

**FILING OF PETITION FOR TRUE UP OF FY 2014-15 & FY 2015-16
AND
REVIEW OF OPERATIONAL PARAMETERS FOR FY 2016-17**

To



JHARKHAND STATE ELECTRICITY REGULATORY COMMISSION (JSERC)

Submitted by:



Tenughat Vidyut Nigam Limited (TVNL)
(A Government of Jharkhand Undertaking)
Hinoo, Doranda, Ranchi-834 002

November, 2017



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**BEFORE THE JHARKHAND STATE ELECTRICITY REGULATORY
COMMISSION**

Filing No: _____

Case No: _____

IN THE MATTER OF:

Filing of Petition for True Up of FY 2014-15 for TVNL under JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010 issued by the Honourable Jharkhand State Electricity Regulatory Commission (JSERC), hereinafter referred to as Honourable Commission.

AND

IN THE MATTER OF:

Filing of Petition for True Up of FY 2015-16 and Review of operational performance for FY 2016-17 for TVNL under JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010 issued by the Honourable Jharkhand State Electricity Regulatory Commission (JSERC), hereinafter referred to as Honourable Commission.

Tenughat Vidyut Nigam Limited ("TVNL")

Hinoo, Doranda, Ranchi

Jharkhand – 834 002

.....**PETITIONER**

The Petitioner respectfully submits



1 INTRODUCTION

1.1 Background

1.1.1 Tenughat Vidyut Nigam Limited is a power generating company incorporated on 26th November 1987 under Indian Company's Act, 1956. With the creation of Jharkhand state on 15th November 2000 from the erstwhile Bihar State, the TVNL became an undertaking of Government of Jharkhand. The TVNL owns and operates an installed power generation capacity of 420 MW with two units of 210 MW each at Tenughat Thermal Power Station located at Lalpania at the banks of Tenughat reservoir in Bokaro district with its head office at Ranchi. The units were commissioned as detailed below:

1. Unit I - September 1996
2. Unit II - September 1997

1.1.2 TVNL further aims to consolidate its position as the leading thermal power generation company in Jharkhand and to diversify across the power value chain in Jharkhand by considering backward and forward integration into areas such as transmission, distribution, coal mining etc.

1.2 MYT Order for First Control Period FY 2012-13 to FY 2015-16

1.2.1 The Honorable Commission in its order of 30th May 2012 has determined ARR for control period (FY 2012-13- FY 2015-16).

1.3 Present Petition

1.3.1 The Honorable Commission has notified the regulations on Terms and Conditions for Determination of Generation Tariff on 27th Oct 2010 in exercise of the powers conferred by Section 61 and 62 read with Section 181 of the Electricity Act, 2003.

1.3.2 The Hon'ble Commission issued combined order on Business Plan and MYT on 30th May 2012 for control period FY 2012-13 to FY 2015-16.

1.3.3 The Petitioner had submitted its Business Plan and MYT Petition for the Second (2nd) Control Period FY 2016-17 to FY 2020-21 on 27th April 2017 which is under process of approval by the Hon'ble Commission.



1.3.4 In compliance to the directives of the Hon'ble Commission, the petitioner herewith submits the True Up petition for FY 2014-15 and for FY 2015-16 based on the Internal Audited Annual Accounts of TVNL under JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010. TVNL also submits the Annual Operational Performance Review for FY 2016-17 based on the actual generation data and Internal Audited Annual Accounts of FY 2016-17.

1.3.5 The Petitioner submits that the Annual Accounts till FY 2011-12 have been audited by Statutory Auditor. Statutory audit of Annual Accounts of FY 2011-12 was completed on 24th November 2016. Furthermore for statutory audit of Annual Accounts of FY 2012-13, audit has been completed by M/s. U. Narain & Co., Ranchi (appointed by CAG) and also by the Jharkhand AG. Now, it shall be sent to Comptroller & Auditor General (CAG), New Delhi for final comments and approval.

Also, the same firm M/s. U. Narain & Co., Ranchi has started the statutory audit of Annual Accounts of TVNL for FY 2013-14.

Additionally, the Petitioner would like to submit that the Annual Accounts for the period FY 2012-13 to FY 2016-17 have been audited by the Internal Auditor of TVNL. The copy of Internal Audited Annual Accounts of FY 2013-14 & FY 2014-15 has been provided in Annexure.

1.3.6 In light of the above mentioned situation, the Petitioner therefore prays to the Hon'ble Commission to admit this True Up petition for FY 2014-15 and FY 2015-16 and Review of Operational Parameters of FY 2016-17.



2 EXECUTIVE SUMMARY

2.1 Introduction

2.1.1 Petitioner has over the years made efforts to improve its performance across all the parameters in order to provide reliable and affordable supply. In this endeavor; timely receipt of its energy charges from its client is very important to ensure compliance of good O&M practices and plant betterment plans. Petitioner has submitted to the Commission in its earlier prayers that the Jharkhand State Electricity Board (JSEB) has not been paying energy dues in time which is impacting the performance. As at 31st March 2017, JSEB owes TVNL cumulative dues of Rupees Three Thousand Two Hundred Fifty Two Crores and Ninety Five Paise i.e. INR **3252.95 Cr.**

2.1.2 Petitioner would like to request the Hon'ble Commission to consider this parameter while approving the revenue requirement as late realization of payment affects execution of its O&M Plans which in turn has inherent cost of carry and increases all the associated costs of generation.

2.1.3 TVNL submits that non-payment has been impacting its financial performance; which in turn has been severely impacting its operating performance as its performance improvement plans are getting hampered.

2.2 Revenue Requirements for FY 2014-15

2.2.1 In terms of overall costs; the fixed and variable charges for FY 2014-15 on the basis of TVNL's Internal Audited Annual Accounts works out as under:

Table 1 : Revenue Requirement for FY 2014-15 (INR Cr.)

Components	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actuals as per Annual Accounts of FY 2014-15
Fixed Charges	414.70	363.72	374.64
Energy Charges	367.52	312.26	377.73
Revenue Requirement	782.23	675.98	752.37
Other Income	10.05	16.91	36.58
Total	772.18	659.07	715.79



2.3 Revenue Requirements for FY 2015-16

2.3.1 In terms of overall costs; the fixed and variable charges for FY 2015-16 on the basis of TVNL's Internal Audited Annual Accounts works out as under:

Table 2 : Revenue Requirement for FY 2015-16 (INR Cr.)

