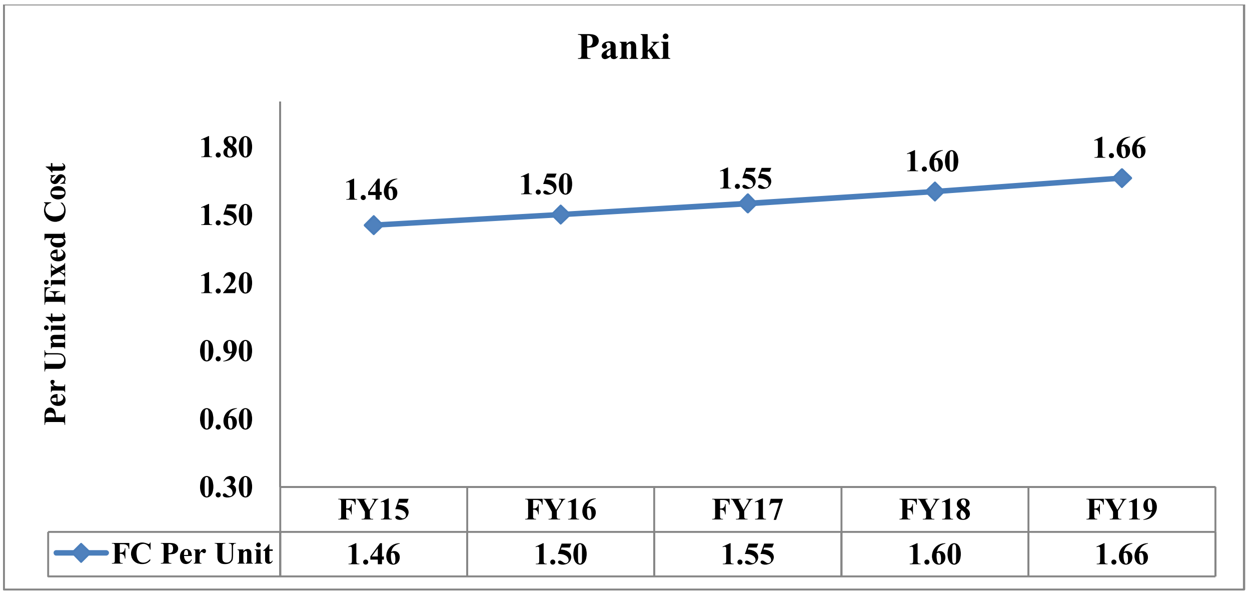
In view of the above submissions, the fixed cost of the Petitioner's Panki TPS for the control period under consideration works out at as under:

Table: Summary of Annual Capacity (Fixed) Charges for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	7.40	7.40	7.40	7.40	7.40
Interest on Loan Capital	2.48	1.62	0.77	0.17	0.00
Return on Equity	5.68	5.68	5.68	5.68	5.68
O&M Expenses	115.37	120.20	125.18	130.28	135.56
Compensation Allowance	2.10	2.10	2.10	2.10	2.10
Interest on Working Capital	23.90	25.01	26.16	27.37	28.65
Total Capacity Charges	**156.94**	**162.02**	**167.29**	**173.01**	**179.39**
Energy ex bus	1079	1079	1079	1079	1079
FC per unit	**1.46**	**1.50**	**1.55**	**1.60**	**1.66**

Graph: Fixed Cost per unit in the Control Period



1.2. Energy Charges

The following table highlights the normative parameters which the Hon'ble Commission has prescribed for the control period of FY 2014-15 to FY 2018-19:

Table Normative Operating Parameters for the Control Period

As per Tariff Generation Regulations for MYT FY 2015 to FY 2019

Normative Parameters	Unit	FY15	FY16	FY17	FY18	FY19
Target Availability	%	70%	70%	70%	70%	70%
Target PLF	%	65%	65%	65%	65%	65%
Aux Energy Consumption	%	9.8%	9.8%	9.8%	9.8%	9.8%
Gross Heat Rate	Kcal/kWh	2980	2980	2980	2980	2980
Specific Fuel Oil Cons	ml/kWh	2.1	2.1	2.1	2.1	2.1

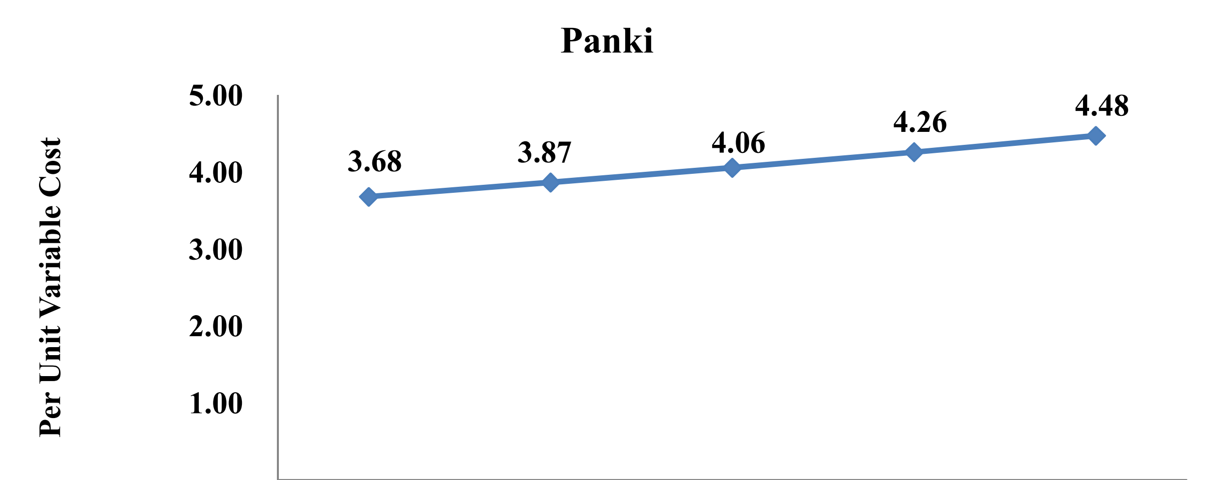
For the purpose of calculations of energy charges for FY 2014-15, the average of the actual GCV of coal and oil and actual cost thereof of the ending three months (October to December 2014) has been taken for the purpose of calculations of energy charges. The Petitioner has assumed an annual Escalation Rate of 5% in the price of fuels over the five year control period starting from the financial year 2014-15 upto FY 2018-19

Energy charges for the control period have been projected based on the operating parameters prescribed in the Generation Tariff Regulations. A summarized position of energy charges proposed for the control period is given in Table below: (The details are available in tariff filing formats prescribed by the Hon'ble Commission)

Table: Calculation of Energy Charges for the Control Period

Description	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Capacity	MW	210	210	210	210	210
PLF	%	65%	65%	65%	65%	65%
Gross Station Heat Rate	Kcal/kWh	2980	2980	2980	2980	2980
Auxiliary Energy Consumption	%	9.80%	9.80%	9.80%	9.80%	9.80%
Energy Generation - Gross	MU	1,196	1,196	1,196	1,196	1,196
Auxiliary Energy Consumption	MU	117	117	117	117	117
Ex-bus Energy Sent Out	MU	1,079	1,079	1,079	1,079	1,079
Specific Oil Consumption	ml/kWh	2.10	2.10	2.10	2.10	2.10
Wt. Avg. GCV of Oil	KCal/Lt	9,568	9,568	9,568	9,568	9,568
Price of Oil	Rs./KL	54,473	57,197	60,057	63,059	66,212
Wt. Avg. GCV of Coal	kCal/kg	3804	3804	3804	3804	3804
Price of Coal	Rs./MT	4121	4327	4544	4771	5009
Heat Contribution from SFO	Kcal/kWh	20	20	20	20	20
Oil Consumption	KL	2511	2511	2511	2511	2511
Heat Contribution from Coal	Kcal/kWh	2960	2960	2960	2960	2960
Specific Coal Consumption	kg/kWh	0.78	0.78	0.78	0.78	0.78
Coal Consumption	MMT	0.93	0.93	0.93	0.93	0.93
Total Cost of Oil	Rs Cr	13.68	14.36	15.08	15.83	16.63
Total Cost of Coal	Rs Cr	383.45	402.62	422.75	443.89	466.08
Total Fuel Cost	Rs Cr	397.13	416.98	437.83	459.72	482.71
Rate of Energy Charge from Secondary Fuel Oil ex-bus	Paise/kWh	12.68	13.32	13.98	14.68	15.42
Rate of Energy Charge from Coal ex-bus	Paise/kWh	355.52	373.29	391.96	411.56	432.13
Rate of Energy Charge ex-bus per kWh	Paise/kWh	368.20	386.61	405.94	426.24	447.55

Graph: Variable Cost per unit in the Control Period



	FY15	FY16	FY17	FY18	FY19
Per Unit VC	3.68	3.87	4.06	4.26	4.48

1.2.1. Fuel Cost Adjustment

Regulation 26 (i) (ii) & (iii) of the Generation Tariff Regulations 2014, provide the mechanism for claiming the adjustment of rate of energy charges on account of variation in price and heat values of fuels.

"Initially, Gross Calorific Value of coal or gas or liquid fuel shall be taken as per actual of the preceding three months. Any variation shall be adjusted on month to month basis on the basis of Gross Calorific Value of coal or gas or liquid fuel received and burnt and landed cost incurred by the generating company for procurement of coal, oil, or gas or liquid fuel, as the case may be. No separate petition need to be filed with the Commission for fuel price adjustment. In case of any dispute, an appropriate application in accordance with Uttar Pradesh Electricity Regulatory Commission (Conduct of Business) Regulations 2004, as amended from time to time or any statutory re-enactment thereof, shall be made before the Commission"

Accordingly the Petitioner would raise bills for recovery of Fuel Cost Adjustment.

PARICHHA TPS

PARICHHA THERMAL POWER STATION

MULTI YEAR TARIFF PETITION

FOR

DETERMINATION OF TARIFF FOR

CONTROL PERIOD

FY 2014-15 to FY 2018-19

UP RAJYA VIDYUT UTPADAN NIGAM LTD

1. ANNUAL REVENUE REQUIREMENT & MULTI-YEAR TARIFF PETITION OF 'PARICHHA TPS'

The following sections detail the Annual Revenue Requirement and Tariff Petition of Parichha TPS for the five year control period of FY 2014-15 to FY 2018-19

1.1. Annual Capacity (Fixed Charges) Charges

As per tariff regulations the annual capacity (fixed) charges consist of

a. Interest on Loan Capital

b. Depreciation including Advance against Depreciation

c. Return on Equity

d. Operation and maintenance expenses including insurance and

e. Interest on Working Capital

f. Compensation Allowance

1.1.1. Gross Fixed Assets

Regulation 19.3 of the UPERC Generation Regulations, 2014 provide the basis for determination of final tariff of an existing project based on the admitted capital cost which shall include:

a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;
b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 22; and
c) Expenditure on account of renovation and modernization as admitted by this Commission in accordance with Regulation 22.

Accordingly the Petitioner for the purpose of this MYT petition for the control period FY 2014-15 to FY 2018-19 has considered the opening GFA balance as on 01.04.2014 equal to the closing GFA balance submitted in the final true-up petition for FY 2013-14 filed along with the MYT petition being in line with the clause 19.3(c) of the Generation Regulations, 2014.

In this MYT Tariff Petition, the Petitioner is submitting the detailed asset wise list of its fixed assets for the control period FY 2014-15 to FY 2018-19. The Petitioner has considered the opening Gross Fixed Assets for FY 2014-15 on the basis of Final Accounts of FY 2013-14 and have subsequently added the yearly capitalizations for FY 2014-15 to FY 2018-19 as considered in the foregoing sections based on the proposed R&M/Refurbishment & Up-rating schemes, if any.

Accordingly the following table depicts the proposed Gross Fixed Asset balances along with the yearly capitalizations (if any) for the Control period FY 2014-15 to FY 2018-19:

Table: - Gross Fixed Assets Summary - FY 2014-15 to FY 2018-19

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	305.26	305.26	305.26	305.26	305.26
Capitalisation	-	-	-	-	-
Deletions	-	-	-	-	-
Closing GFA	**305.26**	**305.26**	**305.26**	**305.26**	**305.26**

1.1.2. Means of Finance

The Hon'ble Commission in its order dated 20th March 2012 and True-up Order dated 14th March, 2013 had prescribed a normative approach of financing of the capital expenditure in the ratio of 70% debt and 30% equity in line with the Tariff Regulations. Further the allowable depreciation had been considered as normative loan repayment.

