

Jharkhand State Electricity Regulatory Commission



Order on
True-up for FY 2012-13 to FY 2015-16,
for
Tenughat Vidyut Nigam Limited
(A Govt of Jharkhand Undertaking)
Hinoo, Doranda, Ranchi-834002

Ranchi
December 14th, 2023



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List of Abbreviations

Abbreviation	Description
AAD	Advance Against Depreciation
A&G	Administrative and General
ARR	Aggregate Revenue Requirement
ATE	Appellate Tribunal for Electricity
BOQ	Bill of Quantity
CCL	Central Coal Fields
CEA	Central Electricity Authority
COD	Date of Commercial operation
DPR	Detailed Project Report
EA	Electricity Act
ECR	Energy Charge Rate
FY	Financial Year
GCV	Gross Calorific Value
GFA	Gross Fixed Assets
GOI	Government of India
JSEB	Jharkhand State Electricity Board
JSERC	Jharkhand State Electricity Regulatory Commission
IDC	Interest During Construction
Kcal	Kilocalorie
Kg	Kilogram
kWh	Kilowatt-Hour
MAT	Minimum Alternative Tax
ml	Milliliter
MT	Metric Tonnes
MU	Million Units
MW	Megawatt
MYT	Multi Year Tariff
NAPAF	Normative Annual Plant Availability Factor
O&M	Operation and Maintenance
PAF	Plant Availability Factor
PLF	Plant Load Factor
PLR	Prime Lending Rate
PPA	Power Purchase Agreement
R&M	Repair and Maintenance
RoE	Return on Equity
Rs	Rupees
SBI	State Bank of India
SERC	State Electricity Regulatory Commission
SFC	Secondary Fuel Consumption
SLDC	State Load Dispatch Centre
SLM	Straight Line Method
TTPS	Tenughat Thermal Power Station



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BEFORE

**Jharkhand State Electricity Regulatory Commission,
Ranchi**

Case (Tariff) No.: 02 of 2023

In the matter of:

Petition for

True-up for First Control Period i.e. FY 2012-13 to FY 2015-16.

In the matter:

Tenughat Vidyut Nigam Limited
Hinoo, Doranda,
Ranchi-834002.....

Petitioner

PRESENT

Hon'ble Justice Amitav Kumar Gupta
Hon'ble Mahendra Prasad
Hon'ble Atul Kumar

Chairperson
Member(Legal)
Member(Technical)

**Order dated
December 14th, 2023**

Tenughat Vidyut Nigam Limited (hereinafter referred to as 'TVNL' or 'the Petitioner') has filed the Petition dated February 01, 2023 for approval of Truing-up for the first control period i.e. FY 2012-13 to FY 2015-16.



Chapter 1: INTRODUCTION

Jharkhand State Electricity Regulatory Commission

- 1.1 The Jharkhand State Electricity Regulatory Commission (hereinafter referred to as the 'JSERC' or 'the Commission') was established by the Government of Jharkhand under Section 17 of the Electricity Regulatory Commission Act, 1998 on August 22, 2002. The Commission became operational with effect from April 24, 2003.
- 1.2 The Government of Jharkhand vide its notification dated August 22, 2002 had defined the functions of JSERC as per Section 22 of the Electricity Regulatory Commission Act, 1998 to be the following, namely:
 - a) to determine the tariff for electricity, wholesale, bulk, grid or retail, as the case may be, in the manner provided in section 29;
 - b) to determine the tariff payable for the use of the transmission facilities in the manner provided in section 29;
 - c) to regulate power purchase and procurement process of the transmission utilities and distribution utilities including the price at which the power shall be procured from the generating companies, generating stations or from other sources for transmission, sale, distribution and supply in the State;
 - d) to promote competition, efficiency and economy in the activities of the electricity industry to achieve the objects and purposes of this Act.
- 1.3 After the Electricity Act, 2003 (hereinafter referred to as the 'Act') came into force, the earlier Electricity Regulatory Commissions Act, 1998 stands repealed and the functions of SERCs are now defined under Section 86 of the Act.
- 1.4 In accordance with Section 86 (1) of the Act, the JSERC discharges the following functions:
 - a) determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State;
 - b) Provided that where open access has been permitted to a category