Components	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2015-16
Fixed Charges	431.77	370.36	421.81
Energy Charges	387.87	297.08	522.58
Revenue Requirement	819.63	667.44	944.39
Other Income	10.05	16.91	34.29
Total	809.58	650.53	910.10

2.4 Operational Performance for FY 2016-17

Table 3: Operational Parameters

Parameters	Actual as per Annual Accounts of FY 2015-16	Submitted by the Petitioner in the MYT Tariff Petition for FY 2016-17	FY 2016-17 Actuals
Capacity in MW	420.00	420.00	420
Plant Availability Factor (%)	87.4%	85%	48.38
PLF (Overall in %) Unit-I & Unit-II	71.46%	85%	38.62
Gross Generation (Mus) - Unit-I & Unit-II*	2636.31	3127.00	1421.02
Auxiliary Consumption (%)	11.68%	9.50%	13.67%
Net Generation (Mus) -Overall	2328.28	2830.00	1419.07
Station Heat Rate (kCal/kWh)	2753.24	3043.00	2795.41
Gross Calorific Value of Coal (Kcal/Kg)	3601.78	3615.25	3642.95
Transit Loss (%)	0.20%	0.20%	0.20%
Total Coal Consumption (MT)	1995494.61	2629469.00	1075059.13
Cost of Coal (Rs/MT)	2491.60	2458.11	2542.81
Total Cost of Coal (Rs Cr)	497.20	646.35	273.37
Energy Charges (Rs/kwh)	2.14	2.28	1.93



3 TRUE UP OF FY 2014-15

For the purpose of True Up, TVNL has compared the actual cost for FY 2014-15 with the cost approved by the Hon'ble Commission in MYT Tariff Order dated May, 2012 in which Hon'ble Commission has determined ARR for FY 2014-15. The various parameters for the process of True-up have been discussed below:

3.1 Plant Load Factor and Plant Availability Factor

3.1.1 It is submitted that for FY 2014-15 the actual PLF was **64.7%** and the actual PAF (Running Hour based) was **79.67%**. The same may be verified from system reports generated on daily basis which are then compiled for generating monthly data.

3.1.2 Against the actual PLF and PAF for FY 2014-15 as mentioned above, the petitioner would like to mention that the Hon'ble Commission had approved figures of **85%** and **85%** for PLF & PAF for FY 2014-15 in the MYT order dated 30th May 2012.

3.1.3 The petitioner submits that the Normative Plant Availability Factor based on Declared Capacity works out to **79.91%**. Thus, TVNL requests the Hon'ble Commission to approve PAF at **79.91%** for FY 2014-15 on normative basis for the purpose of true-up.

3.2 Gross generation

3.2.1 It is submitted that actual gross generation for TVNL is at **2,380.46** MUs for FY 2014-15. Against the actual for FY 2014-15, the petitioner would like to mention that the Hon'ble Commission had approved figures of **3,127 MUs** for FY 2014-15 in the MYT order dated 30th May 2012.

3.2.2 The difference in approved and actual figures is on account of actual PLF (**64.70%**) and approved PLF (**85%**) for FY 2014-15.

3.2.3 Thus, TVNL requests the Hon'ble Commission to approve the gross generation of **2,380.46** MUs for FY 2014-15 based on the **actual PLF** for FY 2014-15.

3.3 Auxiliary Consumption

3.3.1 TVNL requests the Hon'ble Commission to approve the auxiliary consumption at **11.34%** for FY 2014-15 as against **9.50%** approved by the Hon'ble Commission in the MYT order dated 30th May 2012.



3.4 Net Generation

- 3.4.1 It is submitted that actual net generation for TVNL is at **2,110.42** MUs for FY 2014-15. Against the actual for FY 2014-15, the petitioner would like to mention that the Hon'ble Commission had approved figures of **2,830 MUs** for FY 2014-15 in the MYT order dated 30th May 2012.
- 3.4.2 A difference in approved and actual figures is on account of actual (**11.34%**) and approved auxiliary consumption (**9.5%**) for FY 2014-15 along with Actual PLF (64.70%) and approved PLF (**85%**).
- 3.4.3 Thus, TVNL requests the Hon'ble Commission to approve the net generation of **2,110.42** MUs for FY 2014-15 based on the actual values of PLF & auxiliary consumption for FY 2014-15.

3.5 Station Heat Rate

- 3.5.1 It is submitted that the actual station heat rate of TVNL is at **2843** kcal/kWh for FY 2014-15. The petitioner would like to mention that the Hon'ble Commission had approved figure of **2638** kcal/kWh for FY 2014-15 in the MYT order dated 30th May 2012 as submitted by petitioner in MYT petition.
- 3.5.2 The petitioner would further like to submit that over the years it has taken a number of measures to improve its Station Heat Rate which is also evident from the table given below. The Station Heat Rate has been improved from 3031.71 kCal/kWh in FY 2011-12 to 2843 kCal/kWh in FY 2014-15.

Year	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Station Heat Rate (Kcal/kWh)	3031.71	2939.68	2778.07	2843

- 3.5.3 Also, the petitioner would like to submit that according to the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015 published on 20th January 2016, under the Norms of Operation for the 2nd Control Period (FY 17 to FY 21), Station Heat Rate for TVNL has been decided by the Hon'ble Commission as 3043 kCal/kWh for FY 2016-17.

It is therefore requested to the Hon'ble Commission to consider the same Station Heat Rate norm for this True - Up Petition for FY 2014-15 as decided by the Hon'ble Commission for TVNL in its Generation Tariff Regulations 2015.



The Station Heat Rate norms for TVNL for FY 17 to FY 21 as per JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015 has been presented below:

Tenughat Thermal Power Station (TVNL)

Parameters	2016-17	2017-18	2018-19	2019-20	2020-21
Normative Annual Plant Availability Factor (%)	85%	85%	85%	85%	85%
Normative Annual Plant Load Factor (%)	85%	85%	85%	85%	85%
Gross Station Heat Rate (kCal/kWh)	3043	2908	2773	2638	2503
Auxiliary Consumption (%)	9.50%	9.50%	9.50%	9.50%	9.50%

3.5.4 Thus, TVNL requests the Hon'ble Commission to approve the actual SHR of **2843** kcal/kWh for FY 2014-15.

3.6 Specific Oil Consumption

3.6.1 It is submitted that actual specific oil consumption for FY 2014-15 is **1.49** (ml/kWh).

3.6.2 Against the actual for FY 2014-15, the petitioner would like to mention that the Hon'ble Commission had approved figure of **1** ml/kWh for FY 2014-15 in the MYT order dated 30th May 2012 based on "Generation Tariff Regulations, 2010", where the normative specific oil consumption for TTPS has been specified as **1** ml/kWh.

3.6.3 The petitioner would also like to refer the review petition wherein it had requested for allowance of **2** ml/kWh as was provided in the "JSERC Thermal Generation Tariff Regulations 2004".

3.6.4 However, the Hon'ble Commission had rejected the plea on account of quality repair and maintenance works to be carried out by the petitioner and remedial measures to be taken by the petitioner.

3.6.5 The petitioner would like to submit that historically the actual specific oil consumption for TVNL has been in the range of **2.5-3.5** ml/kWh.



3.6.6 Further, TVNL has been carrying out quality repair and maintenance works and thus it has managed to achieve the specific oil consumption level at **1.49 ml/kWh** which is much below than its past trend of 2.5-3.5 ml/kWh.

3.6.7 The petitioner shall again like to submit that there is precedence of other similar aged and profile plants in other states having specific consumption of around **2.0 ml/kWh – 3.5 ml/kWh** and has been approved by the respective Hon'ble Commissions as shown in table below:

Table 4: Approved Specific Oil Consumption of Other Plants

Station	Cap (MW)	COD	State	Year	SOC (ml/kwh)
Gandhinagar(unit-5)	210	17-03-98	Gujarat	FY 2011-12 to FY 2015-16	3.50
Wanakbori 7 TPS	210	31-12-98	Gujarat	FY 2011-12 to FY 2015-16	3.50
Kolaghat (Unit -5)	210	17.03.1991	W.B	FY 2010-11	2.05
Kolaghat (Unit -6)	210	16.01.1993	W.B	FY 2010-11	2.05
Mejia (Unit-1)	210	Mar-96	W.B	FY 2009-14	2.00
Mejia (Unit-2)	210	Mar-98	W.B	FY 2009-14	2.00

3.6.8 TVNL would further like to submit that is has been able to recover only half of the cost of secondary fuel oil due to this norm and hence it requests relaxation to at least **2.0 ml/kWh** i.e. in line with earlier 2004 regulations and precedence for similar profile power plants in the country.