In order to maintain consistency in approach, the Petitioner has considered the aforementioned philosophy and calculated the normative debt and normative equity. The opening values of accumulated depreciation, normative loan and normative equity as on 1.4.2014 has been adopted from the true-up petition filed for FY 2013-14. Accordingly the gross fixed asset balance, the net fixed asset balance and its financing is presented in the table below:

Table: Calculation of GFA, NFA and its financing

Figures in Rs Crore

Parichha Power Station	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	305.26	305.26	305.26	305.26	305.26
Additions	-	-	-	-	-
Deletions	-	-	-	-	-

Parichha Power Station	2014-15	2015-16	2016-17	2017-18	2018-19
Closing GFA	**305.26**	**305.26**	**305.26**	**305.26**	**305.26**
Closing Net FA	**117.14**	**101.22**	**85.29**	**69.37**	**53.45**
Financing:					
Opening Equity	79.02	79.02	79.02	79.02	79.02
Additions	-	-	-	-	-
Closing Equity	**79.02**	**79.02**	**79.02**	**79.02**	**79.02**
Open. Accumulated Depreciation	172.20	188.12	204.04	219.97	235.89
Depreciation during the year	15.92	15.92	15.92	15.92	15.92
Closing Accumulated Depreciation	**188.12**	**204.04**	**219.97**	**235.89**	**251.81**
Opening Debts	54.10	38.18	22.26	6.34	-
Additions	-	-	-	-	-
Less: Depreciation (normative repayment)	15.92	15.92	15.92	6.34	-
Closing Debts	**38.18**	**22.26**	**6.34**	**-**	**-**

1.1.3. Interest on Loan Capital

Regulation 25(i) of the UPERC Generation Regulations, 2014 provide the basis for computation of Interest on loan capital. It states that the Interest on loan capital shall be computed on the loans arrived at in the manner indicated in Regulation 24 i.e in the approved Debt: Equity ratio. The loan outstanding as on 1st April 2014 shall be worked out as the gross loan as per Regulation 24 minus cumulative repayment as admitted by the Commission up to 31st March 2014. The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year. In case of decapitalisation of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of decapitalisation of such asset.

Further, the rate of the interest shall be the weighted average rate of interest calculated on the basis of actual loans at the beginning of each year and shall be adjusted based on actual loan each year accordingly. If there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average of interest shall be considered.

Further, It is reiterated that the Petitioner has considered a normative tariff approach with a gearing of 70:30 as considered by the Hon'ble Commission in its True-up Order dated 14th

November, 2014. In this approach, 70% of the capital expenditure undertaken in any year has been considered to be financed through loan and balance 30% has been considered to be funded through equity contributions.

Allowable depreciation for the year has been considered as normative loan repayment. The weighted average rate of interest of overall long term loan portfolio for FY 2013-14 has been considered for FY 2014-15 to FY 2018-19, as it seems to be fair and equitable.

Considering the debt worked out as above and applying the rate of 12.50%, the interest on loan capital has been worked out in the table below:

Table: Summary of Interest on Loan for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Debts	54.10	38.18	22.26	6.34	-
Additions	-	-	-	-	-
Less: Normative repayment	15.92	15.92	15.92	6.34	-
Closing Debts	**38.18**	**22.26**	**6.34**	**-**	**-**
Average Debt	46.14	30.22	14.30	3.17	-
Interest on Loan	**5.78**	**3.78**	**1.79**	**0.40**	**-**

1.1.4. Depreciation

The Petitioner submits that the depreciation as per accounts is calculated as per the prescription of New Companies Act, 2013 which is depicted in the accounting policies annexed with the audited accounts. However the Tariff Regulations prescribe that the eligible depreciation shall be calculated annually, based on straight line method over the useful life of the asset and the rates prescribed in Appendix III of such regulations. It is noteworthy of mentioning that the Appendix III prescribes distinct depreciation rates for each class of assets.

The Petitioner has provided the asset class wise list of gross fixed assets in Form 12 of the tariff formats submitted along with this petition. Accordingly the Petitioner has calculated the eligible depreciation based on the rates prescribed in the tariff regulations.

The Petitioner reiterates that the detailed asset wise list is now available with the Hon'ble Commission. Such values are in accordance with the audited financial statements of the Petitioner. The rates of depreciation prescribed by the Hon'ble Commission in Appendix 3 of

the Generation Tariff Regulations prescribe different depreciation rates for different assets. In such circumstances it would only be fit to consider station wise depreciation calculated at the rates prescribed in Appendix 3 for different asset classes and not at the average rate.

While calculating the allowable depreciation, the petitioner has considered the residual life of the asset as 10% and depreciation has been considered up to maximum of 90% of the historical capital cost of the asset being in line with the provisions of the Generation Regulations, 2014.

The value of Gross Fixed Assets has been discussed in foregoing sections. The Petitioner has calculated station wise depreciation, on the Gross Fixed Asset (GFA) value of all the plants owned by it, at the rates specified in the Appendix 3 of Generation Tariff Regulations 2014.

The allowable depreciation is depicted in the table below:

Table: Depreciation Summary for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation as per Annexure III of the Regulations	15.92	15.92	15.92	15.92	15.92
Allowable Depreciation subject to maximum of 90% of the Capital Cost	15.92	15.92	15.92	15.92	15.92

1.1.5. Return on Equity

Regulation 25(iii) of the UPERC Generation Regulations, 2014 provides the base for determination of Return on Equity for the purpose of computation of fixed charges. The said regulations state that the Return on equity shall be computed in rupee terms on the equity base determined in accordance with Regulation 24 @15.5% per annum.

The equity base for the thermal power station as on 01.04.2014 has been considered as the closing equity balance for FY 2013-14 as submitted by the petitioner in its final true-up petition for FY 2013-14 submitted along with the MYT Petition. Thereafter 30% of the total capitalisation has been considered to be funded from equity infusion in each year of the control period.

As per the Generation Tariff Regulations, equity would be eligible for return when the asset is commissioned. Accordingly the table below provides the summary of equity base eligible for return and the Return on Equity claimed by the petitioner for the control period:

Table: Return on Equity for the Control Period (FY 2014-15 to FY 2018-19)

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	79.02	79.02	79.02	79.02	79.02
Additions	-	-	-	-	-
Closing Equity	**79.02**	**79.02**	**79.02**	**79.02**	**79.02**
Rate of Return on Equity (%)	15.5%	15.5%	15.5%	15.5%	15.5%
Allowable RoE	**12.25**	**12.25**	**12.25**	**12.25**	**12.25**

1.1.6. Operation & Maintenance Expenses

Regulation 21(iv) of the UPERC Generation Regulations, 2014 deals with the allowance of O&M expenses. The Hon'ble Commission in the generation tariff regulations – Para 25 (iv) (a) have prescribed the yearly O&M expenses for the control period FY 2014-15 to FY 2018-19 based upon the Installed Capacity for the thermal power stations other than plant for Obra A, Obra B, Panki, Harduaganj & Parichha TPS. The Hon'ble Commission has provided special dispensation in the O&M norms for the Thermal power plants namely Obra A, Obra B, Panki, Harduaganj & Parichha TPS, the same have been provided in the Para 25(iv)(b) of the Generation Regulation.

Accordingly based on the above stated norms the O&M expenses allowed for the power station for the Control period is depicted in the table below:

Table: O&M expense for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Capaicty (MW)	220	220	220	220	220
Norms (Rs Lakh/MW)	31.91	33.24	34.61	36.03	37.48
O&M Expenses (Rs Crore)	**70.20**	**73.13**	**76.14**	**79.27**	**82.46**

Further the Hon'ble Commission in its Para 25(iv) Note (c) has stated that the expenses on account of regulatory fee, payment to pollution control board, impact of pay revision, capital spares, cost of water and water cess shall be paid additionally at actuals subject to prudence check.

Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization.

1.1.7. Compensation Allowance

Para 25 (iv) Note (d) of the UPERC Generation Tariff Regulations 2014 prescribe a separate compensation allowance in case of coal-based thermal generating stations unit-wise, to meet expenses in nature of capital expenditure on replacement of minor assets which are not admissible under Regulation 22 of the regulations. The regulations further state that the revision of the capital cost shall not be allowed on account of compensation allowance but the compensation allowance shall be allowed to be recovered separately.

The following table summarizes the Petitioner's entitlement for Compensation allowance:

Table: Unit-wise Compensation Allowance for the Control Period

(All figures in Rs Crs)

Unit No.	Declared Capacity	Date of Commercial Operation	Age of Plant as on 31.03.2014	Compensation Allowance (Rs/Lakh/MW/Year)	FY 15	FY 16	FY 17	FY 18	FY 19
1	110	01-10-1985	28.00	1.00	1.10	1.10	1.10	1.10	1.10
2	110	25-02-1985	29.00	1.00	1.10	1.10	1.10	1.10	1.10
Total					**2.20**	**2.20**	**2.20**	**2.20**	**2.20**

1.1.8. Interest on Working Capital

The Petitioner has worked out the working capital requirement based on the normative parameters prescribed in Para 25 (v) of the UPERC Generation Tariff Regulations 2014. The rate of interest on working capital has been considered on normative basis as the Bank Rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof is declared under commercial operation, whichever is later.

The Petitioner for this Petition has considered the interest rate on working capital requirement at 12.50% including margin being the Bank rate as specified by the Reserve Bank of India as on 1st April 2014.

Further the Hon'ble Commission has provided the following norms for the purpose of calculating of the normative working capital for coal based generating stations:

i. Cost of coal for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal stock storage capacity whichever is lower
ii. Cost of coal for 30 days for generation corresponding to the target availability
iii. Cost of secondary fuel oil for two months corresponding to the target availability and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;
iv. Operation and Maintenance expenses for one month;
v. Maintenance spares @ 20% of operation and maintenance expenses; and
vi. Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the target availability.

Based on the above premise, the computation of interest on working capital for the control period for kind consideration and approval of the Hon'ble Commission are as per table below:

Table: Interest on Working Capital for the Control Period

(All figures in Rs Crs)

Parichha	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal	70.90	74.45	78.17	82.08	86.19
Cost of Main Secondary Fuel Oil	2.99	3.14	3.29	3.46	3.63

Parichha	2014-15	2015-16	2016-17	2017-18	2018-19
Fuel Cost	0.00	0.00	0.00	0.00	0.00
Liquid Fuel Stock	0.00	0.00	0.00	0.00	0.00
O & M Expenses	5.85	6.09	6.35	6.61	6.87
Maintenance Spares	14.04	14.63	15.23	15.85	16.49
Receivables	95.56	99.59	103.82	108.38	113.34
Total Working Capital	189.34	197.89	206.86	216.38	226.52
Rate of Interest	12.50%	12.50%	12.50%	12.50%	12.50%
Interest on Working Capital	**23.67**	**24.74**	**25.86**	**27.05**	**28.31**

1.1.9. Summary of Annual Capacity (Fixed) Charges

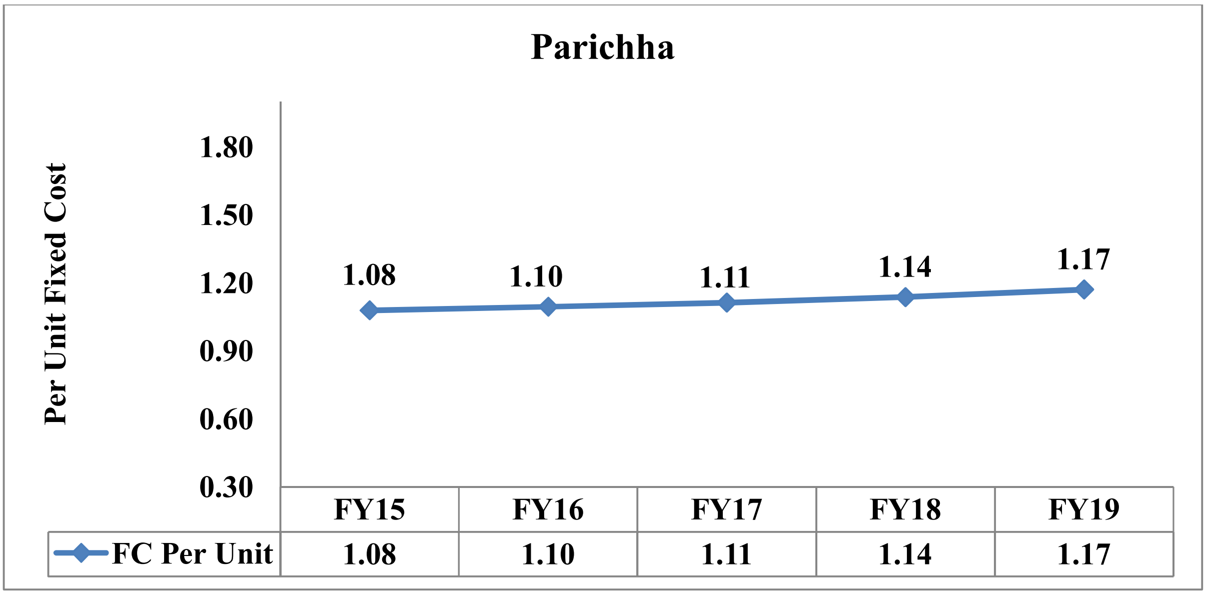
In view of the above submissions, the fixed cost of the Petitioner's Parichha TPS for the control period under consideration works out at as under:

Table: Summary of Annual Capacity (Fixed) Charges for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	15.92	15.92	15.92	15.92	15.92
Interest on Loan Capital	5.78	3.78	1.79	0.40	0.00
Return on Equity	12.25	12.25	12.25	12.25	12.25
O&M Expenses	70.20	73.13	76.14	79.27	82.46
Compensation Allowance	2.20	2.20	2.20	2.20	2.20
Interest on Working Capital	23.67	24.74	25.86	27.05	28.31
Total Capacity Charges	**130.02**	**132.02**	**134.16**	**137.08**	**141.14**
Energy ex bus	1205	1205	1205	1205	1205
FC per unit	**1.08**	**1.10**	**1.11**	**1.14**	**1.17**

Graph: Fixed Cost per unit in the Control Period



1.2. Energy Charges

The following table highlights the normative parameters which the Hon'ble Commission has prescribed for the control period of FY 2014-15 to FY 2018-19:

Table Normative Operating Parameters for the Control Period

As per Tariff Generation Regulations for MYT FY 2015 to FY 2019

Normative Parameters	Unit	FY15	FY16	FY17	FY18	FY19
Target Availability	%	75%	75%	75%	75%	75%
Target PLF	%	70%	70%	70%	70%	70%
Aux Energy Consumption	%	10.7%	10.7%	10.7%	10.7%	10.7%
Gross Heat Rate	Kcal/kWh	2980	2980	2980	2980	2980
Specific Fuel Oil Cons	ml/kWh	2.6	2.6	2.6	2.6	2.6

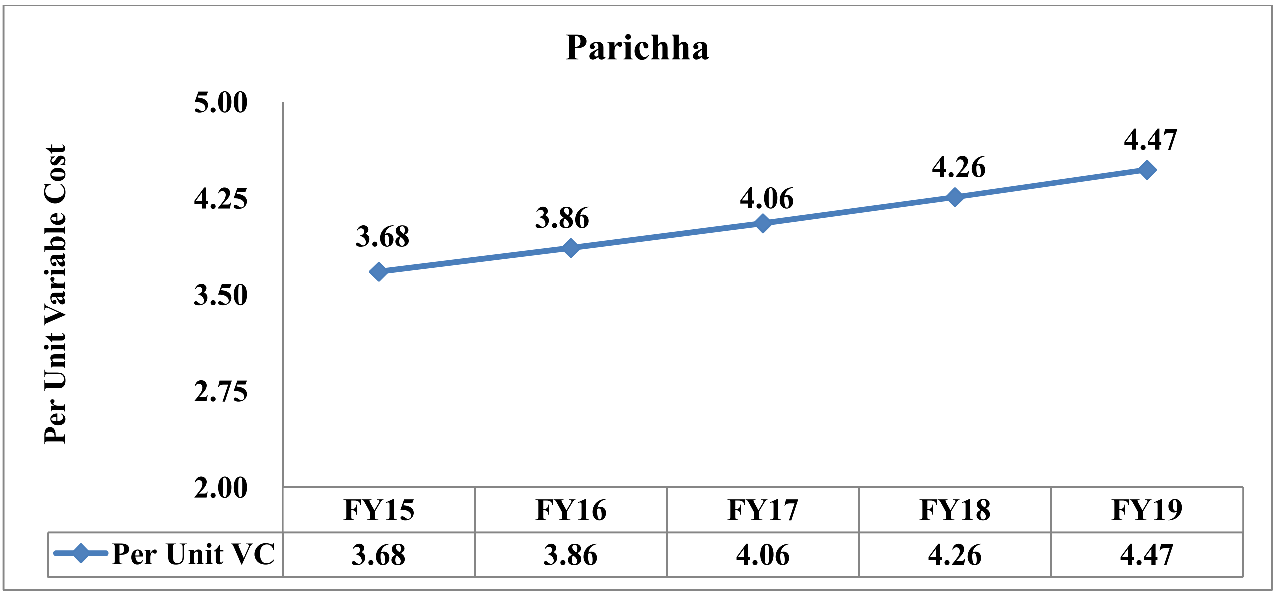
For the purpose of calculations of energy charges for FY 2014-15, the average of the actual GCV of coal and oil and actual cost thereof of the ending three months (October to December 2014) has been taken for the purpose of calculations of energy charges. The Petitioner has assumed an annual Escalation Rate of 5% in the price of fuels over the five year control period starting from the financial year 2014-15 upto FY 2018-19

Energy charges for the control period have been projected based on the operating parameters prescribed in the Generation Tariff Regulations. A summarized position of energy charges proposed for the control period is given in Table below: (The details are available in tariff filing formats prescribed by the Hon'ble Commission)

Table: Calculation of Energy Charges for the Control Period

Description	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Capacity	MW	220	220	220	220	220
PLF	%	70%	70%	70%	70%	70%
Gross Station Heat Rate	Kcal/kWh	2980	2980	2980	2980	2980
Auxiliary Energy Consumption	%	10.70%	10.70%	10.70%	10.70%	10.70%
Energy Generation - Gross	MU	1,349	1,349	1,349	1,349	1,349
Auxiliary Energy Consumption	MU	144	144	144	144	144
Ex-bus Energy Sent Out	MU	1,205	1,205	1,205	1,205	1,205
Specific Oil Consumption	ml/kWh	2.60	2.60	2.60	2.60	2.60
Wt. Avg. GCV of Oil	KCal/Lt	10,599	10,599	10,599	10,599	10,599
Price of Oil	Rs./KL	51,075	53,629	56,311	59,126	62,083
Wt. Avg. GCV of Coal	kCal/kg	3694	3694	3694	3694	3694
Price of Coal	Rs./MT	3946	4143	4350	4568	4796
Heat Contribution from SFO	Kcal/kWh	28	28	28	28	28
Oil Consumption	KL	3508	3508	3508	3508	3508
Heat Contribution from Coal	Kcal/kWh	2952	2952	2952	2952	2952
Specific Coal Consumption	kg/kWh	0.80	0.80	0.80	0.80	0.80
Coal Consumption	MMT	1.08	1.08	1.08	1.08	1.08
Total Cost of Oil	Rs Cr	17.91	18.81	19.75	20.74	21.78
Total Cost of Coal	Rs Cr	425.43	446.70	469.04	492.49	517.11
Total Fuel Cost	Rs Cr	443.34	465.51	488.79	513.23	538.89
Rate of Energy Charge from Secondary Fuel Oil ex-bus	Paise/kWh	14.87	15.61	16.40	17.21	18.08
Rate of Energy Charge from Coal ex-bus	Paise/kWh	353.14	370.80	389.34	408.81	429.25
Rate of Energy Charge ex-bus per kWh	Paise/kWh	368.01	386.41	405.74	426.02	447.32

Graph: Variable Cost per unit in the Control Period



1.2.1. Fuel Cost Adjustment

Regulation 26 (i) (ii) & (iii) of the Generation Tariff Regulations 2014, provide the mechanism for claiming the adjustment of rate of energy charges on account of variation in price and heat values of fuels.

"Initially, Gross Calorific Value of coal or gas or liquid fuel shall be taken as per actual of the preceding three months. Any variation shall be adjusted on month to month basis on the basis of Gross Calorific Value of coal or gas or liquid fuel received and burnt and landed cost incurred by the generating company for procurement of coal, oil, or gas or liquid fuel, as the case may be. No separate petition need to be filed with the Commission for fuel price adjustment. In case of any dispute, an appropriate application in accordance with Uttar Pradesh Electricity Regulatory Commission (Conduct of Business) Regulations 2004, as amended from time to time or any statutory re-enactment thereof, shall be made before the Commission"

Accordingly the Petitioner would raise bills for recovery of Fuel Cost Adjustment.

PARICHHA EXTN. TPS

PARICHHA EXTN. THERMAL POWER STATION

MULTI YEAR TARIFF PETITION

FOR

DETERMINATION OF TARIFF FOR

CONTROL PERIOD

FY 2014-15 to FY 2018-19

UP RAJYA VIDYUT UTPADAN NIGAM LTD

1. ANNUAL REVENUE REQUIREMENT & MULTI-YEAR TARIFF PETITION OF 'PARICHHA EXTN. TPS'

The following sections detail the Annual Revenue Requirement and Tariff Petition of Parichha Extn. TPS for the five year control period of FY 2014-15 to FY 2018-19

1.1. Annual Capacity (Fixed Charges) Charges

As per tariff regulations the annual capacity (fixed) charges consist of

a. Interest on Loan Capital

b. Depreciation including Advance against Depreciation

c. Return on Equity

d. Operation and maintenance expenses including insurance and

e. Interest on Working Capital

f. Compensation Allowance

1.1.1. Gross Fixed Assets

Regulation 19.3 of the UPERC Generation Regulations, 2014 provide the basis for determination of final tariff of an existing project based on the admitted capital cost which shall include:

a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;
b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 22; and
c) Expenditure on account of renovation and modernization as admitted by this Commission in accordance with Regulation 22.

Accordingly the Petitioner for the purpose of this MYT petition for the control period FY 2014-15 to FY 2018-19 has considered the opening GFA balance as on 01.04.2014 equal to the closing GFA balance submitted in the final true-up petition for FY 2013-14 filed along with the MYT petition being in line with the clause 19.3(c) of the Generation Regulations, 2014.

In this MYT Tariff Petition, the Petitioner is submitting the detailed asset wise list of its fixed assets for the control period FY 2014-15 to FY 2018-19. The Petitioner has considered the opening Gross Fixed Assets for FY 2014-15 on the basis of Final Accounts of FY 2013-14 and have subsequently added the yearly capitalizations for FY 2014-15 to FY 2018-19 as considered in the foregoing sections based on the proposed R&M/Refurbishment & Up-rating schemes, if any.

Accordingly the following table depicts the proposed Gross Fixed Asset balances along with the yearly capitalizations (if any) for the Control period FY 2014-15 to FY 2018-19:

Table: - Gross Fixed Assets Summary - FY 2014-15 to FY 2018-19

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	1,758.35	1,758.35	1,758.35	1,758.35	1,758.35
Capitalisation	-	-	-	-	-
Deletions	-	-	-	-	-
Closing GFA	**1,758.35**	**1,758.35**	**1,758.35**	**1,758.35**	**1,758.35**

1.1.2. Means of Finance

The Hon'ble Commission in its order dated 20th March 2012 and True-up Order dated 14th March, 2013 had prescribed a normative approach of financing of the capital expenditure in the ratio of 70% debt and 30% equity in line with the Tariff Regulations. Further the allowable depreciation had been considered as normative loan repayment.

In order to maintain consistency in approach, the Petitioner has considered the aforementioned philosophy and calculated the normative debt and normative equity. The opening values of accumulated depreciation, normative loan and normative equity as on 1.4.2014 has been adopted from the true-up petition filed for FY 2013-14. Accordingly the gross fixed asset balance, the net fixed asset balance and its financing is presented in the table below:

Table: Calculation of GFA, NFA and its financing

Figures in Rs Crore

Parichha Extn Power Station	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	1,758.35	1,758.35	1,758.35	1,758.35	1,758.35
Additions	-	-	-	-	-
Deletions	-	-	-	-	-

Parichha Extn Power Station	2014-15	2015-16	2016-17	2017-18	2018-19
Closing GFA	**1,758.35**	**1,758.35**	**1,758.35**	**1,758.35**	**1,758.35**
Closing Net FA	**1,211.17**	**1,113.53**	**1,015.89**	**918.25**	**820.61**
Financing:					
Opening Equity	357.77	357.77	357.77	357.77	357.77
Additions	-	-	-	-	-
Closing Equity	**357.77**	**357.77**	**357.77**	**357.77**	**357.77**
Open. Accumulated Depreciation	449.54	547.18	644.82	742.46	840.11
Depreciation during the year	97.64	97.64	97.64	97.64	97.64
Closing Accumulated Depreciation	**547.18**	**644.82**	**742.46**	**840.11**	**937.75**
Opening Debts	951.06	853.42	755.78	658.14	560.50
Additions	-	-	-	-	-
Less: Depreciation (normative repayment)	97.64	97.64	97.64	97.64	97.64
Closing Debts	**853.42**	**755.78**	**658.14**	**560.50**	**462.85**

1.1.3. Interest on Loan Capital

Regulation 25(i) of the UPERC Generation Regulations, 2014 provide the basis for computation of Interest on loan capital. It states that the Interest on loan capital shall be computed on the loans arrived at in the manner indicated in Regulation 24 i.e in the approved Debt: Equity ratio. The loan outstanding as on 1st April 2014 shall be worked out as the gross loan as per Regulation 24 minus cumulative repayment as admitted by the Commission up to 31st March 2014. The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year. In case of decapitalisation of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of decapitalisation of such asset.

Further, the rate of the interest shall be the weighted average rate of interest calculated on the basis of actual loans at the beginning of each year and shall be adjusted based on actual loan each year accordingly. If there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average of interest shall be considered.

Further, It is reiterated that the Petitioner has considered a normative tariff approach with a gearing of 70:30 as considered by the Hon'ble Commission in its True-up Order dated 14th

November, 2014. In this approach, 70% of the capital expenditure undertaken in any year has been considered to be financed through loan and balance 30% has been considered to be funded through equity contributions.