- of consumers under section 42, the State Commission shall determine only the wheeling charges and surcharge thereon, if any, for the said category of consumers;
- c) regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State;
 - d) facilitate intra-State transmission and wheeling of electricity;
 - e) issue licenses to persons seeking to act as transmission licensees, distribution licensees and electricity traders with respect to their operations within the State;
 - f) promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee;
 - g) adjudicate upon the disputes between the licensees and generating companies; and to refer any dispute for arbitration;
 - h) levy fee for the purposes of this Act;
 - i) specify State Grid Code consistent with the Grid Code specified under Clause (h) of sub-section (1) of Section 79;
 - j) specify or enforce standards with respect to quality, continuity and reliability of service by licensees;
 - k) fix the trading margin in the intra-state trading of electricity, if considered, necessary;
 - l) discharge such other functions as may be assigned to it under this Act.

1.5 The Commission has to also advise the State Government as per sub



section 2 of Section 86 of the Act, on all or any of the following matters, namely:

- a) promotion of competition, efficiency and economy in activities of the electricity industry;
- b) promotion of investment in electricity industry;
- c) reorganization and restructuring of electricity industry in the State;
- d) matters concerning generation, transmission, distribution and trading of electricity or any other matter referred to the State Commission by that Government.

1.6 The State Commission ensures transparency while exercising its powers and discharging its functions.

1.7 In discharge of its functions, the State Commission is also guided by the Tariff Policy notified by the Government of India under Section 3 of the Act. The objectives of the Tariff Policy are to:

- a) ensure availability of electricity to consumers at reasonable and competitive rates;
- b) ensure financial viability of the sector and attract investments;
- c) promote transparency, consistency and predictability in regulatory approaches across jurisdictions and minimize perceptions of regulatory risks;
- d) promote competition, efficiency in operations and improvement in quality of supply.

Tenughat Vidyut Nigam Limited

1.8 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, TVNL became an undertaking of the Government of Jharkhand. 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 are under commercial operation from below timelines:

- a) Unit I - September 1996
- b) Unit II - September 1997

- 1.9 Tenughat Thermal Power Station (TTPS) is located at village Lalpania in the District of Bokaro (Jharkhand). It is situated on the left bank of Tenughat reservoir. The nearest railway station is Gomia which is at a distance of 20 km (approx.) by road. The project site is developed with all modern infrastructure like school, hospital, bank, post office, market complex etc.
- 1.10 TTPS has an acquired land of 1800 acres (approx.) TVNL has planned its future expansion of existing site/plant by addition of 2x660 MW super critical units. The consultant for extension project has been appointed and the consultancy work is under progress. The DPR has been prepared and global tender for selection of EPC contractor shall be floated shortly for installation of 2x660 MW units. The needed fuel requirement will be met from its allocated coal block Rajbhar E & D located in the district of Latehar. Activity for commencement of coal mining is under progress. Water requirement will be met from Tenu Reservoir of Water Resources Department of the Govt. of Jharkhand. With grey field expansion the total installed capacity of 1740 (2x210 +2x660 MW) MW of TTPS shall be dedicated to the service of the State/Nation.

Petitioners Prayer

- 1.11 The Petitioner in the Filing of Petition for True up of the first control period i.e. FY 2012-13 to FY 2015-16 has prayed before the Commission:
- a) To admit this true-up Petition for the First Control Period of FY 2012-13 to FY 2015- 16.
 - b) To approve Revenue Requirement and Capital Expenditure for the First Control Period of FY 2012-13 to FY 2015-16.



- c) To approve the operational and financial parameters as proposed by TVNL considering the constraints of the old machines and to consider the same for recovery of full fixed cost.
- d) 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.
- e) To condone the delay in filing this Petition.
- f) To grant any other relief as the Hon'ble Commission may consider appropriate.
- g) To approve the ARR based on the operating parameters as per the norms provided in the Regulation and allow the Petitioner to retain the gains on account of the efficiency improvement in the Operating Parameters.
- h) 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.
- i) 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.