3.6.9 Therefore, Petitioner would like to request the Hon'ble Commission to kindly consider the facts mentioned above and thus allow the relaxation in secondary fuel oil consumption norms for the Petitioner and requests the Hon'ble Commission to approve specific oil consumption at **1.49 ml/kWh**.

3.7 Gross Calorific Value (GCV) Of Primary and Secondary Fuel

3.7.1 TVNL requests the Hon'ble Commission to approve the GCV of Primary Fuel at **3602 kcal/kg** and GCV of Secondary Fuel at **9359 (kcal/L)** respectively. The GCV of Secondary Fuel Oil is in line with the approved figures for FY 2014-15 in the MYT order dated 30th May 2012

3.8 Price of Primary Fuel

3.8.1 TVNL requests the Hon'ble Commission to approve the delivered coal price as INR 2020/MT for FY 2014-15.



3.9 Summary

3.9.1 The table below summarizes the results of True up of plant parameters and fuel cost determinants for the two Units of Tenughat Thermal Power Station for FY 2014-15.

Table 5: Plant parameters & Fuel Cost Determinants for FY 2014-15

Parameters	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2014-15
Capacity in MW	420	420	420
Plant Availability Factor (%)	85%	85%	79.91
PLF (Overall in %) Unit-I & Unit-II	77%	85%	64.70
Gross Generation (Mus) - Unit-I & Unit-II*	2833	3,127	2,380.46
Auxiliary Consumption (%)	9.50%	9.50%	11.34%
Net Generation (Mus) -Overall	2564	2,830	2,110.42
Station Heat Rate (kCal/kWh)	2900	2638	2843
Gross Calorific Value of Coal (Kcal/Kg)	4000	4,368.44	3602
Transit Loss (%)	0.30%	0.20%	0.20%
Total Coal Consumption (MT)	2040668	1881624	1869968
Cost of Coal (Rs/MT)	1801	1660	2020
Total Cost of Coal (Rs Cr)	367.52	312.26	377.73
Energy Charges (Rs/kwh)	1.43	1.10	1.79

3.9.2 The Hon'ble Commission is requested to approve the Energy Charge rate based on actual basis for FY 2014-15.

3.10 Operation & Maintenance (O&M) Expenses

3.10.1 It is submitted that the actual Operation & maintenance expenses for FY 2014-15 are INR **118.69 Cr**. The same may be verified from Internal Audited Annual Accounts for FY 2014-15.

3.10.2 In the previous MYT tariff order (FY 2012-13 to FY 2015-16) the Hon'ble Commission had approved **INR 166.49** as O&M expenses for the petitioner for FY 2014-15.

3.10.3 Operation & Maintenance (O&M) Expenses comprise of A&G Expenses, R&M Expenses and Employee Expenses, the details have been shown in the below table.

Table 6: O&M Expenses (INR Crs)

O&M Expenses	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2014-15
A&G Expenses	22.69	22.29	14.71
R&M Expenses	98.19	107.90	53.39
Employee Expenses	43.51	36.30	50.59
Total	164.39	166.49	118.69



3.10.4 It is requested to Hon'ble Commission to approve the O&M expenses for FY 2014-15 based on the actual at INR **118.69 Crs** for truing up purpose.

3.11 Depreciation

3.11.1 The depreciation for FY 2014-15 has been computed based on the asset classification, cost of acquisition and additional capitalization of assets during FY 2014-15.

3.11.2 The petitioner has followed "Generation Tariff Regulations, 2010" for the calculation of depreciation expense which has following methodology -

"a) Depreciation shall be allowed maximum upto 90% of the capital cost of the asset and the salvage value of the asset shall be considered as 10%

b) Depreciation shall be calculated annually as per the straight line method and at the rates specified in the Appendix-I of the said Regulations.

c) In case of existing projects, during the transition period the balance depreciable value as on 01.04.2011 shall be worked out by deducting the cumulative depreciation including AAD as admitted by the Commission upto 31.03.2011 from the gross depreciable value of the assets.

d) The rate of depreciation shall be continued to be charged at the rate specified in Annexure-I till the cumulative depreciation reaches 70%. Thereafter the remaining depreciable value shall be spread over the remaining life of the asset such that the maximum depreciation does not exceed 90%."

3.11.3 It is submitted that the actual Depreciation for FY 2014-15 computes at INR **75.23 Cr.** In the previous MYT tariff order the Hon'ble Commission had followed Generation Tariff Regulations, 2010 to approve Depreciation expenses of INR **70.92 Crs** for FY 2014-15.

Table 7: Depreciation (INR Crs)

Depreciation	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY2014-15
Depreciation for Plant	78.49	68.53	69.28
Depreciation for HO	0.11	0.12	0.18



Depreciation	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY2014-15
Depreciation for Additional Assets during the year	1.59	2.27	5.77
Total Depreciation	80.19	70.92	75.23

3.11.4 Accordingly, TVNL requests the Hon'ble Commission to approve the depreciation at INR **75.23** Crs for FY 2014-15.

3.12 Interest on Loan

3.12.1 As per the "Generation Tariff Regulations, 2010" it follows:

"7.20 The normative loan outstanding as on 1.4.2011 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2011 from the gross normative loan for the Transition period.

During Control Period, the normative loan outstanding as on 1.4.2012 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2012 from the gross normative loan

7.21 The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year."

3.12.2 In the previous MYT tariff order the Hon'ble Commission had followed Generation Tariff Regulations, 2010 to approve Interest on Loan of INR **49.93** Crs. for FY 2014-15.

3.12.3 It is submitted that the interest and finance charges for FY 2014-15 as per Internal Audited Annual Accounts are INR **103.06** Crs.

Table 8: Interest on Loan (INR Crs) for FY 2014-15

Interest and Finance charges	INR Crs
Interest on State Government Loan (Jharkhand)	8.68
Interest on State Government Loan (Bihar)	94.38
Bank Charges	0.00
Total	103.06

3.12.4 The Petitioner would like to submit to the Hon'ble Commission that it is difficult for TVNL to service its debt timely due to delayed and partial payments being made by JSEB / JBVNL. As at 31st March 2017, JSEB / JBVNL owes TVNL cumulative dues of



Rupees Three Thousand Two Hundred Fifty Two Crores and Ninety Five Paise i.e. INR 3252.95 Cr. Due to the late payment of dues by JSEB / JBVNL to TVNL, debt could not be serviced timely in the past and hence in FY 2014-15 TVNL had to pay penalties along with the Interest on Loan which amounted to Rupees One Hundred Three Crores and Six Paise i.e. INR 103.06 Crores. Additionally, TVNL requests the Hon'ble Commission to allow its Non – Tariff Income (i.e. accrued bank interests) in their Revenue Requirement.

3.12.5 Therefore, TVNL requests the Hon'ble Commission to approve the actual interest on loan of INR **103.06** Crores for FY 2014-15.