Allowable depreciation for the year has been considered as normative loan repayment. The weighted average rate of interest of overall long term loan portfolio for FY 2013-14 has been considered for FY 2014-15 to FY 2018-19, as it seems to be fair and equitable.

Considering the debt worked out as above and applying the rate of 12.50%, the interest on loan capital has been worked out in the table below:

Table: Summary of Interest on Loan for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Debts	951.06	853.42	755.78	658.14	560.50
Additions	-	-	-	-	-
Less: Normative repayment	97.64	97.64	97.64	97.64	97.64
Closing Debts	**853.42**	**755.78**	**658.14**	**560.50**	**462.85**
Average Debt	902.24	804.60	706.96	609.32	511.67
Interest on Loan	**81.74**	**72.90**	**64.05**	**55.20**	**46.36**

1.1.4. Depreciation

The Petitioner submits that the depreciation as per accounts is calculated as per the prescription of New Companies Act, 2013 which is depicted in the accounting policies annexed with the audited accounts. However the Tariff Regulations prescribe that the eligible depreciation shall be calculated annually, based on straight line method over the useful life of the asset and the rates prescribed in Appendix III of such regulations. It is noteworthy of mentioning that the Appendix III prescribes distinct depreciation rates for each class of assets.

The Petitioner has provided the asset class wise list of gross fixed assets in Form 12 of the tariff formats submitted along with this petition. Accordingly the Petitioner has calculated the eligible depreciation based on the rates prescribed in the tariff regulations.

The Petitioner reiterates that the detailed asset wise list is now available with the Hon'ble Commission. Such values are in accordance with the audited financial statements of the Petitioner. The rates of depreciation prescribed by the Hon'ble Commission in Appendix 3 of

the Generation Tariff Regulations prescribe different depreciation rates for different assets. In such circumstances it would only be fit to consider station wise depreciation calculated at the rates prescribed in Appendix 3 for different asset classes and not at the average rate.

While calculating the allowable depreciation, the petitioner has considered the residual life of the asset as 10% and depreciation has been considered up to maximum of 90% of the historical capital cost of the asset being in line with the provisions of the Generation Regulations, 2014.

The value of Gross Fixed Assets has been discussed in foregoing sections. The Petitioner has calculated station wise depreciation, on the Gross Fixed Asset (GFA) value of all the plants owned by it, at the rates specified in the Appendix 3 of Generation Tariff Regulations 2014.

The allowable depreciation is depicted in the table below:

Table: Depreciation Summary for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation as per Annexure III of the Regulations	97.64	97.64	97.64	97.64	97.64
Allowable Depreciation subject to maximum of 90% of the Capital Cost	97.64	97.64	97.64	97.64	97.64

1.1.5. Return on Equity

Regulation 25(iii) of the UPERC Generation Regulations, 2014 provides the base for determination of Return on Equity for the purpose of computation of fixed charges. The said regulations state that the Return on equity shall be computed in rupee terms on the equity base determined in accordance with Regulation 24 @15.5% per annum.

The equity base for the thermal power station as on 01.04.2014 has been considered as the closing equity balance for FY 2013-14 as submitted by the petitioner in its final true-up petition for FY 2013-14 submitted along with the MYT Petition. Thereafter 30% of the total capitalisation has been considered to be funded from equity infusion in each year of the control period.

As per the Generation Tariff Regulations, equity would be eligible for return when the asset is commissioned. Accordingly the table below provides the summary of equity base eligible for return and the Return on Equity claimed by the petitioner for the control period:

Table: Return on Equity for the Control Period (FY 2014-15 to FY 2018-19)

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	357.77	357.77	357.77	357.77	357.77
Additions	-	-	-	-	-
Closing Equity	**357.77**	**357.77**	**357.77**	**357.77**	**357.77**
Rate of Return on Equity (%)	15.5%	15.5%	15.5%	15.5%	15.5%
Allowable RoE	**55.45**	**55.45**	**55.45**	**55.45**	**55.45**

1.1.6. Operation & Maintenance Expenses

Regulation 21(iv) of the UPERC Generation Regulations, 2014 deals with the allowance of O&M expenses. The Hon'ble Commission in the generation tariff regulations – Para 25 (iv) (a) have prescribed the yearly O&M expenses for the control period FY 2014-15 to FY 2018-19 based upon the Installed Capacity for the thermal power stations other than plant for Obra A, Obra B, Panki, Harduaganj & Parichha TPS. The Hon'ble Commission has provided special dispensation in the O&M norms for the Thermal power plants namely Obra A, Obra B, Panki, Harduaganj & Parichha TPS, the same have been provided in the Para 25(iv)(b) of the Generation Regulation.

Accordingly based on the above stated norms the O&M expenses allowed for the power station for the Control period is depicted in the table below:

Table: O&M expense for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Capaicty (MW)	420	420	420	420	420
Norms (Rs Lakh/MW)	23.90	25.40	27.00	28.70	30.51
O&M Expenses (Rs Crore)	**100.38**	**106.68**	**113.40**	**120.54**	**128.14**

Further the Hon'ble Commission in its Para 25(iv) Note (c) has stated that the expenses on account of regulatory fee, payment to pollution control board, impact of pay revision, capital spares, cost of water and water cess shall be paid additionally at actuals subject to prudence check.

Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization.

1.1.7. Interest on Working Capital

The Petitioner has worked out the working capital requirement based on the normative parameters prescribed in Para 25 (v) of the UPERC Generation Tariff Regulations 2014. The rate of interest on working capital has been considered on normative basis as the Bank Rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof is declared under commercial operation, whichever is later.

The Petitioner for this Petition has considered the interest rate on working capital requirement at 12.50% including margin being the Bank rate as specified by the Reserve Bank of India as on 1st April 2014.

Further the Hon'ble Commission has provided the following norms for the purpose of calculating of the normative working capital for coal based generating stations:

i. Cost of coal for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal stock storage capacity whichever is lower
ii. Cost of coal for 30 days for generation corresponding to the target availability
iii. Cost of secondary fuel oil for two months corresponding to the target availability and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;
iv. Operation and Maintenance expenses for one month;
v. Maintenance spares @ 20% of operation and maintenance expenses; and

vi. Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the target availability.

Based on the above premise, the computation of interest on working capital for the control period for kind consideration and approval of the Hon'ble Commission are as per table below:

Table: Interest on Working Capital for the Control Period

(All figures in Rs Crs)

Parichha Extn	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal	137.07	143.92	151.12	158.67	166.60
Cost of Main Secondary Fuel Oil	2.00	2.10	2.20	2.31	2.43
Fuel Cost	0.00	0.00	0.00	0.00	0.00
Liquid Fuel Stock	0.00	0.00	0.00	0.00	0.00
O & M Expenses	8.37	8.89	9.45	10.05	10.68
Maintenance Spares	20.08	21.34	22.68	24.11	25.63
Receivables	202.64	209.50	216.79	224.53	232.76
Total Working Capital	370.15	385.74	402.23	419.67	438.10
Rate of Interest	12.50%	12.50%	12.50%	12.50%	12.50%
Interest on Working Capital	**46.27**	**48.22**	**50.28**	**52.46**	**54.76**

1.1.8. Summary of Annual Capacity (Fixed) Charges

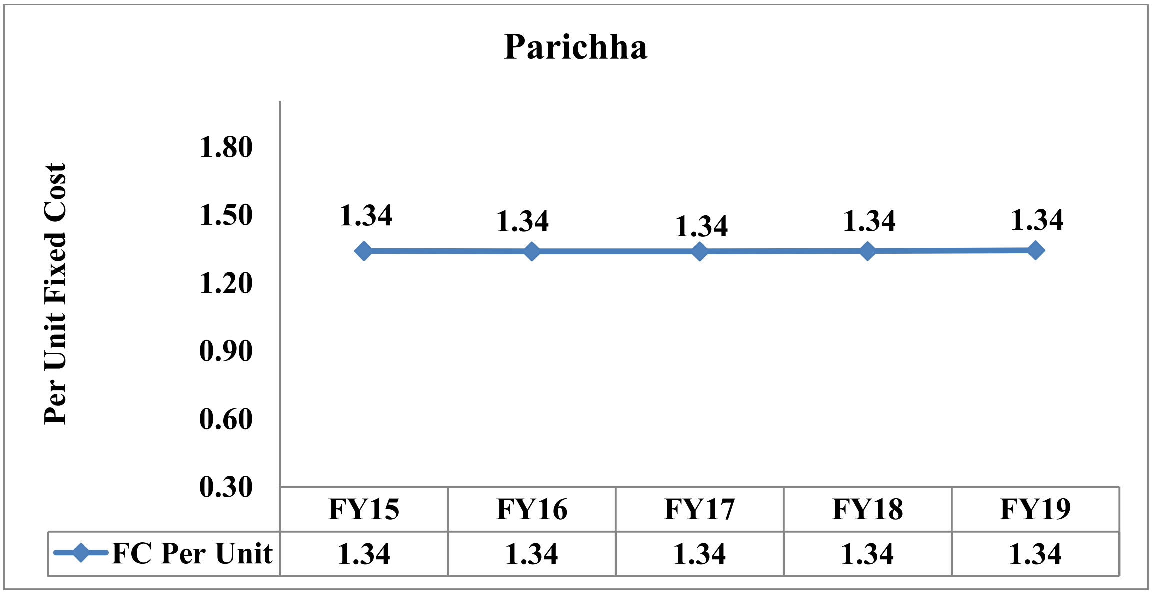
In view of the above submissions, the fixed cost of the Petitioner's Parichha Extn. TPS for the control period under consideration works out at as under:

Table: Summary of Annual Capacity (Fixed) Charges for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	97.64	97.64	97.64	97.64	97.64
Interest on Loan Capital	81.74	72.90	64.05	55.20	46.36
Return on Equity	55.45	55.45	55.45	55.45	55.45
O&M Expenses	100.38	106.68	113.40	120.54	128.14
Compensation Allowance	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	46.27	48.22	50.28	52.46	54.76
Total Capacity Charges	**381.49**	**380.89**	**380.82**	**381.30**	**382.36**
Energy ex bus	2846	2846	2846	2846	2846
FC per unit	**1.34**	**1.34**	**1.34**	**1.34**	**1.34**

Graph: Fixed Cost per unit in the Control Period



1.2. Energy Charges

The following table highlights the normative parameters which the Hon'ble Commission has prescribed for the control period of FY 2014-15 to FY 2018-19:

Table Normative Operating Parameters for the Control Period

As per Tariff Generation Regulations for MYT FY 2015 to FY 2019

Normative Parameters	Unit	FY15	FY16	FY17	FY18	FY19
Target Availability	%	85%	85%	85%	85%	85%
Target PLF	%	85%	85%	85%	85%	85%
Aux Energy Consumption	%	9.0%	9.0%	9.0%	9.0%	9.0%
Gross Heat Rate	Kcal/kWh	2475	2475	2475	2475	2475
Specific Fuel Oil Cons	ml/kWh	0.75	0.75	0.75	0.75	0.75

For the purpose of calculations of energy charges for FY 2014-15, the average of the actual GCV of coal and oil and actual cost thereof of the ending three months (October to December 2014) has been taken for the purpose of calculations of energy charges. The Petitioner has assumed an annual Escalation Rate of 5% in the price of fuels over the five year control period starting from the financial year 2014-15 upto FY 2018-19

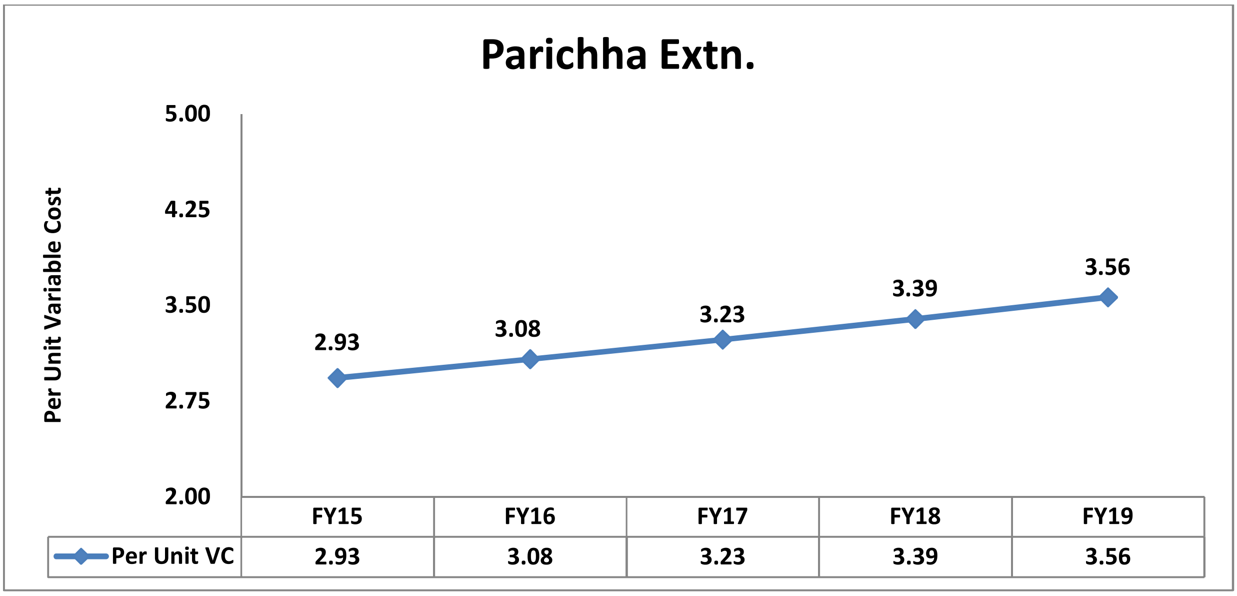
Energy charges for the control period have been projected based on the operating parameters prescribed in the Generation Tariff Regulations. A summarized position of energy charges proposed for the control period is given in Table below: (The details are available in tariff filing formats prescribed by the Hon'ble Commission)