1.12 The Petitioner has filed for the truing up for FY 2012-13 to FY 2015-16 based on statutory audit of Annual Accounts for the period FY 2012-13 to FY 2015-16 which has been completed by M/s. U. Narain & Co., Ranchi (appointed by CAG) and also by the Jharkhand AG.



Chapter 2: PROCEDURAL HISTORY

Background

- 2.1 The Commission had issued Tariff Order of TVNL for FY 2004-05 on 23.08.2004.
- 2.2 On March 30,2006, the Commission had approved Tariff Order for Tenughat Vidyut Nigam Limited(TVNL) for FY 2005-06.
- 2.3 The Commission had passed Tariff Order for TVNL for FY 2007-08 on 03.01.2008.
- 2.4 On March 05,2010, the Commission had issued the Tariff Order on ARR and Determination of Generation Tariff for FY 2008-09 & FY2009-10 for Tenughat Vidyut Nigam Limited (TVNL)
- 2.5 The Commission had passed the Tariff Order on Annual Revenue Requirement and Determination of Generation Tariff for FY 2009-10 & FY 2010-11 for Tenughat Vidyut Nigam Limited (TVNL) on 22.11.2010.
- 2.6 The Commission had passed the Tariff Order on Annual Revenue Requirement and Determination of Generation Tariff for FY 2010-11 & FY 2011-12 for Tenughat Vidyut Nigam Limited (TVNL) on 31.05.2011.
- 2.7 The Commission had passed the MYT Order on Business Plan and Annual Revenue Requirement and Determination of Generation Tariff for First Control Period of FY 2012-13 to FY2015-16 for Tenughat Vidyut Nigam Limited (TVNL) on 30.05.2012.
- 2.8 The Commission had passed the Order on Petition for Annual Performance Review for FY 2012-13 (including truing-up for FY 2011-12) for Tenughat Vidyut Nigam Limited (TVNL) on 02.07.2014.
- 2.9 The Commission had passed the Order on Petition for Annual Performance Review for FY 2014-15 (Including truing-up for FY 2012-13 & FY 2013-14) for Tenughat Vidyut Nigam Limited (TVNL) on 30.09.2016.
- 2.10 The Commission had passed Order on Petition for Multi Year Tariff for the period FY 2017-21 (Including truing-up For FY 2014-15 & provisional



true-up of FY 2015-16) For Tenughat Vidyut Nigam Limited (TVNL) on 28.02.2020.

- 2.11 In the instant petition, the Petitioner has sought Truing-up for FY 2012-13 to FY 2015-16 based on audited accounts as submitted by the Petitioner.

Information Gaps in the Petition

- 2.12 In exercise of Tariff determination process, several deficiencies/information gaps were found in the Petition submitted by the Petitioner and the same was communicated to the Petitioner vide letter no. JSERC/Case (Tariff) no:02 of 2023/467 dated 27.03.2023.
- 2.13 In response, the Petitioner furnished additional data/information to the Commission vide letter no: Ref 24/23-24 dated 14.04.2023.
- 2.14 The Commission has scrutinized the Petition and the additional data/information furnished by the Petitioner with respect to its discrepancies identified and has considered the same while passing this Order.
- 2.15 In order to provide adequate opportunities to all stakeholders and general public, as mandated under Section 64 (3) of the Electricity Act 2003 and in relevant provisions of Regulations framed by the Commission and in order to ensure transparency in the process of tariff determination, the Commission decided to hold Public Hearing on September 27th, 2023.

Inviting Public Comments/Suggestions

- 2.16 On scrutiny of the Petition, the Commission had directed the Petitioner to publish a Public Notice inviting comments/suggestions from public and to make available copies of the Petition to the members of general public on request.
- 2.17 Accordingly, Public Notice was published by the Petitioner in the



newspapers and a period of twenty-one (21) days was given for submitting the comments/suggestions by the general public:

Table 1:List of newspapers and dates of publication of public notice by the Petitioner

Newspaper	Language	Date of Publication
Dainik Bhaskar	Hindi	22.06.2023 & 23.06.2023
Hindustan Times	English	22.06.2023 & 23.06.2023
Prabhat Khabar	Hindi	22.06.2023 & 23.06.2023
Times of India	English	22.06.2023 & 23.06.2023

2.18 The Commission also published a Public Notice on its website www.jserc.org and various newspapers giving time till July 13th, 2023 to various Stakeholders to submit their comments/suggestions. Further in order to provide adequate opportunities to all stakeholders and general public, as mandated under Section 64 (3) of the Electricity Act 2003 and in relevant provisions of Regulations framed by the Commission, the Commission also held a public hearing on 27th of September 2023.