3.13 Interest on Working Capital (IWC)

3.13.1 "Generation Tariff Regulations, 2010" specify the following norms for calculation of interest on working capital:

i) Cost of Coal for 1.5 months for pithead generating stations and for 2 months in non-pithead generating stations for generation corresponding to the Normative Annual Plant Availability Factor;

ii) Cost of secondary fuel oil for two months for generation corresponding to the Normative Annual Plant Availability Factor, and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;

iii) Maintenance spares @ 20% operation and maintenance expenses

iv) Operation and maintenance expenses for 1 month

v) Receivables equivalent to 2 months of capacity and energy charges from sale of electricity calculated on the NAPAF."

3.13.2 In the previous MYT tariff order the Hon'ble Commission had followed Generation Tariff Regulations, 2010 to approve Interest on Working Capital at **INR 29.80 Cr**, however the actual Interest on Working Capital computes at **INR 30.92 Crs** for FY 2014-15.

Table 9: Interest on Working Capital (INR Crs)

Particulars	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2014-15
Cost of Coal for 1.5 months	46.09	39.04	47.22
Cost of Secondary Fuel Oil for 2 months	6.12	3.12	3.37
O&M expenses for 1 month	13.70	13.88	9.89



Particulars	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2014-15
Maintenance spares @ 20% of O&M Expenses	32.88	33.3	23.74
Receivables-2 months	128.71	112.67	125.39
Total Working Capital	227.50	202.01	209.61
Rate of Interest	13.25%	14.75%	14.75%
Interest on Working Capital	30.14	29.80	30.92

3.14 Return on Equity (RoE)

3.14.1 As per "Generation Tariff Regulations, 2010" the return on equity shall be calculated on pre-tax basis at the base rate of 15.50% to be grossed up with the normal tax rate applicable to the generating company.

Since there is no income tax envisaged to be paid by the Petitioner during the Control Period, the Post Tax Rate of Equity has been considered.

3.14.2 In the previous MYT tariff order the Hon'ble Commission had followed Generation Tariff Regulations, 2010 to approve Return on equity of INR **27.86** Crs for FY 2014-15.

3.14.3 It is submitted that Return on equity computes at INR **26.54** Cr for FY 2014-15 as shown in the table below:

Table 10: Return on Equity (INR Crs)

Return on Equity	Unit	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2014-15
Equity (Opening Balance)	Rs Cr	229.76	177.84	169.72
Net additions during the year	Rs Cr	22.32	3.74	2.98
Equity (Closing Balance)	Rs Cr	252.08	181.58	172.70
Average Equity	Rs Cr	240.92	179.71	171.21
Rate of Return on Equity	%	15.50%	15.50%	15.50%
Return on Equity	Rs Cr	37.34	27.86	26.54

3.14.4 Hence, TVNL requests the Hon'ble Commission to approve the same.

3.15 Non - tariff Income

3.15.1 The actual Non - Tariff Income for FY 2014-15 is INR **36.58** Crs, TVNL requests the Hon'ble Commission to approve the same.



3.16 Cost of secondary fuel oil

3.16.1 The computation of cost of secondary fuel oil is presented in the table below:

Table 11: Secondary Fuel Oil Cost (INR Crs)

Secondary Fuel Oil Consumption	Unit	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2014-15
Normative Gross Generation	MU	2833	3127	2,380
Specific Oil Consumption (ml/kWh)	ml/kWh	2.00	1.00	1.49
Gross Calorific Value of Oil	Kcal/L	9359	9359	9359
Cost of Oil	Rs/KL	59000	60000	57006
Oil Consumption	KL	5666	3127	3546.20
Total Cost of Oil	Rs Cr	36.70	18.71	20.22

3.16.2 The Hon'ble Commission is requested to approve the secondary fuel oil on actual basis at **INR 20.22 Crs.**

3.17 Summary of fixed Costs

3.17.1 In the previous MYT tariff order the Hon'ble Commission had followed Generation Tariff Regulations, 2010 to approve total fixed costs at **INR 363.72 Cr** for FY 2014-15.

3.17.2 It is submitted that total fixed costs compute at **INR 374.64 Cr** for FY 2014-15 as shown in the table below:

Table 12 : Fixed Cost for TVNL for FY 2014-15 (In INR Crs.)

Parameters	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2014-15
O&M Expenses	164.39	166.49	118.69
Depreciation	80.19	70.92	75.23
Interest on Loan	65.00	49.93	103.06
Return on Equity	37.34	27.86	26.54
Interest on Working Capital	30.14	29.80	30.92
Cost of Secondary fuel oil	36.70	18.71	20.22
Total Fixed Cost	414.70	363.72	374.64

3.17.3 The Hon'ble Commission is requested to kindly approve the total fixed cost of **INR 374.64 Cr** for FY 2014-15 for truing up purpose.



3.18 Revenue Gap / Surplus

3.18.1 In terms of overall costs; the fixed and variable charges works out as under:

Table 13 : Revenue Gap for FY 2014-15 (INR Crore)

Parameters	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2014-15
O&M Expenses	164.39	166.49	118.69
Depreciation	80.19	70.92	75.23
Interest on Loan	65.00	49.93	103.06
Return on Equity	37.34	27.86	26.54
Interest on Working Capital	30.14	29.80	30.92
Cost of Secondary fuel oil	36.70	18.71	20.22
Total Fixed Cost	414.70	363.72	374.64
Energy Cost	367.52	312.26	377.73
Total Expenses	782.23	675.98	752.37
Less: NTI	10.05	16.91	36.58
Net Total Expenses	772.18	659.07	715.79
Revenue at Existing Tariff			741.38
(Gap)/Surplus for the year			25.59
Surplus Carried Forward			25.59

3.18.2 The regulatory provisions for Carrying Cost / Holding Cost provided in the Generation Tariff Regulations 2010 are extracted for reference as under:

“6.16 If the Tariff already recovered is more than the Tariff determined after true up, 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 as on 1st April of the respective Year.

6.17 Similarly, in case the Tariff already recovered is less than the Tariff determined after true up, the Generating Company shall recover from the Beneficiaries, the less recovered amount along with simple interest at the rate equal to short term prime lending rate of State Bank of India as on 1st April of the respective Year/Years subject to adhering to the timelines specified by the Commission for filling of True-up application. In case, it is found that the filling of True-up is delayed due to the reasons attributable to the Generating Company, the under recovery shall not bear any interest expenses.

6.18 The amount under-recovered or over-recovered, along with simple interest, 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.”

3.18.3 The table below provides the computation of Holding Cost and the resultant final true-up Surplus for FY 2014-15.

**Table 14 : Revenue Surplus with Holding Cost for FY 2014-15**

S. No.	Revenue Surplus / (Gap)	FY 2014-15
		As per Annual Accounts (Rs. Cr.)
1	Opening Revenue Surplus / (Gap)	-
2	Revenue Surplus / (Gap) for the Year	25.59
3	Total Revenue Surplus / (Gap)	25.59
4	Rate of Interest	14.75%
5	Holding Cost on Opening Revenue Surplus	-
6	Holding Cost on Revenue Surplus for the year	1.89
7	Total Holding Cost in Revenue Surplus	1.89
8	Total Revenue Surplus (3+7)	27.48

3.18.4 The Hon'ble Commission is requested to approve the Revenue Surplus / (Gap) along with the Holding cost for FY 2014-15.