Table: Calculation of Energy Charges for the Control Period

Description	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Capacity	MW	420	420	420	420	420
PLF	%	85%	85%	85%	85%	85%
Gross Station Heat Rate	Kcal/kWh	2475	2475	2475	2475	2475
Auxiliary Energy Consumption	%	9.0%	9.0%	9.0%	9.0%	9.0%
Energy Generation - Gross	MU	3,127	3,127	3,127	3,127	3,127
Auxiliary Energy Consumption	MU	281	281	281	281	281
Ex-bus Energy Sent Out	MU	2,846	2,846	2,846	2,846	2,846
Specific Oil Consumption	ml/kWh	0.75	0.75	0.75	0.75	0.75
Wt. Avg. GCV of Oil	KCal/Lt	10,232	10,232	10,232	10,232	10,232
Price of Oil	Rs./KL	51,075	53,629	56,311	59,126	62,083
Wt. Avg. GCV of Coal	kCal/kg	3702	3702	3702	3702	3702
Price of Coal	Rs./MT	3,946	4,143	4,350	4,568	4,796
Heat Contribution from SFO	Kcal/kWh	8	8	8	8	8
Oil Consumption	KL	2345	2345	2345	2345	2345
Heat Contribution from Coal	Kcal/kWh	2467	2467	2467	2467	2467
Specific Coal Consumption	kg/kWh	0.67	0.67	0.67	0.67	0.67
Coal Consumption	MMT	2.08	2.08	2.08	2.08	2.08
Total Cost of Oil	Rs Cr	11.98	12.58	13.21	13.87	14.56
Total Cost of Coal	Rs Cr	822.39	863.51	906.69	952.02	999.63
Total Fuel Cost	Rs Cr	834.37	876.09	919.90	965.89	1,014.19

Description	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Rate of Energy Charge from Secondary Fuel Oil ex-bus	Paise/kWh	4.21	4.42	4.64	4.87	5.12
Rate of Energy Charge from Coal ex-bus	Paise/kWh	288.98	303.43	318.60	334.53	351.26
Rate of Energy Charge ex-bus per kWh	Paise/kWh	293.19	307.85	323.24	339.40	356.37

Graph: Variable Cost per unit in the Control Period



1.2.1. Fuel Cost Adjustment

Regulation 26 (i) (ii) & (iii) of the Generation Tariff Regulations 2014, provide the mechanism for claiming the adjustment of rate of energy charges on account of variation in price and heat values of fuels.

"Initially, Gross Calorific Value of coal or gas or liquid fuel shall be taken as per actual of the preceding three months. Any variation shall be adjusted on month to month basis on the basis of Gross Calorific Value of coal or gas or liquid fuel received and burnt and landed cost incurred by the generating company for procurement of coal, oil, or gas or liquid fuel, as the case may be. No separate petition need to be filed with the Commission for fuel price

adjustment. In case of any dispute, an appropriate application in accordance with Uttar Pradesh Electricity Regulatory Commission (Conduct of Business) Regulations 2004, as amended from time to time or any statutory re-enactment thereof, shall be made before the Commission"

Accordingly the Petitioner would raise bills for recovery of Fuel Cost Adjustment.

PARICHHA EXTN. STAGE II TPS

PARICHHA EXTN. STAGE II THERMAL POWER STATION

MULTI YEAR TARIFF PETITION

FOR

DETERMINATION OF TARIFF FOR

CONTROL PERIOD

FY 2014-15 to FY 2018-19

UPRVUNL

UP RAJYA VIDYUT UTPADAN NIGAM LTD

1. ANNUAL REVENUE REQUIREMENT & MULTI-YEAR TARIFF PETITION OF 'PARICHHA EXTN. STAGE II TPS'

The following sections detail the Annual Revenue Requirement and Tariff Petition of Parichha Extn. Stage II TPS for the five year control period of FY 2014-15 to FY 2018-19

1.1. Annual Capacity (Fixed Charges) Charges

As per tariff regulations the annual capacity (fixed) charges consist of

a. Interest on Loan Capital

b. Depreciation including Advance against Depreciation

c. Return on Equity

d. Operation and maintenance expenses including insurance and

e. Interest on Working Capital

f. Compensation Allowance

1.1.1. Gross Fixed Assets

Regulation 19.3 of the UPERC Generation Regulations, 2014 provide the basis for determination of final tariff of an existing project based on the admitted capital cost which shall include:

a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;
b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 22; and
c) Expenditure on account of renovation and modernization as admitted by this Commission in accordance with Regulation 22.

Accordingly the Petitioner for the purpose of this MYT petition for the control period FY 2014-15 to FY 2018-19 has considered the opening GFA balance as on 01.04.2014 equal to the closing GFA balance submitted in the final true-up petition for FY 2013-14 filed along with the MYT petition being in line with the clause 19.3(c) of the Generation Regulations, 2014.

In this MYT Tariff Petition, the Petitioner is submitting the detailed asset wise list of its fixed assets for the control period FY 2014-15 to FY 2018-19. The Petitioner has considered the opening Gross Fixed Assets for FY 2014-15 on the basis of Final Accounts of FY 2013-14 and have subsequently added the yearly capitalizations for FY 2014-15 to FY 2018-19 as considered in the foregoing sections based on the proposed R&M/Refurbishment & Up-rating schemes, if any.

Accordingly the following table depicts the proposed Gross Fixed Asset balances along with the yearly capitalizations (if any) for the Control period FY 2014-15 to FY 2018-19:

Table: - Gross Fixed Assets Summary - FY 2014-15 to FY 2018-19

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	2,673.54	2,673.54	2,673.54	2,673.54	2,673.54
Capitalisation	-	-	-	-	-
Deletions	-	-	-	-	-
Closing GFA	**2,673.54**	**2,673.54**	**2,673.54**	**2,673.54**	**2,673.54**

1.1.2. Means of Finance

The Hon'ble Commission in its order dated 20th March 2012 and True-up Order dated 14th March, 2013 had prescribed a normative approach of financing of the capital expenditure in the ratio of 70% debt and 30% equity in line with the Tariff Regulations. Further the allowable depreciation had been considered as normative loan repayment.

In order to maintain consistency in approach, the Petitioner has considered the aforementioned philosophy and calculated the normative debt and normative equity. The opening values of accumulated depreciation, normative loan and normative equity as on 1.4.2014 has been adopted from the true-up petition filed for FY 2013-14. Accordingly the gross fixed asset balance, the net fixed asset balance and its financing is presented in the table below:

Table: Calculation of GFA, NFA and its financing

Figures in Rs Crore

Parichha Extn S-II Power Station	2014-15	2015-16	2016-17	2017-18	2018-19
Opening GFA	2,673.54	2,673.54	2,673.54	2,673.54	2,673.54
Additions	-	-	-	-	-
Deletions	-	-	-	-	-

Parichha Extn S-II Power Station	2014-15	2015-16	2016-17	2017-18	2018-19
Closing GFA	**2,673.54**	**2,673.54**	**2,673.54**	**2,673.54**	**2,673.54**
Closing Net FA	**2,430.65**	**2,281.29**	**2,131.93**	**1,982.56**	**1,833.20**
Financing:					
Opening Equity	802.06	802.06	802.06	802.06	802.06
Additions	-	-	-	-	-
Closing Equity	**802.06**	**802.06**	**802.06**	**802.06**	**802.06**
Open. Accumulated Depreciation	93.53	242.89	392.26	541.62	690.98
Depreciation during the year	149.36	149.36	149.36	149.36	149.36
Closing Accumulated Depreciation	**242.89**	**392.26**	**541.62**	**690.98**	**840.34**
Opening Debts	1,777.95	1,628.59	1,479.22	1,329.86	1,180.50
Additions	-	-	-	-	-
Less: Depreciation (normative repayment)	149.36	149.36	149.36	149.36	149.36
Closing Debts	**1,628.59**	**1,479.22**	**1,329.86**	**1,180.50**	**1,031.13**

1.1.3. Interest on Loan Capital

Regulation 25(i) of the UPERC Generation Regulations, 2014 provide the basis for computation of Interest on loan capital. It states that the Interest on loan capital shall be computed on the loans arrived at in the manner indicated in Regulation 24 i.e in the approved Debt: Equity ratio. The loan outstanding as on 1st April 2014 shall be worked out as the gross loan as per Regulation 24 minus cumulative repayment as admitted by the Commission up to 31st March 2014. The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year. In case of decapitalisation of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of decapitalisation of such asset.

Further, the rate of the interest shall be the weighted average rate of interest calculated on the basis of actual loans at the beginning of each year and shall be adjusted based on actual loan each year accordingly. If there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average of interest shall be considered.

Further, It is reiterated that the Petitioner has considered a normative tariff approach with a gearing of 70:30 as considered by the Hon'ble Commission in its True-up Order dated 14th

November, 2014. In this approach, 70% of the capital expenditure undertaken in any year has been considered to be financed through loan and balance 30% has been considered to be funded through equity contributions.

Allowable depreciation for the year has been considered as normative loan repayment. The weighted average rate of interest of overall long term loan portfolio for FY 2013-14 has been considered for FY 2014-15 to FY 2018-19, as it seems to be fair and equitable.

Considering the debt worked out as above and applying the rate of 12.50%, the interest on loan capital has been worked out in the table below:

Table: Summary of Interest on Loan for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Debts	1,777.95	1,628.59	1,479.22	1,329.86	1,180.50
Additions	-	-	-	-	-
Less: Normative repayment	149.36	149.36	149.36	149.36	149.36
Closing Debts	**1,628.59**	**1,479.22**	**1,329.86**	**1,180.50**	**1,031.13**
Average Debt	1,703.27	1,553.90	1,404.54	1,255.18	1,105.82
Interest on Loan	**178.84**	**163.16**	**147.48**	**131.79**	**116.11**

1.1.4. Depreciation

The Petitioner submits that the depreciation as per accounts is calculated as per the prescription of New Companies Act, 2013 which is depicted in the accounting policies annexed with the audited accounts. However the Tariff Regulations prescribe that the eligible depreciation shall be calculated annually, based on straight line method over the useful life of the asset and the rates prescribed in Appendix III of such regulations. It is noteworthy of mentioning that the Appendix III prescribes distinct depreciation rates for each class of assets.

The Petitioner has provided the asset class wise list of gross fixed assets in Form 12 of the tariff formats submitted along with this petition. Accordingly the Petitioner has calculated the eligible depreciation based on the rates prescribed in the tariff regulations.

The Petitioner reiterates that the detailed asset wise list is now available with the Hon'ble Commission. Such values are in accordance with the audited financial statements of the Petitioner. The rates of depreciation prescribed by the Hon'ble Commission in Appendix 3 of

the Generation Tariff Regulations prescribe different depreciation rates for different assets. In such circumstances it would only be fit to consider station wise depreciation calculated at the rates prescribed in Appendix 3 for different asset classes and not at the average rate.

While calculating the allowable depreciation, the petitioner has considered the residual life of the asset as 10% and depreciation has been considered up to maximum of 90% of the historical capital cost of the asset being in line with the provisions of the Generation Regulations, 2014.

The value of Gross Fixed Assets has been discussed in foregoing sections. The Petitioner has calculated station wise depreciation, on the Gross Fixed Asset (GFA) value of all the plants owned by it, at the rates specified in the Appendix 3 of Generation Tariff Regulations 2014.

The allowable depreciation is depicted in the table below:

Table: Depreciation Summary for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation as per Annexure III of the Regulations	149.36	149.36	149.36	149.36	149.36
Allowable Depreciation subject to maximum of 90% of the Capital Cost	149.36	149.36	149.36	149.36	149.36

1.1.5. Return on Equity

Regulation 25(iii) of the UPERC Generation Regulations, 2014 provides the base for determination of Return on Equity for the purpose of computation of fixed charges. The said regulations state that the Return on equity shall be computed in rupee terms on the equity base determined in accordance with Regulation 24 @15.5% per annum.