2.19 The details of newspapers wherein the Notice was published by the Commission are as under:

Table 2:List of newspapers and dates of publication of Public Notice by the Commission

Newspaper	Language	Date of Publication
Prabhat Khabar	Hindi	26.09.2023
Dainik Bhaskar	Hindi	16.09.2023
Dainik Jagran	Hindi	16.09.2023
Hindustan Dainik	Hindi	26.09.2023
The Times of India	English	16.09.2023 & 26.09.2023
The Hindustan Times	English	16.09.2023 & 26.09.2023

Submission of Comments/Suggestions and Conduct of Public Hearing

2.20 No comments/Suggestions on the Petition has been received upon publication of public notice, however comments were raised during public hearing of the petition which has been discussed in details in **Chapter 4** of this Order.



Chapter 3: BRIEF FACTS OF THE PETITION

3.1 The following chapter summarizes the Petition for true-up of FY 2012-13 to FY 2015-16 as filed by the Petitioner for Commission's approval.

True-up for FY 2012-13 to FY 2015-16:

Plant Availability Factor

3.2 The Plant Availability Factor as submitted by the Petitioner is given below:

Table 3: Plant Availability Factor(%) submitted by Petitioner for the First Control Period

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
PAF(%)	88.55%	80.14%	79.91%	87.36%

Gross Generation and Plant Load Factor

3.3 The gross generation and Plant Load Factor as submitted by the Petitioner for the first control period is given below:

Table 4: Gross Generation(MUs) and Plant Load Factor(%) submitted by Petitioner for the First Control Period

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-15
Gross Generation(MUs)	2922	2256	2381	2636
PLF(%)	79.42%	61.32%	64.71%	71.46%

Auxiliary Consumption & Net Generation

3.4 The auxiliary consumption and net generation for the first control period as submitted by the Petitioner is given below:

Table 5: Auxiliary Consumption(%) & Net Generation(MUs) submitted by the Petitioner for the first control period

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Auxiliary Consumption(%)	10.43%	11.29%	11.35%	11.68%
Net Generation(MUs)	2617.17	2001.43	2110.52	2328.28



Station Heat Rate & Specific Oil Consumption

3.5 The station heat rate and specific oil consumption of the plant as submitted by the Petitioner for the first control period i.e. FY 2012-13 to FY 2015-16 is given below:

Table 6: Station Heat Rate (kCal/kWh) & Specific Oil Consumption(ml/kWh) submitted by the Petitioner for the First Control Period

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Station Heat Rate (kCal/kWh)	2939.68	2778.07	2843.03	2753.24
Specific Oil Consumption (ml/kWh)	1.61	1.88	1.49	1.15

Gross Calorific value of Primary fuel & Secondary Fuel

3.6 The gross calorific value of primary fuel and secondary fuel as submitted by the Petitioner for the period FY 2012-13 to FY 2015-16 is given below:

Table 7:Gross Calorific value of Primary fuel(kCal/kg) and Secondary Fuel (kCal/L) as submitted by the Petitioner for the first control period

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
GCV of Primary Fuel (kCal/kg)	4037.17	3886.63	3601.78	3623.14
GCV of Secondary Fuel (kCal/L)	9359	9359	9359	9359

Cost of Primary Fuel

3.7 The cost of primary fuel as submitted by the Petitioner for the first control period is given below:

Table 8:Cost of Primary fuel(Rs./MT) as submitted by the Petitioner for the first control period

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Cost of Coal(Rs/MT)	1924.08	1757.70	2072.44	2491.6

Energy Charge Rate

3.8 The Energy Charge rate of the plant as submitted by the Petitioner for the first control period i.e. FY 2012-13 to FY 2015-16 is given below:



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Table 9: Energy Charge Rate as submitted by the Petitioner for the first control Period

Particulars	Unit	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Capacity	MW	420	420	420	420
Availability	%	88.55	80.10	79.91	87.36
PLF	%	79.42	61.32	64.70	71.46
Gross generation	MU	2922	2256	2380	2636
Auxiliary consumption	%	10.43	11.29	11.35	11.68
Net generation	MU	2617	2001	2110	2328
Station Heat Rate	kcal/kWh	2,939	2,778	2,843	2,753
GCV of coal	kcal/kg	4,037	3,887	3,602	3,623
Transit Loss	%	0.2	0.2	0.2	0.2
Total Coal Consumption	MT	2121022	1605588	1873799	1999528
Cost of Coal	Rs./MT	1,924	1,757	2,072	2,491
Total cost of Coal	Rs.Cr	408	282	388	498
Energy Charge Rate	Rs./kWh	1.56	1.41	1.84	2.14

Capacity Charge

3.9 The detailed fixed cost of the Plant as submitted by the Petitioner for the first control period i.e. FY 2012-13 to FY 2015-16 is summarized below:

Table 10: Detailed Capacity Charges (Rs.Cr) as submitted by the Petitioner for the first control period

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
O&M expenses (Rs.Cr)	142.36	153.94	166.49	180.11
Depreciation (Rs.Cr)	70.39	65.58	53.03	35.27
Interest on loans (Rs.Cr)	99.38	99.48	102.23	103.13
Return on Equity (Rs.Cr)	25.39	25.42	28.61	31.81
Cost of Secondary fuel oil at Normative Availability (Rs.Cr)	29.28	26.43	20.37	13.67
Interest on working capital (Rs.Cr)	33.75	28.0	32.18	38.77
Total fixed cost (Rs.Cr)	400.55	398.85	402.91	402.76

Non-Tariff Income

3.10 The non-tariff income as submitted by the Petitioner for the first control period of the plant is given below:



TVNL - Order on True-up for FY 2012-13 to FY 2015-16

Table 11: Non-Tariff income (Rs.Cr) as submitted by the Petitioner for the first control period

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Non-Tariff Income (Rs.Cr)	30.17	32.59	35.70	34.63

Revenue billed by TVNL

3.11 The total amount billed by TVNL for the first control period of the plant is summarized below:

Table 12: Revenue Billed (Rs.Cr) as submitted by TVNL for the first control period

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Revenue Billed (Rs.Cr)	810.8	481.3	692.2	815.0

Revenue Gap/Surplus

3.12 The Revenue Gap/Surplus as submitted by the Petitioner for the first control period of the plant i.e. FY 2012-13 to FY 2015-16 after consideration of fixed charges and variable charge is summarized below:

Table 13: Total fixed and variable charges including gap/(surplus) (Rs.Cr) as submitted by Petitioner

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
O&M expenses	142.4	153.9	166.5	180.1
Depreciation	70.4	65.6	53.0	35.3
Interest on loans	99.4	99.5	102.2	103.1
Return on Equity	25.4	25.4	28.6	31.8
Cost of Secondary fuel	29.3	26.4	20.4	13.7
Interest on working capital	33.7	28.0	32.2	38.8
Total Fixed Cost	400.6	398.9	402.9	402.8
Total Energy Charges	408.1	282.2	388.3	498.2
Total Expense	808.7	681.1	791.2	901.0
Less: NTI	30.2	32.6	35.7	34.6
Net Total Expense	778.5	648.5	755.5	866.3
PAF based incentive/disincentive	16.73	(22.9)	(24.13)	11.18
Total Amount billed by TVNL as per accounts	810.8	481.3	692.2	815
Gap/(Surplus) for the year	(15.62)	144.19	39.17	62.49



Chapter 4: PUBLIC CONSULTATION PROCESS

- 4.1 On the Petitioner's petition several stakeholders have responded. A Public Hearing was held by the Commission on September 27, 2023 for giving additional opportunity to all the stakeholders to submit their comments/suggestions on the said petition for ensuring maximum public participation and transparency. Accordingly, stakeholders voiced their comments and suggestions and the list of the attendees is mentioned in Chapter-8 of this Order.
- 4.2 The comments and suggestions of the public along with the response of the Petitioner and the views of the Commission are summarized in this Chapter. The issues raised by the stakeholders which do not have any significance to petition have not been discussed in this Chapter.