4 TRUE UP OF FY 2015-16

For the purpose of True Up, TVNL has compared the actual cost for FY 2015-16 with the cost approved by the Hon'ble Commission in MYT Tariff Order dated May, 2012 in which Hon'ble Commission has determined ARR for FY 2015-16. The various parameters for the process of True-up have been discussed below:

4.1 Plant Load Factor and Plant Availability Factor

4.1.1 It is submitted that for FY 2015-16 the actual PLF was **71.46%** and the actual PAF (Running Hour based) was **87.34%**. The same may be verified from system reports generated on daily basis which are then compiled for generating monthly data.

4.1.2 Against the actual PLF and PAF for FY 2015-16 as mentioned above, the petitioner would like to mention that the Hon'ble Commission had approved figures of **85%** and **85%** for PLF & PAF for FY 2015-16 in the MYT order dated 30th May 2012.

4.1.3 TVNL submits that it has achieved higher availability factor than the approved figure of 85% and also the Plant Load Factor (PLF) has been better than the previous year.

4.1.4 The petitioner submits that considering above factor, the Normative Plant Availability Factor based on Declared Capacity works out to **87.36%**. Thus, TVNL requests the Hon'ble Commission to approve PAF at **87.36%** for FY 2015-16 on normative basis for the purpose of true-up.

4.2 Gross generation

4.2.1 It is submitted that actual gross generation for TVNL is at **2,636.31** MUs for FY 2015-16. Against the actual for FY 2015-16, the petitioner would like to mention that the Hon'ble Commission had approved figure of **3,136 MUs** for FY 2015-16 in the MYT order dated 30th May 2012.

4.2.2 The difference in approved and actual figures is on account of actual PLF (**71.46%**) and approved PLF (**85%**) for FY 2015-16.

4.2.3 Thus, TVNL requests the Hon'ble Commission to approve the gross generation of **2,636.31** MUs for FY 2015-16 based on the **actual PLF** for FY 2015-16.



4.3 Auxiliary Consumption

4.3.1 TVNL requests the Hon'ble Commission to approve the auxiliary consumption at **11.68%** for FY 2015-16 as against **9.50%** approved by the Hon'ble Commission in the MYT order dated 30th May 2012.

4.4 Net Generation

4.4.1 It is submitted that actual net generation for TVNL is at **2,328.28** MUs for FY 2015-16. Against the actual for FY 2015-16, the petitioner would like to mention that the Hon'ble Commission had approved figures of **2,838 MUs** for FY 2015-16 in the MYT order dated 30th May 2012.

4.4.2 A difference in approved and actual figures is on account of actual (**11.68%**) and approved auxiliary consumption (**9.5%**) for FY 2015-16 along with Actual PLF (71.46%) and approved PLF (**85%**).

4.4.3 Thus, TVNL requests the Hon'ble Commission to approve the net generation of **2,328.28** MUs for FY 2015-16 based on the actual values of PLF & auxiliary consumption for FY 2015-16.

4.5 Station Heat Rate

4.5.1 It is submitted that actual station heat rate for TVNL is at **2753** kcal/kWh for FY 2015-16. The petitioner would like to mention that the Hon'ble Commission had approved figure of **2503** kcal/kWh for FY 2015-16 in the MYT order dated 30th May 2012 as submitted by petitioner in MYT petition.

4.5.2 The petitioner would further like to submit that over the years it has taken a number of measures to improve its Station Heat Rate which is also evident from the table given below. The Station Heat Rate has been improved from 3031.71 kCal/kWh in FY 2011-12 to 2753 kCal/kWh in FY 2015-16.

Year	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Station Heat Rate (Kcal/kWh)	3031.71	2939.68	2778.07	2843	2753

4.5.3 Also, the petitioner would like to submit that according to the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015 published on 20th January 2016, under the Norms of Operation for the 2nd Control Period (FY 17 to



FY 21), Station Heat Rate for TVNL has been decided by the Hon'ble Commission as 3043 kCal/kWh for FY 2016-17.

It is therefore requested to the Hon'ble Commission to consider the same Station Heat Rate norm for this True - Up Petition for FY 2015-16 as decided by the Hon'ble Commission for TVNL in its Generation Tariff Regulations 2015.

The Station Heat Rate norms for TVNL for FY 17 to FY 21 as per JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2015 has been presented below:

Tenughat Thermal Power Station (TVNL)

Parameters	2016-17	2017-18	2018-19	2019-20	2020-21
Normative Annual Plant Availability Factor (%)	85%	85%	85%	85%	85%
Normative Annual Plant Load Factor (%)	85%	85%	85%	85%	85%
Gross Station Heat Rate (kCal/kWh)	3043	2908	2773	2638	2503
Auxiliary Consumption (%)	9.50%	9.50%	9.50%	9.50%	9.50%

4.5.4 Thus, TVNL requests the Hon'ble Commission to approve the actual SHR of **2753** kcal/kWh for FY 2015-16.

4.6 Specific Oil Consumption

4.6.1 It is submitted that actual specific oil consumption for FY 2015-16 is **1.15** (ml/kWh).

4.6.2 Against the actual for FY 2015-16, the petitioner would like to mention that the Hon'ble Commission had approved figure of **1** ml/kWh for FY 2015-16 in the MYT order dated 30th May 2012 based on "Generation Tariff Regulations, 2010", where the normative specific oil consumption for TTPS has been specified as **1** ml/kWh.

4.6.3 The petitioner would also like to refer the review petition wherein it had requested for allowance of **2** ml/kWh as was provided in the "JSERC Thermal Generation Tariff Regulations 2004".

4.6.4 However, the Hon'ble Commission had rejected the plea on account of quality repair and maintenance works to be carried out by the petitioner and remedial measures to be taken by the petitioner.



- 4.6.5 The petitioner would like to submit that historically the actual specific oil consumption for TVNL has been in the range of **2.5-3.5** ml/kWh.
- 4.6.6 Further, TVNL has been carrying out quality repair and maintenance works and thus it has managed to achieve the specific oil consumption level at **1.15** ml/kWh which is much below than its past trend of 2.5-3.5 ml/kWh.
- 4.6.7 The petitioner shall again like to submit that there is precedence of other similar aged and profile plants in other states having specific consumption of around **2.0 ml/kWh – 3.5 ml/kWh** and has been approved by the respective Hon'ble Commissions as shown in table below:

Table 15: Approved Specific Oil Consumption of Other Plants

Station	Cap (MW)	COD	State	Year	SOC (ml/kwh)
Gandhinagar(unit-5)	210	17-03-98	Gujarat	FY 2011-12 to FY 2015-16	3.50
Wanakbori 7 TPS	210	31-12-98	Gujarat	FY 2011-12 to FY 2015-16	3.50
Kolaghat (Unit -5)	210	17.03.1991	W.B	FY 2010-11	2.05
Kolaghat (Unit -6)	210	16.01.1993	W.B	FY 2010-11	2.05
Mejia (Unit-1)	210	Mar-96	W.B	FY 2009-14	2.00
Mejia (Unit-2)	210	Mar-98	W.B	FY 2009-14	2.00

- 4.6.8 Therefore, Petitioner would like to request the Hon'ble Commission to kindly consider the facts mentioned above and thus allow the relaxation in secondary fuel oil consumption norms for the Petitioner and requests the Hon'ble Commission to approve specific oil consumption at **1.15** ml/kWh.

4.7 Gross Calorific Value (GCV) Of Primary and Secondary Fuel

- 4.7.1 TVNL requests the Hon'ble Commission to approve the GCV of Primary Fuel at **3602** kcal/kg and GCV of Secondary Fuel at **9359** (kcal/L) respectively. The GCV of Secondary Fuel Oil is in line with the approved figures for FY 2015-16 in the MYT order dated 30th May 2012.