The equity base for the thermal power station as on 01.04.2014 has been considered as the closing equity balance for FY 2013-14 as submitted by the petitioner in its final true-up petition for FY 2013-14 submitted along with the MYT Petition. Thereafter 30% of the total capitalisation has been considered to be funded from equity infusion in each year of the control period.

As per the Generation Tariff Regulations, equity would be eligible for return when the asset is commissioned. Accordingly the table below provides the summary of equity base eligible for return and the Return on Equity claimed by the petitioner for the control period:

Table: Return on Equity for the Control Period (FY 2014-15 to FY 2018-19)

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	802.06	802.06	802.06	802.06	802.06
Additions	-	-	-	-	-
Closing Equity	**802.06**	**802.06**	**802.06**	**802.06**	**802.06**
Rate of Return on Equity (%)	15.5%	15.5%	15.5%	15.5%	15.5%
Allowable RoE	**124.32**	**124.32**	**124.32**	**124.32**	**124.32**

1.1.6. Operation & Maintenance Expenses

Regulation 21(iv) of the UPERC Generation Regulations, 2014 deals with the allowance of O&M expenses. The Hon'ble Commission in the generation tariff regulations – Para 25 (iv) (a) have prescribed the yearly O&M expenses for the control period FY 2014-15 to FY 2018-19 based upon the Installed Capacity for the thermal power stations other than plant for Obra A, Obra B, Panki, Harduaganj & Parichha TPS. The Hon'ble Commission has provided special dispensation in the O&M norms for the Thermal power plants namely Obra A, Obra B, Panki, Harduaganj & Parichha TPS, the same have been provided in the Para 25(iv)(b) of the Generation Regulation.

Accordingly based on the above stated norms the O&M expenses allowed for the power station for the Control period is depicted in the table below:

Table: O&M expense for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Capaicty (MW)	500	500	500	500	500
Norms (Rs Lakh/MW)	23.90	25.40	27.00	28.70	30.51
O&M Expenses (Rs Crore)	**119.50**	**127.00**	**135.00**	**143.50**	**152.55**

Further the Hon'ble Commission in its Para 25(iv) Note (c) has stated that the expenses on account of regulatory fee, payment to pollution control board, impact of pay revision, capital spares, cost of water and water cess shall be paid additionally at actuals subject to prudence check.

Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization.

1.1.7. Interest on Working Capital

The Petitioner has worked out the working capital requirement based on the normative parameters prescribed in Para 25 (v) of the UPERC Generation Tariff Regulations 2014. The rate of interest on working capital has been considered on normative basis as the Bank Rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof is declared under commercial operation, whichever is later.

The Petitioner for this Petition has considered the interest rate on working capital requirement at 12.50% including margin being the Bank rate as specified by the Reserve Bank of India as on 1st April 2014.

Further the Hon'ble Commission has provided the following norms for the purpose of calculating of the normative working capital for coal based generating stations:

i. Cost of coal for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal stock storage capacity whichever is lower
ii. Cost of coal for 30 days for generation corresponding to the target availability
iii. Cost of secondary fuel oil for two months corresponding to the target availability and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;
iv. Operation and Maintenance expenses for one month;
v. Maintenance spares @ 20% of operation and maintenance expenses; and

vi. Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the target availability.

Based on the above premise, the computation of interest on working capital for the control period for kind consideration and approval of the Hon'ble Commission are as per table below:

Table: Interest on Working Capital for the Control Period

(All figures in Rs Crs)

Parichha Extn. Stage II	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal	167.97	176.37	185.19	194.45	204.17
Cost of Main Secondary Fuel Oil	2.38	2.50	2.62	2.75	2.89
Fuel Cost	0.00	0.00	0.00	0.00	0.00
Liquid Fuel Stock	0.00	0.00	0.00	0.00	0.00
O & M Expenses	9.96	10.58	11.25	11.96	12.71
Maintenance Spares	23.90	25.40	27.00	28.70	30.51
Receivables	275.68	283.21	291.28	299.90	309.10
Total Working Capital	479.89	498.06	517.34	537.75	559.38
Rate of Interest	12.50%	12.50%	12.50%	12.50%	12.50%
Interest on Working Capital	**59.99**	**62.26**	**64.67**	**67.22**	**69.92**

1.1.8. Summary of Annual Capacity (Fixed) Charges

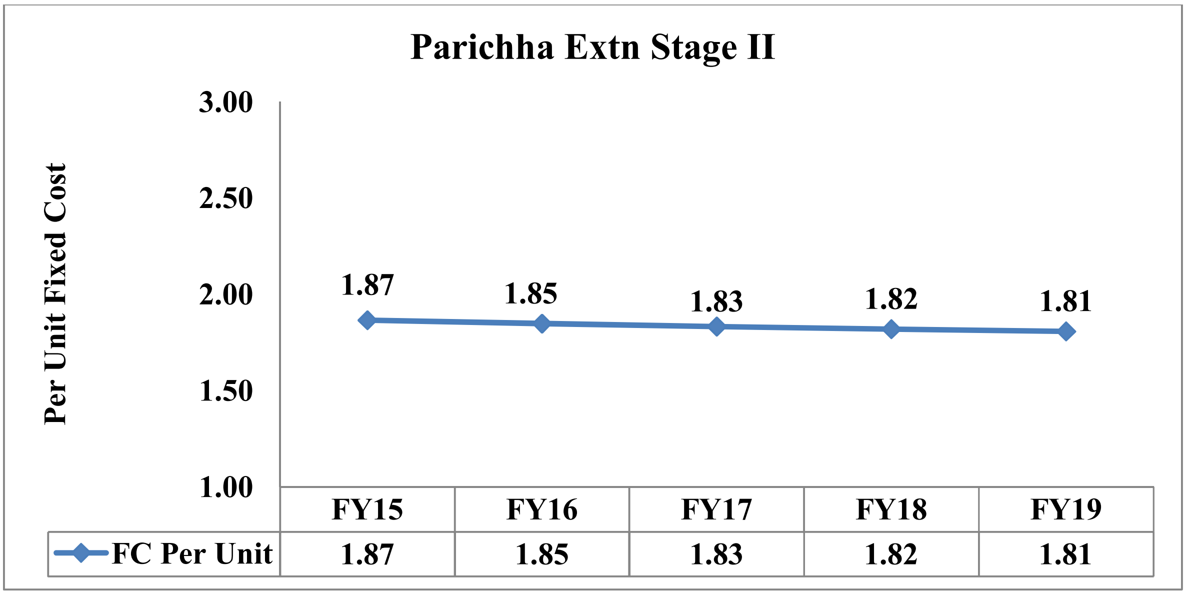
In view of the above submissions, the fixed cost of the Petitioner's Parichha Extn Stage II TPS for the control period under consideration works out at as under:

Table: Summary of Annual Capacity (Fixed) Charges for the Control Period

(All figures in Rs Crs)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	149.36	149.36	149.36	149.36	149.36
Interest on Loan Capital	178.84	163.16	147.48	131.79	116.11
Return on Equity	124.32	124.32	124.32	124.32	124.32
O&M Expenses	119.50	127.00	135.00	143.50	152.55
Compensation Allowance	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	59.99	62.26	64.67	67.22	69.92
Total Capacity Charges	**632.01**	**626.10**	**620.83**	**616.20**	**612.27**
Energy ex bus	3388	3388	3388	3388	3388
FC per unit	**1.87**	**1.85**	**1.83**	**1.82**	**1.81**

Graph: Fixed Cost per unit in the Control Period



1.2. Energy Charges

The following table highlights the normative parameters which the Hon'ble Commission has prescribed for the control period of FY 2014-15 to FY 2018-19:

Table Normative Operating Parameters for the Control Period

As per Tariff Generation Regulations for MYT FY 2015 to FY 2019

Normative Parameters	Unit	FY15	FY16	FY17	FY18	FY19
Target Availability	%	85%	85%	85%	85%	85%
Target PLF	%	85%	85%	85%	85%	85%
Aux Energy Consumption	%	9.0%	9.0%	9.0%	9.0%	9.0%
Gross Heat Rate	Kcal/kWh	2475	2475	2475	2475	2475
Specific Fuel Oil Cons	ml/kWh	0.75	0.75	0.75	0.75	0.75

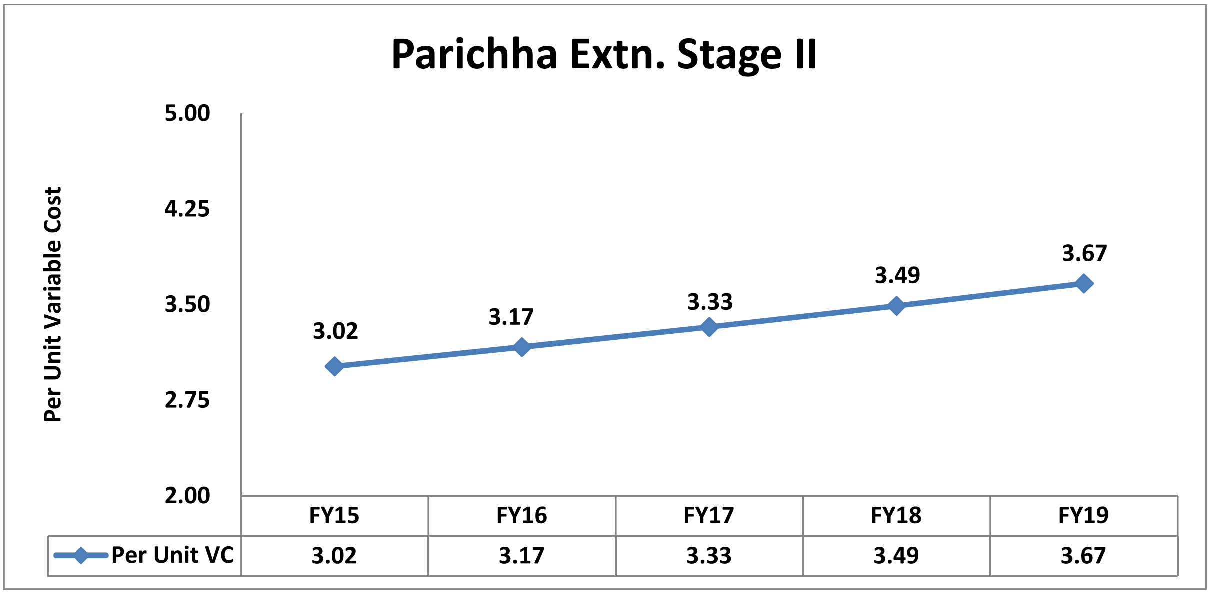
For the purpose of calculations of energy charges for FY 2014-15, the average of the actual GCV of coal and oil and actual cost thereof of the ending three months (October to December 2014) has been taken for the purpose of calculations of energy charges. The Petitioner has assumed an annual Escalation Rate of 5% in the price of fuels over the five year control period starting from the financial year 2014-15 upto FY 2018-19

Energy charges for the control period have been projected based on the operating parameters prescribed in the Generation Tariff Regulations. A summarized position of energy charges proposed for the control period is given in Table below: (The details are available in tariff filing formats prescribed by the Hon'ble Commission)

Table: Calculation of Energy Charges for the Control Period

Description	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Capacity	MW	500	500	500	500	500
PLF	%	85%	85%	85%	85%	85%
Gross Station Heat Rate	Kcal/kWh	2475	2475	2475	2475	2475
Auxiliary Energy Consumption	%	9.00%	9.00%	9.00%	9.00%	9.00%
Energy Generation - Gross	MU	3,723	3,723	3,723	3,723	3,723
Auxiliary Energy Consumption	MU	335	335	335	335	335
Ex-bus Energy Sent Out	MU	3,388	3,388	3,388	3,388	3,388
Specific Oil Consumption	ml/kWh	0.75	0.75	0.75	0.75	0.75
Wt. Avg. GCV of Oil	KCal/Lt	10,494	10,494	10,494	10,494	10,494
Price of Oil	Rs./KL	51,075	53,629	56,311	59,126	62,083
Wt. Avg. GCV of Coal	kCal/kg	3596	3596	3596	3596	3596
Price of Coal	Rs./MT	3,946	4,143	4,350	4,568	4,796
Heat Contribution from SFO	Kcal/kWh	7.87	7.87	7.87	7.87	7.87
Oil Consumption	KL	2792	2792	2792	2792	2792
Heat Contribution from Coal	Kcal/kWh	2467	2467	2467	2467	2467
Specific Coal Consumption	kg/kWh	0.69	0.69	0.69	0.69	0.69
Coal Consumption	MMT	2.55	2.55	2.55	2.55	2.55
Total Cost of Oil	Rs Cr	14.26	14.97	15.72	16.51	17.33
Total Cost of Coal	Rs Cr	1,007.82	1,058.21	1,111.12	1,166.68	1,225.01
Total Fuel Cost	Rs Cr	1,022.08	1,073.19	1,126.85	1,183.19	1,242.35
Rate of Energy Charge from Secondary Fuel Oil ex-bus	Paise/kWh	4.21	4.42	4.64	4.87	5.12
Rate of Energy Charge from Coal ex-bus	Paise/kWh	297.47	312.35	327.96	344.36	361.58
Rate of Energy Charge ex-bus per kWh	Paise/kWh	301.68	316.77	332.61	349.24	366.70

Graph: Variable Cost per unit in the Control Period



1.2.1. Fuel Cost Adjustment

Regulation 26 (i) (ii) & (iii) of the Generation Tariff Regulations 2014, provide the mechanism for claiming the adjustment of rate of energy charges on account of variation in price and heat values of fuels.