Plant Load Factor

Public Comments/Suggestions

- 4.3 TVNL was not able to maintain the PLF as approved by the Honorable Commission and the PLF had been fluctuating a lot in the first control period. The actual reason for the same should be investigated further and the accountability needs to be fixed. At any cost, the inefficiency should not be passed on to the consumer.

Petitioner's Response

- 4.4 TVNL would like to submit that due to the following reasons the Plant Availability Factor (PAF) for FY 2014-15 was 79.91% which is lower than the normative availability of 85% are as below:
- a) Unit-1 shutdown from 13th July 2014 to 02nd September 2014 for replacement of rotor of generator.
 - b) Frequent tripping of Unit-I due to Boiler Tube Leakage from September 2014 to October 2014 at Reheater zone. The actual problem was detected after the visit of BHEL expert.



- c) One unit put under shutdown due to shortage of coal during the month of January 2015 and March 2015.
- 4.5 TVNL Would like to further submit that due to partial loading of the plant and other uncontrollable factors there has been loss in Gross generation which is reflected in the actual numbers for Plant Load Factor (In %) during the Control Period.
- 4.6 Actual plant load factor is low because of partial load operation and frequent stop/start of Units. TVNL also submits that frequent stop/start after reserve shutdown and running of units under backing down has affected the performance of the units.

Views of the Commission

- 4.7 The Commission has considered the submissions of the Stakeholder and the response by the Petitioner.

Auxiliary Consumption

Public Comments/Suggestions

- 4.8 Auxiliary consumption was very high during the control period. This needs to be properly investigated as to what constitutes the auxiliary consumption of the generating units as excess energy is being shown to be consumed in auxiliary consumption.
- 4.9 It may be observed that the actual auxiliary consumption claimed is much higher than the approved figures resulting in higher energy charge rate. Since Auxiliary consumption is controllable and a performance parameter as per JSERC Generation Tariff Regulations, 2010 no change in normative or approved figures should be considered.
- 4.10 The said regulation says that The CGS or ISGS may be directed by concerned RLDC to operate its unit(s) at or above the technical minimum but below the normative plant availability factor on account of grid security or due to the fewer schedules given by the beneficiaries. However, this was never the case. The compensation to be provided on monthly basis that



should be duly supported by relevant data verified by RLDC or SLDC, as the case may be. However, this is not applicable to TVNL.

4.11 As far as point no 2.3.5 is concerned, the order stated that under specific conditions this will be allowed and detailed out the procedure. The order is as follows;

“5.7. RLDC shall suo-moto revise the schedule of any generating station as per clauses 6.5.14 and 6.5.20 of the Grid Code to operate at or above technical minimum in the ratio of under-requisitioned quantum (with respect to technical minimum) in the interest of smooth system operation under the following conditions:

- i. Extreme variation in Weather Conditions.*
- ii. High Load Forecast.*
- iii. To maintain reserves on regional or all India basis.*
- iv. Network Congestion.*
- v. Any other event which in the opinion of RLDC/NLDC shall affect the grid security.*

While doing so, it is possible that the requisition of some beneficiaries may go up to ensure technical minimum. In this case, SLDC's may surrender power from some other inter-State generating station(s) or intra-State generating station(s) based on merit order. The concerned RLDC shall issue R-1 schedule accordingly and this shall be intimated to the concerned generating station, through the scheduling process.”

Petitioner's Response

4.12 TVNL would like to submit that partial load operation and frequent stop/start after reserve shutdown and running of units under backing down affects the performance of the units. During partial load, power generation is reduced, but most of the auxiliaries remain running at nearly full load, which results in an increase in actual auxiliary consumption.

Views of the Commission

4.13 The Commission has considered the submissions of the Stakeholder and



the replies by the Petitioner.