4.8 Price of Primary Fuel

- 4.8.1 TVNL requests the Hon'ble Commission to approve the delivered coal price as INR 2619/MT for FY 2015-16.



4.9 Summary

4.9.1 The table below summarizes the results of True up of plant parameters and fuel cost determinants for the two Units of Tenughat Thermal Power Station for FY 2015-16.

Table 16 : Plant parameters & Fuel Cost Determinants for FY 2015-16

Parameters	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2015-16
Capacity in MW	420	420	420
Plant Availability Factor (%)	85%	85%	87.36%
PLF (Overall in %) Unit-I & Unit-II	78%	85%	71.46%
Gross Generation (Mus) - Unit-I & Unit-II*	2878	3,136	2,636.31
Auxiliary Consumption (%)	9.50%	9.50%	11.68%
Net Generation (Mus) -Overall	2604	2838	2,328.28
Station Heat Rate (kCal/kWh)	2850	2503	2753
Gross Calorific Value of Coal (Kcal/Kg)	4000	4,368.44	3602
Transit Loss (%)	0.30%	0.20%	0.20%
Total Coal Consumption (MT)	2037107	1790126	1995494.61
Cost of Coal (Rs/MT)	1904	1659.53	2619
Total Cost of Coal (Rs Cr)	387.87	297.08	522.58
Energy Charges (Rs/kwh)	1.49	1.047	2.24

4.9.2 The Hon'ble Commission is requested to approve the Energy Charge rate based on actual basis for FY 2015-16.

4.10 Operation & Maintenance (O&M) Expenses

4.10.1 It is submitted that the actual Operation & maintenance expenses for FY 2015-16 are **INR 156.03 Cr.** The same may be verified from Internal Audited Annual Accounts for FY 2015-16.

4.10.2 In the previous MYT tariff order (FY 2012-13 to FY 2015-16) the Hon'ble Commission had approved **INR 180.11 Crs.** as O&M expenses for the petitioner for FY 2015-16.

4.10.3 Operation & Maintenance (O&M) Expenses comprise of A&G Expenses, R&M Expenses and Employee Expenses, the details have been shown in the below table.

Table 17: O&M Expenses (INR Crs)

O&M Expenses	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2015-16
A&G Expenses	24.32	24.17	13.84
R&M Expenses	107.67	116.97	79.85



O&M Expenses	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2015-16
Employee Expenses	47.16	38.97	62.34
Total	179.16	180.11	156.03

4.10.4 It is requested to Hon'ble Commission to approve the O&M expenses for FY 2015-16 based on the actual at INR **156.03 Crs** for truing up purpose.

4.11 Depreciation

4.11.1 The depreciation for FY 2015-16 has been computed based on the asset classification, cost of acquisition and additional capitalization of assets during FY 2015-16.

4.11.2 The petitioner has followed "Generation Tariff Regulations, 2010" for the calculation of depreciation expense which has following methodology -

"a) Depreciation shall be allowed maximum upto 90% of the capital cost of the asset and the salvage value of the asset shall be considered as 10%

b) Depreciation shall be calculated annually as per the straight line method and at the rates specified in the Appendix-I of the said Regulations.

c) In case of existing projects, during the transition period the balance depreciable value as on 01.04.2011 shall be worked out by deducting the cumulative depreciation including AAD as admitted by the Commission upto 31.03.2011 from the gross depreciable value of the assets.

d) The rate of depreciation shall be continued to be charged at the rate specified in Annexure-I till the cumulative depreciation reaches 70%. Thereafter the remaining depreciable value shall be spread over the remaining life of the asset such that the maximum depreciation does not exceed 90%."

4.11.3 It is submitted that the actual Depreciation for FY 2015-16 computes at INR **71.46 Cr.** In the previous MYT tariff order the Hon'ble Commission had followed Generation Tariff Regulations, 2010 to approve Depreciation expenses of INR **71.52 Crs** for FY 2015-16.

**Table 18: Depreciation (INR Crs)**

Depreciation	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2015-16
Depreciation for Plant	81.35	68.53	71.26
Depreciation for HO	0.45	0.12	0.20
Depreciation for Additional Assets during the year	1.20	2.87	0.00
Total Depreciation	82.99	71.52	71.46

4.11.4 Accordingly, TVNL requests the Hon'ble Commission to approve the depreciation at INR **71.46** Crs for FY 2015-16.

4.12 Interest on Loan

4.12.1 As per the "Generation Tariff Regulations, 2010" it follows:

"7.20 The normative loan outstanding as on 1.4.2011 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2011 from the gross normative loan for the Transition period.

During Control Period, the normative loan outstanding as on 1.4.2012 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2012 from the gross normative loan

7.21 The repayment for any year during the Tariff Period shall be deemed to be equal to the depreciation allowed for that Year."

4.12.2 In the previous MYT tariff order the Hon'ble Commission had followed Generation Tariff Regulations, 2010 to approve Interest on Loan of **INR 41.71 Crs.** for FY 2015-16.

4.12.3 It is submitted that the interest and finance charges for FY 2015-16 as per Internal Audited Annual Accounts are **INR 103.13 Crs.**

Table 19: Interest on Loan (INR Crs)

Interest and Finance charges	INR Crs
Interest on State Government Loan (Jharkhand)	8.75
Interest on State Government Loan (Bihar)	94.38
Bank Charges	0.01
Total	103.13

4.12.4 The Petitioner would like to submit to the Hon'ble Commission that it is difficult for TVNL to service its debt timely due to delayed and partial payments being made by



JSEB / JBVNL. As at 31st March 2017, JSEB / JBVNL owes TVNL cumulative dues of Rupees Three Thousand Two Hundred Fifty Two Crores and Ninety Five Paise i.e. INR 3252.95 Cr. Due to the late payment of dues by JSEB /JBVNL to TVNL, debt could not be serviced timely in the past and hence in FY 2015-16 also TVNL had to pay penalties along with the Interest on Loan which amounted to Rupees One Hundred Three Crores and Six Paise i.e. INR 103.13 Crores. Additionally, TVNL requests the Hon'ble Commission to allow the Non – Tariff Income of TVNL (i.e. accrued bank interests) in their Revenue Requirement.

4.12.5 Accordingly, TVNL requests the Hon'ble Commission to approve the interest on loan of INR **103.13** Crores for FY 2015-16.

4.13 Interest on Working Capital (IWC)

4.13.1 "Generation Tariff Regulations, 2010" specify the following norms for calculation of interest on working capital:

- "i) Cost of Coal for 1.5 months for pithead generating stations and for 2 months in non-pithead generating stations for generation corresponding to the Normative Annual Plant Availability Factor;*
- ii) Cost of secondary fuel oil for two months for generation corresponding to the Normative Annual Plant Availability Factor, and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;*
- iii) Maintenance spares @ 20% operation and maintenance expenses*
- iv) Operation and maintenance expenses for 1 month*
- v) Receivables equivalent to 2 months of capacity and energy charges from sale of electricity calculated on the NAPAF."*

4.13.2 In the previous MYT tariff order the Hon'ble Commission had followed Generation Tariff Regulations, 2010 to approve Interest on Working Capital at **INR 29.87 Cr**, however the actual Interest on Working Capital computes at **INR 39.74 Crs** for FY 2015-16.