"Initially, Gross Calorific Value of coal or gas or liquid fuel shall be taken as per actual of the preceding three months. Any variation shall be adjusted on month to month basis on the basis of Gross Calorific Value of coal or gas or liquid fuel received and burnt and landed cost incurred by the generating company for procurement of coal, oil, or gas or liquid fuel, as the case may be. No separate petition need to be filed with the Commission for fuel price adjustment. In case of any dispute, an appropriate application in accordance with Uttar Pradesh Electricity Regulatory Commission (Conduct of Business) Regulations 2004, as amended from time to time or any statutory re-enactment thereof, shall be made before the Commission"

Accordingly the Petitioner would raise bills for recovery of Fuel Cost Adjustment.

ANPARA 'D' TPS

ANPARA 'D' THERMAL POWER STATION

MULTI YEAR TARIFF PETITION

FOR

DETERMINATION OF TARIFF FOR

CONTROL PERIOD

FY 2014-15 to FY 2018-19

UP RAJYA VIDYUT UTPADAN NIGAM LTD

1. ANNUAL REVENUE REQUIREMENT & MULTI-YEAR TARIFF PETITION OF 'ANPARA 'D' TPS'

This is a typical project, probably the first of its kind in the country being built on ash pond, the GoUP had accorded its approval for setting up a 2 x 500 MW thermal power plant in Sonebhadra district of UP. This Anpara 'D' (2x500 MW) plant is being installed as an extension project in the premises of 3x210 MW Anpara 'A' and 2x500 MW Anpara 'B. This project is being constructed on abandoned ash pond of Anpara Thermal Power Station Distt. Sonebhadra. The nearest railway station is Anpara & Krishnashila Railway Staion on Shaktinagar – Chopan Section (BG) of West Central Railway at a distance of 5-6 kms approx. The detailed project report was prepared by M/s NTPC, a copy of which is enclosed as Annexure B. The total expenditure incurred till 31st March, 2015 is to the tune of Rs. 5,880.49 crore, the statutory auditor certificate in this regard is hereby attached with the petition as Exhibit C.

The cost estimate of the Thermal Power Station is given in table below:

Table: Abstract of Cost Estimate of Anpara 'D' (2x500 MW) TPS

Name/No. of Construction / Supply / Service Package	Cost Estimate of Anpara 'D' (2x500 MW) TPS (Rs Crore)
BTG	3395.5
Water System Package	82.4
CHP	431.4
Miscellaneous (Civil) Package	29.7
Wagon Tippler Package	53.5
MGR	309.5
GRP	3.8
Transmission line shifting	57.0
SWITCH YARD	457.7
CONSULTANCY	68.0
OTHERS	426.1
CONTINGENCY	131.0
IDC	1581.8
Total	**7027.4**

The Board of Directors of UPRVUNL in the 159th Board Meeting accorded its approval to the project cost of Rs 7,027.40 crs on 08.08.2014. The Energy Task Force has also approved the same on 19th November, 2014 and by the State Cabinet on 19th March, 2015. The documentary evidences in respect of minutes of the BoD meeting, minutes of the ETF and Govt approval are enclosed herewith as Exhibit B.

The first unit of this power station has already been synchronized on 31st March, 2015 and the second unit is expected to get commissioned by 30th September 2015. Based on the aforementioned scheduled date of commissioning the Annual Revenue Requirement for determination of Provisional Tariff is detailed in the upcoming sections.

The following sections detail the Annual Revenue Requirement and Tariff Petition of Anpara 'D' .TPS for the five year control period of FY 2014-15 to FY 2018-19

1.1. Annual Capacity (Fixed Charges) Charges

As per tariff regulations the annual capacity (fixed) charges consist of

a. Interest on Loan Capital

b. Depreciation including Advance against Depreciation

c. Return on Equity

d. Operation and maintenance expenses including insurance and

e. Interest on Working Capital

f. Compensation Allowance

1.1.1. Gross Fixed Assets

Regulation 19.2 of the UPERC Generation Regulations, 2014 provide the basis for determination of the final tariff for a new project shall be based on the admitted capital cost which shall include:

a. the expenditure actually incurred up to the date of commercial operation of the project;
b. Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;
c. Increase in cost in contract packages as approved by the Commission
d. Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 20 of these regulations;

e. Capitalised initial spares subject to ceiling norms of 4% (as a percentage of the Plant and Machinery cost) for coal/lignite based generating stations upto cut-off date (excluding IDC, IEDC, Land Cost and cost of civil works);

   Provided where the benchmark norms for initial spares have been published as part of the benchmark norms for capital cost by the Central Electricity Regulatory Commission and are adopted by the Commission for prudence check, such norms shall apply to the exclusion of the norms specified above:

   Provided where the generating station has any transmission equipment forming part of the generation project, the ceiling norms for initial spares for such equipment shall be as per the ceiling norms specified by the Commission for transmission system from time to time.

f. Expenditure on account of additional capitalization and decapitalisation determined in accordance with Regulation 22 of these regulations; and
g. Adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 23 of these regulations.

Accordingly the following table depicts the proposed Gross Fixed Asset balances along with the yearly capitalizations (if any) for the Control period FY 2014-15 to FY 2018-19:

Table: - Gross Fixed Assets Summary - FY 2014-15 to FY 2018-19

(All figures in Rs Crs)

Particulars	2015-16	2016-17	2017-18	2018-19
Opening GFA	-	7,027.40	7,027.40	7,027.40
Capitalisation	7,027.40	-	-	-
Deletions	-	-	-	-
Closing GFA	**7,027.40**	**7,027.40**	**7,027.40**	**7,027.40**

1.1.2. Means of Finance

The Hon'ble Commission in its order dated 20th March 2012 and True-up Order dated 14th March, 2013 had prescribed a normative approach of financing of the capital expenditure in the ratio of 70% debt and 30% equity in line with the Tariff Regulations. Further the allowable depreciation had been considered as normative loan repayment.

In order to maintain consistency in approach, the Petitioner has considered the aforementioned philosophy and calculated the normative debt and normative equity. The opening values of accumulated depreciation, normative loan and normative equity as on 1.4.2014 has been adopted from the true-up petition filed for FY 2013-14. Accordingly the gross fixed asset balance, the net fixed asset balance and its financing is presented in the table below:

Table: Calculation of GFA, NFA and its financing

Figures in Rs Crore

Anpara 'D' Power Station	2015-16	2016-17	2017-18	2018-19
Opening GFA	-	7,027.40	7,027.40	7,027.40
Additions	7,027.40	-	-	-
Deletions	-	-	-	-
Closing GFA	**7,027.40**	**7,027.40**	**7,027.40**	**7,027.40**
Closing Net FA	**6,832.27**	**6,442.00**	**6,051.73**	**5,661.46**
Financing:				
Opening Equity	-	2,108.22	2,108.22	2,108.22
Additions	2,108.22	-	-	-
Closing Equity	**2,108.22**	**2,108.22**	**2,108.22**	**2,108.22**
Open. Accumulated Depreciation	-	195.13	585.40	975.67
Depreciation during the year	195.13	390.27	390.27	390.27
Closing Accumulated Depreciation	**195.13**	**585.40**	**975.67**	**1,365.94**
Opening Debts	-	4,724.05	4,333.78	3,943.51
Additions	4,919.18	-	-	-
Less: Depreciation (normative repayment)	195.13	390.27	390.27	390.27
Closing Debts	**4,724.05**	**4,333.78**	**3,943.51**	**3,553.24**

1.1.3. Interest on Loan Capital

Regulation 25(i) of the UPERC Generation Regulations, 2014 provide the basis for computation of Interest on loan capital. It states that the Interest on loan capital shall be computed on the loans arrived at in the manner indicated in Regulation 24 i.e in the approved Debt: Equity ratio. The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year. In case of decapitalisation of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of decapitalisation of such asset.

Further, the rate of the interest shall be the weighted average rate of interest calculated on the basis of actual loans at the beginning of each year and shall be adjusted based on actual loan each year accordingly. If there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average of interest shall be considered.

Further, It is reiterated that the Petitioner has considered a normative tariff approach with a gearing of 70:30 as considered by the Hon'ble Commission in its True-up Order dated 14th November, 2014. In this approach, 70% of the capital expenditure undertaken in any year has been considered to be financed through loan and balance 30% has been considered to be funded through equity contributions.

Allowable depreciation for the year has been considered as normative loan repayment. The weighted average rate of interest of overall long term loan portfolio for FY 2013-14 has been considered for FY 2014-15 to FY 2018-19, as it seems to be fair and equitable.

Considering the debt worked out as above and applying the rate of 12.50%, the interest on loan capital has been worked out in the table below:

Table: Summary of Interest on Loan for the Control Period

(All figures in Rs Crs)

Particulars	2015-16	2016-17	2017-18	2018-19
Opening Debts	-	4,724.05	4,333.78	3,943.51
Additions	4,919.18	-	-	-
Less: Normative repayment	195.13	390.27	390.27	390.27
Closing Debts	**4,724.05**	**4,333.78**	**3,943.51**	**3,553.24**
Average Debt	2,362.02	4,528.91	4,138.64	3,748.37
Interest on Loan	**295.25**	**566.11**	**517.33**	**468.55**

1.1.4. Depreciation

The Petitioner submits that the depreciation as per accounts is calculated as per the prescription of New Companies Act, 2013 which is depicted in the accounting policies annexed with the audited accounts. However the Tariff Regulations prescribe that the eligible depreciation shall be calculated annually, based on straight line method over the useful life of the asset and the rates prescribed in Appendix III of such regulations. It is noteworthy of mentioning that the Appendix III prescribes distinct depreciation rates for each class of assets.

The Petitioner has provided the asset class wise list of gross fixed assets in Form 12 of the tariff formats submitted along with this petition. Accordingly the Petitioner has calculated the eligible depreciation based on the rates prescribed in the tariff regulations.

The Petitioner reiterates that the detailed asset wise list is now available with the Hon'ble Commission. Such values are in accordance with the audited financial statements of the Petitioner. The rates of depreciation prescribed by the Hon'ble Commission in Appendix 3 of the Generation Tariff Regulations prescribe different depreciation rates for different assets. In such circumstances it would only be fit to consider station wise depreciation calculated at the rates prescribed in Appendix 3 for different asset classes and not at the average rate.

While calculating the allowable depreciation, the petitioner has considered the residual life of the asset as 10% and depreciation has been considered up to maximum of 90% of the historical capital cost of the asset being in line with the provisions of the Generation Regulations, 2014.

The value of Gross Fixed Assets has been discussed in foregoing sections. The Petitioner has calculated station wise depreciation, on the Gross Fixed Asset (GFA) value of all the plants owned by it, at the rates specified in the Appendix 3 of Generation Tariff Regulations 2014.

The allowable depreciation is depicted in the table below:

Table: Depreciation Summary for the Control Period

(All figures in Rs Crs)

Particulars	2015-16	2016-17	2017-18	2018-19
Depreciation as per Annexure III of the Regulations	195.13	390.27	390.27	390.27
Allowable Depreciation subject to maximum of 90% of the Capital Cost	195.13	390.27	390.27	390.27

1.1.5. Return on Equity

Regulation 25(iii) of the UPERC Generation Regulations, 2014 provides the base for determination of Return on Equity for the purpose of computation of fixed charges. The said regulations state that the Return on equity shall be computed in rupee terms on the equity base determined in accordance with Regulation 24 @15.5% per annum. 30% of the total capitalisation has been considered to be funded from equity infusion in each year of the control period.

As per the Generation Tariff Regulations, equity would be eligible for return when the asset is commissioned. Accordingly the table below provides the summary of equity base eligible for return and the Return on Equity claimed by the petitioner for the control period:

Table: Return on Equity for the Control Period (FY 2014-15 to FY 2018-19)

(All figures in Rs Crs)

Particulars	2015-16	2016-17	2017-18	2018-19
Opening Equity	-	2,108.22	2,108.22	2,108.22
Additions	2,108.22	-	-	-
Closing Equity	**2,108.22**	**2,108.22**	**2,108.22**	**2,108.22**
Rate of Return on Equity (%)	15.5%	15.5%	15.5%	15.5%
Allowable RoE	**326.77**	**326.77**	**326.77**	**326.77**

1.1.6. Operation & Maintenance Expenses

Regulation 21(iv) of the UPERC Generation Regulations, 2014 deals with the allowance of O&M expenses. The Hon'ble Commission in the generation tariff regulations – Para 25 (iv) (a) have prescribed the yearly O&M expenses for the control period FY 2014-15 to FY 2018-19 based upon the Installed Capacity for the thermal power stations other than plant for Obra A, Obra B, Panki, Harduaganj & Parichha TPS. The Hon'ble Commission has provided special dispensation in the O&M norms for the Thermal power plants namely Obra A, Obra B, Panki, Harduaganj & Parichha TPS, the same have been provided in the Para 25(iv)(b) of the Generation Regulation.