Station Heat Rate

Public Comments/Suggestions

- 4.14 SHR for FY2015 and FY2016 deviates too much for TVNL. For FY 2015 the deviation is around 7.8% and for FY 2016 the deviation is around 10%. More the SHR, more consumption of primary fuel to produce 1 unit of electricity. Any deviation in SHR is a direct burden to the consumer and hence, should not be passed on to the consumers. Strangely the SHR is in increasing order for the 1st control period that shows a poor control over the fuel quality.
- 4.15 As such, it may be observed that the actual SHR claimed is much higher than the approved figures. Since Station heat rate is controllable and a performance parameter as per JSERC Generation Tariff Regulations, 2010 no change in normative or approved figures should be considered. Also, the petitioner has not given suitable justification for increase in GSHR values and hence, it should be outrightly rejected.

Petitioner's Response

- 4.16 TVNL would like to submit that over the years it has taken several measures to improve its Station Heat Rate. The Station Heat Rate has improved from 2,939.68 kCal/kWh in FY 2012-13 to 2,753.24 kcal/kWh in FY 2015-16. The petitioner would also like to appraise that as a result of various initiatives, the Station Heat Rate (SHR) has further improved from 2,795.41 kcal/kWh in FY 2016-17 to 2,547.24 kcal/kWh in FY 2022-23. It is evident that TVNL is in constant endeavor to improve upon its operational parameters for an ageing plant which remains a constant challenge.

Views of the Commission

- 4.17 The Commission has considered the submissions of the Stakeholder and the replies by the Petitioner.



Specific Consumption of Oil

Public Comments/Suggestions

4.18 The specific consumption of oil is way above the approved rate of JSERC. The inefficiency of TVNL should not be passed on to JBVNL, this is a clear case of inefficiency.

Petitioners response

4.19 From the actual values of specific oil consumption for the First Control Period of FY 2012-13 to FY 2015-16, it is evident that TVNL is in constant endeavor to improve its specific oil consumption which has improved significantly from 1.6ml/kWh in FY 2012-13 to 1.15m/kWh in FY 2015-16 because of various R&M works undertaken during the period. TVNL would also like to mention that frequent stop/start after reserve shutdown and running of units under partial load affects the performance of the units.

Views of the Commission

4.20 The Commission has considered the submissions of the Stakeholder and the replies by the Petitioner.

Gross Calorific Value

Public Comments/Suggestions

4.21 The petition did not mention the approved GCV of primary fuel for the 1st control period deliberately. The MYT approved rate for average GCV for the control period was 4368.44Kcal/kg. However, the average GCV of primary fuel in the true up petition is around 3786.75 kcal/kg. There is a huge difference of 581.69 kcal/kg which is approx. 13.4% less than the approved GCV. A higher GCV indicates better quality of fuel and lowers fuel cost, since it lowers the consumption of fuel needed for producing the required amount of energy. This lowering value of GCV increases the fuel cost that is ultimately passed on to the consumers. Hence, this should not be allowed.



4.22 Cost of primary fuel is way too high than the approved figure. For FY13, the increase is 16%, FY 15, there was 25% increase in cost and for FY 16, the increment is around 51%. The incremental burden of the primary fuel should not be passed on to the consumer of JBVNL.

Petitioner's response

4.23 The Gross Calorific Value (GCV) and cost of primary fuel are uncontrollable factors and beyond the control of TVNL. The values for the same as approved for the First Control Period of FY 2012-13 to FY 2015-16 are based on the weighted average values for the same for the last 3 preceding months leading up to the Control Period. As such, any escalations in the prices of primary fuel and variations in GCV of coal are beyond the control of TVNL and they have been claimed as per audited accounts.

Views of the Commission

4.24 The Commission has considered the submissions of the Stakeholder and the replies by the Petitioner.

Energy Charge Rate

Public Comments/Suggestions

4.25 Energy charge rate as per petition is way too high. The increment is as follows: for FY13 it is 27%, FY14 it is 21%, for FY15, it is 65% and for FY 16, it is more than 100%.