Table 20: Interest on Working Capital (INR Crs) for FY 2015-16

Particulars	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2015-16
Cost of Coal for 1.5 months	48.63	37.13	65.32
Cost of Secondary Fuel Oil for 2 months	6.48	3.13	2.47



Particulars	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2015-16
O&M expenses for 1 month	14.93	15.01	13.00
Maintenance spares @ 20% of O&M Expenses	35.83	36.02	31.21
Receivables-2 months	135.10	111.24	157.40
Total Working Capital	240.98	202.53	269.40
Rate of Interest	13.25%	14.75%	14.75%
Interest on Working Capital	31.93	29.87	39.74

4.14 Return on Equity (RoE)

4.14.1 As per "Generation Tariff Regulations, 2010" the return on equity shall be calculated on pre-tax basis at the base rate of 15.50% to be grossed up the with the normal tax rate applicable to the generating company.

4.14.2 In the previous MYT tariff order the Hon'ble Commission had followed Generation Tariff Regulations, 2010 to approve Return on equity of INR **28.38** Crs for FY 2015-16.

4.14.3 It is submitted that Return on equity computes at INR **36.63** Cr for FY 2015-16 as shown in the table below:

Table 21: Return on Equity (INR Crs)

Return on Equity	Unit	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2015-16
Equity (Opening Balance)	Rs Cr	252.08	181.58	170.61
Net additions during the year	Rs Cr	15.24	3.06	131.40
Equity (Closing Balance)	Rs Cr	267.32	184.64	302.01
Average Equity	Rs Cr	259.70	183.11	236.31
Rate of Return on Equity	%	15.50%	15.50%	15.50%
Return on Equity	Rs Cr	40.25	28.38	36.63

4.14.4 The Petitioner here would like to submit that the Equity Component of the Asset Capitalized (INR 131.40 Cr.) for FY 16 has been considered as 100% as the same has been completely funded by the cash generated from the core business which is a deviation from the JSERC Generation Tariff Regulations, 2015 and requests the Hon'ble Commission to approve the same.



4.14.5 The Petitioner would further like to submit to the Hon'ble Commission that currently the Shareholder Capital (Equity) of the Petitioner is only INR 105 Cr. whereas as per the Regulation 7 of the JSERC Generation Tariff Regulations, 2015, the Opening Equity for FY 2016-17 should be around INR 475 Cr. (30% of Capitalized Assets of INR 1,588.50 Cr.) which results in huge loss to the utility on account of non-approval of Return on Equity for the difference amount. Thus, in view of the same, the Petitioner requests the Hon'ble Commission to allow 100% equity on the Capitalized Assets for FY 2015-16. Even after considering the 100% equity, the overall opening equity component for FY 2016-17 would become INR 302.02 Cr. which would still be 19% of the total capitalized assets (Less than 30%).

4.14.6 Hence, TVNL requests the Hon'ble Commission to approve the same.

4.15 Non - tariff Income

4.15.1 The actual Non - Tariff Income for FY 2015-16 is **INR 34.29 Crs**, TVNL requests the Hon'ble Commission to approve the same.

4.16 Cost of secondary fuel oil

4.16.1 The computation of cost of secondary fuel oil is presented in the table below:

Table 22: Secondary Fuel Oil Cost (INR Crs)

Secondary Fuel Oil Consumption	Unit	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2015-16
Normative Gross Generation	MU	2878	3136	2,636.31
Specific Oil Consumption (ml/kWh)	ml/Kwh	2.00	1.00	1.15
Gross Calorific Value of Oil	Kcal/L	9359	9359	9359
Cost of Oil	Rs/KL	62000	60000	48771
Oil Consumption	KL	5756	3136	3039
Total Cost of Oil	INR Cr	38.91	18.76	14.82

4.16.2 The Hon'ble Commission is requested to approve the secondary fuel oil on actual basis at **INR 14.82 Crs**.

4.17 Summary of fixed Costs

4.17.1 In the previous MYT tariff order the Hon'ble Commission had followed Generation Tariff Regulations, 2010 to approve total fixed costs at **INR 370.36 Crs** for FY 2015-16.



4.17.2 It is submitted that total fixed costs compute at **INR 411.81 Crs** for FY 2015-16 as shown in the table below:

Table 23: Fixed Cost for TVNL for FY 2015-16 (In INR Crs.)

Parameters	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2015-16
O&M Expenses	179.16	180.11	156.03
Depreciation	82.99	71.52	71.46
Interest on Loan	58.52	41.71	103.13
Return on Equity	40.25	28.38	36.63
Interest on Working Capital	31.93	29.87	39.74
Cost of Secondary fuel oil	38.91	18.76	14.82
Total Fixed Cost	431.77	370.36	421.81

4.17.3 The Hon'ble Commission is requested to kindly approve the total fixed cost of **INR 421.81 Cr** for FY 2015-16 for truing up purpose.

4.18 Revenue Gap / Surplus

4.18.1 In terms of overall costs; the fixed cost and variable cost works out as under:

Table 24: Revenue Gap for FY 2015-16 (INR Crore)

Parameters	Submitted by the Petitioner in the MYT Tariff Petition	Approved in the MYT Tariff Order	Actual as per Annual Accounts of FY 2015-16
O&M Expenses	179.16	180.11	156.03
Depreciation	82.99	71.52	71.46
Interest on Loan	58.52	41.71	103.13
Return on Equity	40.25	28.38	36.63
Interest on Working Capital	31.93	29.87	39.74
Cost of Secondary fuel oil	38.91	18.76	14.82
Total Fixed Cost	431.77	370.36	421.81
Energy Cost	387.87	297.08	522.58
Total Expenses	819.63	667.44	944.39
Less: NTI	10.05	16.91	34.29
Net Total Expenses	809.58	650.53	910.10
Revenue at Existing Tariff			815.03
(Gap)/Surplus for the year			(95.08)
Gap Carried Forward			(95.08)

4.18.2 The regulatory provisions for Carrying Cost provided in the Generation Tariff Regulations 2010 are extracted for reference as under:



“6.16 If the Tariff already recovered is more than the Tariff determined after true up, 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 as on 1st April of the respective Year.

6.17 Similarly, in case the Tariff already recovered is less than the Tariff determined after true up, the Generating Company shall recover from the Beneficiaries, the less recovered amount along with simple interest at the rate equal to short term prime lending rate of State Bank of India as on 1st April of the respective Year/Years subject to adhering to the timelines specified by the Commission for filling of True-up application. In case, it is found that the filling of True-up is delayed due to the reasons attributable to the Generating Company, the under recovery shall not bear any interest expenses.

6.18 The amount under-recovered or over-recovered, along with simple interest, 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 true up exercise.”

4.18.3 The table below provides the computation of carrying cost and the resultant final true-up gap for FY 2015-16.

Table 25: Revenue Gap with Carrying Cost for FY 2015-16

S. No.	Revenue Gap	FY 2015-16
		As per Accounts (Rs. Cr.)
1	Opening Revenue Surplus / (Gap)	27.48
2	Revenue Surplus / (Gap) for the Year	(95.08)
3	Total Revenue Surplus / (Gap)	(67.60)
4	Rate of Interest	14.75%
5	Holding Cost on Opening Revenue Surplus	4.05
6	Carrying Cost on Revenue Gap for the year	(7.01)
7	Total Carrying Cost in Revenue Gap	(2.96)
8	Total Revenue Gap (3+7)	(70.56)

4.18.4 The Hon’ble Commission is requested to approve the Revenue gap along with the Carrying cost for FY 2015-16.



5 Review of FY 2016-17

5.1 Review of Operational Performance of FY 2016-17

5.1.1 TVNL hereby submits the operational parameters for the first year of the Second Control Period i.e. FY 2016-17 based on the actual generation and plant parameters for April 2016 to March 2017 as per the Terms and Conditions for (Determination of Generation Tariff) Regulations, 2010 issued by the Hon'ble Jharkhand State Electricity Regulatory Commission (JSERC).