Accordingly based on the above stated norms the O&M expenses allowed for the power station for the Control period is depicted in the table below:

Table: O&M expense for the Control Period

(All figures in Rs Crs)

Particulars	2015-16	2016-17	2017-18	2018-19
Capaicty (MW)	1000	1000	1000	1000
Norms (Rs Lakh/MW)	17.01	18.08	19.22	20.43
O&M Expenses (Rs Crore)	**170.10**	**180.80**	**192.20**	**204.30**

Further the Hon'ble Commission in its Para 25(iv) Note (c) has stated that the expenses on account of regulatory fee, payment to pollution control board, impact of pay revision, capital spares, cost of water and water cess shall be paid additionally at actuals subject to prudence check.

Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization.

1.1.7. Interest on Working Capital

The Petitioner has worked out the working capital requirement based on the normative parameters prescribed in Para 25 (v) of the UPERC Generation Tariff Regulations 2014. The rate of interest on working capital has been considered on normative basis as the Bank Rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof is declared under commercial operation, whichever is later.

The Petitioner for this Petition has considered the interest rate on working capital requirement at 12.50% including margin being the Bank rate as specified by the Reserve Bank of India as on 1st April 2014.

Further the Hon'ble Commission has provided the following norms for the purpose of calculating of the normative working capital for coal based generating stations:

i. Cost of coal for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal stock storage capacity whichever is lower
ii. Cost of coal for 30 days for generation corresponding to the target availability
iii. Cost of secondary fuel oil for two months corresponding to the target availability and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;
iv. Operation and Maintenance expenses for one month;
v. Maintenance spares @ 20% of operation and maintenance expenses; and
vi. Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the target availability.

Based on the above premise, the computation of interest on working capital for the control period for kind consideration and approval of the Hon'ble Commission are as per table below:

Table: Interest on Working Capital for the Control Period

(All figures in Rs Crs)

Anpara D	2015-16	2016-17	2017-18	2018-19
Cost of Coal	187.57	196.95	206.80	217.14
Cost of Main Secondary Fuel Oil	6.11	6.41	6.73	7.07
Fuel Cost	0.00	0.00	0.00	0.00

Anpara D	2015-16	2016-17	2017-18	2018-19
Liquid Fuel Stock	0.00	0.00	0.00	0.00
O & M Expenses	14.18	15.07	16.02	17.03
Maintenance Spares	34.02	36.16	38.44	40.86
Receivables	370.99	462.29	466.60	471.56
Total Working Capital	612.86	716.88	734.58	753.65
Rate of Interest	12.50%	12.50%	12.50%	12.50%
Interest on Working Capital	**76.61**	**89.61**	**91.82**	**94.21**

1.1.8. Summary of Annual Capacity (Fixed) Charges

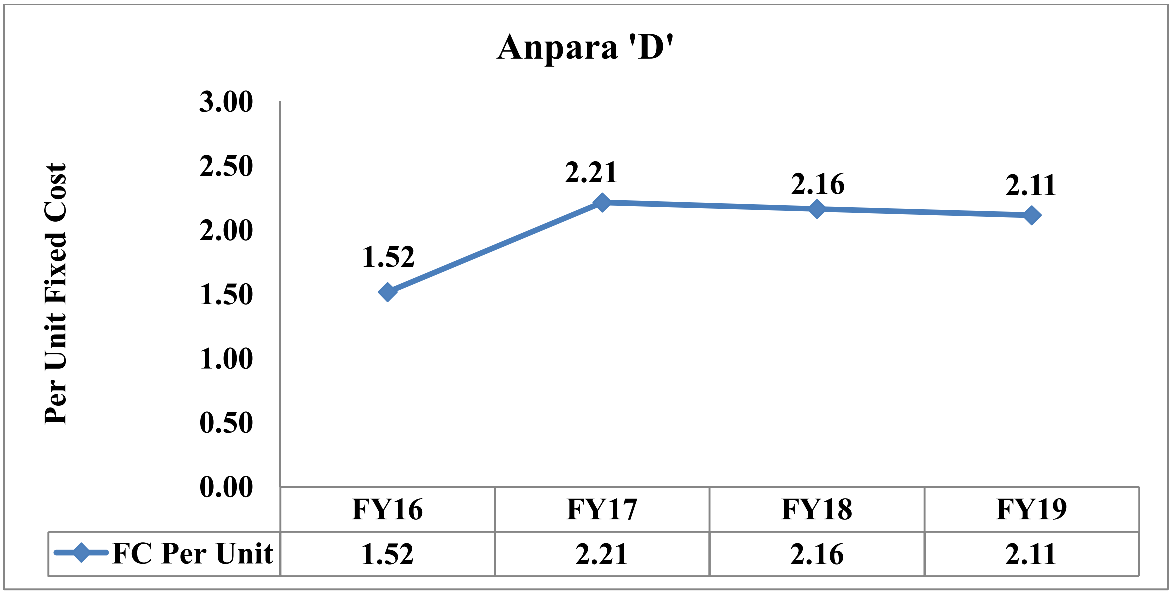
In view of the above submissions, the fixed cost of the Petitioner's Anpara D TPS for the control period under consideration works out at as under:

Table: Summary of Annual Capacity (Fixed) Charges for the Control Period

(All figures in Rs Crs)

Particulars	2015-16	2016-17	2017-18	2018-19
Depreciation	195.13	390.27	390.27	390.27
Interest on Loan Capital	295.25	566.11	517.33	468.55
Return on Equity	326.77	326.77	326.77	326.77
O&M Expenses	170.10	180.80	192.20	204.30
Compensation Allowance	0.00	0.00	0.00	0.00
Interest on Working Capital	76.61	89.61	91.82	94.21
Total Capacity Charges	**1063.87**	**1553.57**	**1518.40**	**1484.10**
Energy ex bus	7018	7018	7018	7018
FC per unit	**1.52**	**2.21**	**2.16**	**2.11**

Graph: Fixed Cost per unit in the Control Period



1.2. Energy Charges

The following table highlights the normative parameters which the Hon'ble Commission has prescribed for the control period of FY 2014-15 to FY 2018-19:

Table Normative Operating Parameters for the Control Period

As per Tariff Generation Regulations for MYT FY 2015 to FY 2019

Normative Parameters	Unit	FY15	FY16	FY17	FY18	FY19
Target Availability	%	85%	85%	85%	85%	85%
Target PLF	%	85%	85%	85%	85%	85%
Aux Energy Consumption	%	5.75%	5.75%	5.75%	5.75%	5.75%
Gross Heat Rate	Kcal/kWh	2410	2410	2410	2410	2410
Specific Fuel Oil Cons	ml/kWh	0.75	0.75	0.75	0.75	0.75

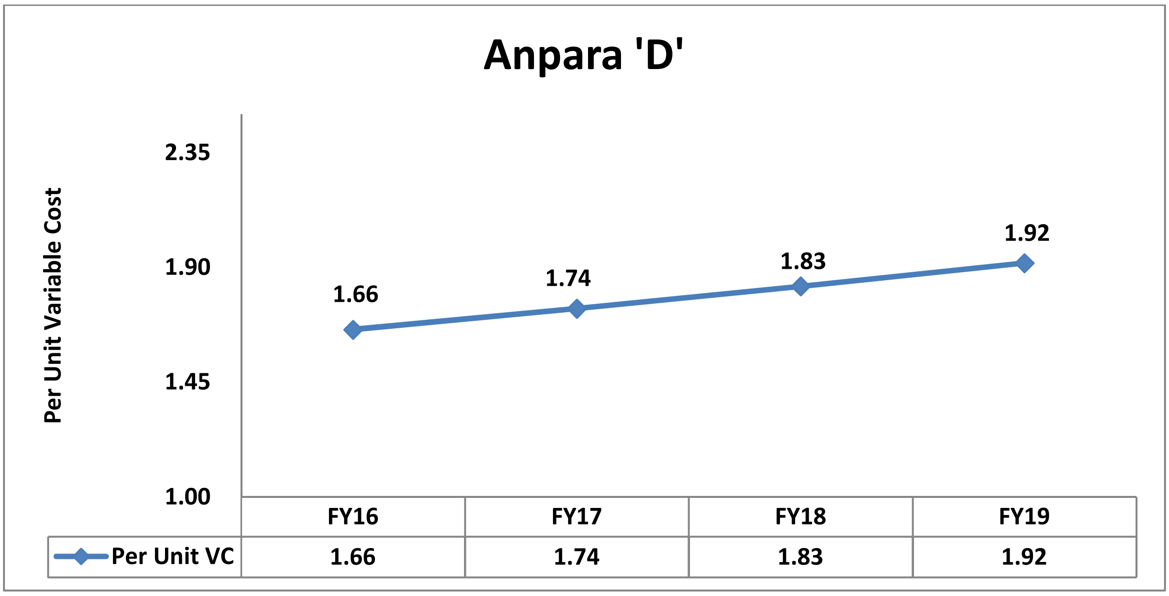
For the purpose of calculations of energy charges for FY 2014-15, the average of the actual GCV of coal and oil and actual cost thereof of the ending three months (October to December 2014) has been taken for the purpose of calculations of energy charges. The Petitioner has assumed an annual Escalation Rate of 5% in the price of fuels over the five year control period starting from the financial year 2014-15 upto FY 2018-19

Energy charges for the control period have been projected based on the operating parameters prescribed in the Generation Tariff Regulations. A summarized position of energy charges proposed for the control period is given in Table below: (The details are available in tariff filing formats prescribed by the Hon'ble Commission)

Table: Calculation of Energy Charges for the Control Period

Description	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Capacity	MW	1000	1000	1000	1000	1000
PLF	%	85%	85%	85%	85%	85%
Gross Station Heat Rate	Kcal/kWh	2410	2410	2410	2410	2410
Auxiliary Energy Consumption	%	5.75%	5.75%	5.75%	5.75%	5.75%
Energy Generation - Gross	MU	7,446	7,446	7,446	7,446	7,446
Auxiliary Energy Consumption	MU	428	428	428	428	428
Ex-bus Energy Sent Out	MU	7,018	7,018	7,018	7,018	7,018
Specific Oil Consumption	ml/kWh	0.75	0.75	0.75	0.75	0.75
Wt. Avg. GCV of Oil	KCal/Lt	10,657	10,657	10,657	10,657	10,657
Price of Oil	Rs./KL	62,492	65,616	68,897	72,342	75,959
Wt. Avg. GCV of Coal	kCal/kg	3061	3221	3221	3221	3221
Price of Coal	Rs./MT	1,930	2,027	2,128	2,235	2,346
Heat Contribution from SFO	Kcal/kWh	8	8	8	8	8
Oil Consumption	KL	5585	5585	5585	5585	5585
Heat Contribution from Coal	Kcal/kWh	2402	2402	2402	2402	2402
Specific Coal Consumption	kg/kWh	0.78	0.75	0.75	0.75	0.75
Coal Consumption	MMT	5.84	5.55	5.55	5.55	5.55
Total Cost of Oil	Rs Cr	34.90	36.64	38.48	40.40	42.42
Total Cost of Coal	Rs Cr	1,127.86	1,125.42	1,181.70	1,240.78	1,302.82
Total Fuel Cost	Rs Cr	1,162.76	1,162.07	1,220.17	1,281.18	1,345.24
Rate of Energy Charge from Secondary Fuel Oil ex-bus	Paise/kWh	4.97	5.22	5.48	5.76	6.04
Rate of Energy Charge from Coal ex-bus	Paise/kWh	160.71	160.37	168.38	176.80	185.64
Rate of Energy Charge ex-bus per kWh	Paise/kWh	165.69	165.59	173.87	182.56	191.69

Graph: Variable Cost per unit in the Control Period



1.2.1. Fuel Cost Adjustment

Regulation 26 (i) (ii) & (iii) of the Generation Tariff Regulations 2014, provide the mechanism for claiming the adjustment of rate of energy charges on account of variation in price and heat values of fuels.

"Initially, Gross Calorific Value of coal or gas or liquid fuel shall be taken as per actual of the preceding three months. Any variation shall be adjusted on month to month basis on the basis of Gross Calorific Value of coal or gas or liquid fuel received and burnt and landed cost incurred by the generating company for procurement of coal, oil, or gas or liquid fuel, as the case may be. No separate petition need to be filed with the Commission for fuel price adjustment. In case of any dispute, an appropriate application in accordance with Uttar Pradesh Electricity Regulatory Commission (Conduct of Business) Regulations 2004, as amended from time to time or any statutory re-enactment thereof, shall be made before the Commission"

Accordingly the Petitioner would raise bills for recovery of Fuel Cost Adjustment.