5.1.2 For the purpose of Review, TVNL has showed the operational performance for FY 2016-17 with the parameters and cost submitted by the Petitioner in its MYT Tariff Petition for the Second Control Period FY 2016-17 to FY 2020-21.

5.1.3 The Petitioner in FY 2016-17 has following plant parameters and fuel Cost:

Table 26: Plant parameters & Fuel Cost Determinants for FY 2016-17

Parameters	Actual as per Annual Accounts of FY 2015-16	Submitted by the Petitioner in the MYT Tariff Petition for FY 2016-17	FY 2016-17 Actuals
Capacity in MW	420.00	420.00	420
Plant Availability Factor (%)	87.4%	85%	48.38
PLF (Overall in %) Unit-I & Unit-II	71.46%	85%	38.62
Gross Generation (Mus) - Unit-I & Unit-II*	2636.31	3127.00	1421.02
Auxiliary Consumption (%)	11.68%	9.50%	13.67%
Net Generation (Mus) -Overall	2328.28	2830.00	1419.07
Station Heat Rate (kCal/kWh)	2753.24	3043.00	2795.41
Gross Calorific Value of Coal (Kcal/Kg)	3601.78	3615.25	3642.95
Transit Loss (%)	0.20%	0.20%	0.2%
Total Coal Consumption (MT)	1995494.61	2629469.00	1075059.13
Cost of Coal (Rs/MT)	2491.60	2458.11	2542.81
Total Cost of Coal (Rs Cr)	497.20	646.35	273.37
Energy Charges (Rs/kwh)	2.14	2.28	1.93

5.1.4 The Petitioner would like to submit to the Hon'ble Commission that in FY 2016-17 its Plant Availability Factor was 48.38% due to the following two reasons:

1) Capital Overhauling of Units -

In order to improve the plant performance, TVNL had carried out a planned capital overhauling of both its units.



The Capital Overhauling of Unit I was carried out from 15th July 2016 to 3rd November 2016 and for Unit II it was carried out from 3rd May 2016 to 25th June 2016.

2) Breakdown of Unit I Turbine -

On 7th November 2016 there was a breakdown in Unit I of TVNL as the turbine had got damaged due to grid failure. Hence, TVNL had to carry out repair works of the turbine which happened from 7th November 2016 to 6th June 2017.

5.1.5 The Hon'ble Commission is requested to consider the above reasons due to which its Plant Availability Factor in FY 2016-17 was 48.38%.

5.1.6 Additionally, the Petitioner would like to submit to the Hon'ble Commission its Secondary Fuel Oil Consumption details of FY 2016-17 as tabulated below:

Table 27: Cost of Secondary Fuel Oil

Secondary Fuel Oil Consumption	Unit	Actual as per Annual Accounts of FY 2015-16	Submitted by the Petitioner in the MYT Tariff Petition for FY 2016-17	FY 2016-17 Actuals
Normative Gross Generation	MU	2636.31	3127.00	1421.02
Specific Oil Consumption (ml/kWh)	ml/Kwh	1.15	1	4.21
Gross Calorific Value of Oil	Kcal/L	9359.00	9359	9359.00
Cost of Oil	Rs/KL	42896.74	36004.77	41428.36
Oil Consumption	KL	3039.10	3127	5977.25
Total Cost of Oil	Rs Cr	13.04	11.26	24.76

**Abbreviations**

APH	Air Pre-Heater
ARR	Aggregate Revenue Requirement
BFP	Boiler Feed Pump
CAGR	Compounded Annual Growth Rate
CCL	Central Coalfields Limited
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Corporation
Cr	Crores
Control Period	FY 2012-13, FY 2013-14, FY 2014-15, FY 2015-16
CW	Coolant Water
D/C	Direct Current
DPR	Detailed Project Report
DVC	Damodar Valley Corporation
FD	Forced Draught
FY	Financial Year
GoJ	Government of Jharkhand
ID	Induced Draught
JSEB	Jharkhand State Electricity Board
KV	Kilo Volt
KWh	Kilo Watt Hour
MGR	Merry Go Round
MOEF	Ministry of Environment and Forest
MUs	Million Units
MW	Mega Watt
MYT	Multi Year Tariff
O&M	Operation & Maintenance
PAT	Perform, Achieve and Trade



PAF	Plant Availability Factor
PPA	Power Purchase Agreement
PLF	Plant Load Factor
PLR	Prime Lending Rate
R E	Revised Estimates
R & M	Renovation & Modernisation/ Repair & Maintenance
ROE	Return on Equity
Rs	Indian National Rupees
S/S	Sub Station
SERC	State Electricity Regulatory Corporation
SHR	Station Heat Rate
TCS	Tata Consultancy Services
SAP	IT Company
TTPS	Tenughat Thermal Power Station
TVNL	Tenughat Vidyut Nigam Limited



6 PRAYER

TVNL respectfully prays to the Hon'ble Commission;

- i. To admit this True Up for FY 2014-15, FY 2015-16 and Review of Operational Parameters for FY 2016-17.
- ii. To approve the operational and financial parameters as proposed by TVNL considering the constraints of the old machines, and consider the same for recovery of full fixed cost.
- iii. To approve the Station's operating parameters viz. PAF, Auxiliary Consumption, Station Heat Rate, Transit Loss, Specific Oil Consumption and actual fuel rate for recovery of variable cost considering the constraints of the old machines as well as site specific constraints.
- iv. To grant any other relief as the Hon'ble Commission may consider appropriate.
- v. The Petitioner craves leave of the Hon'ble Commission to allow further submissions, addition and alteration to this Petition as may be necessary from time to time.
- vi. Pass any other order as the Hon'ble Commission may deem fit and appropriate under the circumstances of the case and in the interest of justice.

Declaration that the subject matter of the petition has not been raised by the petitioner before any other competent forum, and that no other competent forum is currently seized of the matter or has passed any orders in relation thereto.



Picture 1: Tenughat Vidyut Nigam Limited (TVNL) 2*210 MW Power Plant

.....*Powering Jharkhand*



FILING OF PETITION FOR TRUE UP OF FY 2014-15 & FY 2015-16

And

REVIEW OF FY 2016-17 OPERATIONAL PARAMETERS

Annexure A: Annual Accounts of FY 2014-15 Audited by Internal Auditor of TVNL



Annexure B: Jharkhand State Load Dispatch Centre (SLDC) Letter on TVNL's Plant Availability Factor for FY 2014-15



FILING OF PETITION FOR TRUE UP OF FY 2014-15 & FY 2015-16

And

REVIEW OF FY 2016-17 OPERATIONAL PARAMETERS

Annexure C: Annual Accounts of FY 2015-16 Audited by Internal Auditor of TVNL



Annexure D: Jharkhand State Load Dispatch Centre (SLDC) Letter on TVNL's Plant Availability Factor for FY 2015-16