Petitioner's response

4.26 The landed price of coal for FY 2012-13, FY 2013-14, FY 2014-15 and FY 2015-16 is an uncontrollable factor which is beyond the control of the TVNL. TVNL procures coal from Central Coalfields Limited and the prices of different grades of coal are notified periodically as published in Gazette of India. TVNL has abided to all norms pertaining to coal procurement as



mentioned in the Fuel Supply Agreement (FSA). Two of the major driving factors in calculation of Energy Charge Rate (ECR) approved by the Hon'ble Commission in the MYT Order for the First Control Period FY 2012-13 to FY 2015-16 are GCV and price of primary fuel which has been considered based on the weighted average values for the 3 preceding months leading up to the Control Period. TVNL has claimed the Energy Charge Rate (ECR) based on the audited accounts.

Views of the Commission

4.27 The Commission has considered the submissions of the Stakeholder and the replies by the Petitioner.

O&M charges

Public Comments/Suggestions

4.28 TVNL has asked for approval of O&M cost as per approved figure of MYT. It has not shown the actual figures as per audited account deliberately. This is in contravention to the regulation and the petitioner must submit the actual expenses for O&M as per audited accounts. Since O&M expenses are controllable in nature as per JSERC Generation Tariff Regulations, 2010, no change in normative or approved figures should be considered. Also, the petitioner has not given suitable justification or break up of O&M expenses to justify such a high increase in O&M expenses. The petitioner has not been able to control the performance of this controllable parameter. Thus, it has no merit in the contention and should be outrightly rejected.

Petitioner's response

4.29 Regulations 6.12, 6.13 and 6.14(a) of JSERC Generation Tariff Regulations, 2010 states that:

"The Commission shall set targets for each year of the Control Period for the items or parameters that are deemed to, be controllable" and which includes:



- a) *Gross Station Heat Rate.*
- b) *Normative Annual Plant Availability Factor.*
- c) *Auxiliary Energy Consumption.*
- d) *Secondary Fuel Oil Consumption.*
- e) *Operation and Maintenance Expenses.*
- f) *Financing Cost which includes cost of debt (interest), cost of equity (return) and*
- g) *Depreciation.*

Any financial loss on account of underperformance on targets for parameters specified in clause 6.12 (a) to (e) of these Regulations is not recoverable through tariffs. Similarly, any financial gain on account of over-performance with respect to these parameters is to the Generating Company's benefit and shall not be adjusted in tariffs.

"Any surplus and deficit on account of O&M expenses company and shall be to the account of the generating shall not be trued up in ARR".

TVNL has claimed the O&M expenses for true-up for the First Control Period i.e. FY 2012-13 to FY2015-16 as per the provisions of the aforesaid regulations.

Views of the Commission

4.30 The Commission has considered the submissions of the Stakeholder and the replies by the Petitioner.

Interest on Loan

Public Comments/Suggestions

4.31 Interest on loan claimed is way too high for the control period. Such high interest rate should not be passed on to JBVNL. The question is why the interest burden is so high and why TVNL is unable to pay off the loan that is gradually increasing. The trend shows that it is in increasing order despite no new asset addition.



Petitioner's response

4.32 TVNL would like to submit that it is difficult to service its debt timely due to delayed and partial payments being made by JBVNL. As on 31st March 2016, JBVNL Owes TVNL cumulative dues of Rs. 3082.71Crores (Rupees three thousand eighty-two crores seventy lakhs only). Due to the late and partial payment of dues by JBVNL to TVNL, debt could not be serviced timely in the past and hence in the First Control Period of FY 2012-13 to FY 2015-16 TVNL had to pay penalties along with the Interest on Loan.

Views of the Commission

4.33 The Commission has considered the submissions of the Stakeholder and the replies by the Petitioner.

Interest on working capital

Public Comments/Suggestions

4.34 The interest on working capital is very high. This is quite evident as the working capital requirement for the 1st control period is way above the approved figures in MYT order. Except for FY2014, the working capital requirement is higher for FY2015 and FY2016 and for FY2016, the working capital requirement is almost 30% higher than what is approved in MYT.

Petitioners response

4.35 TVNL has computed interest on working capital based on figures as per annual audited accounts for the years of the First Control Period FY 2012-13 to FY 2015 16 and as per provisions in JSERC Generation Tariff Regulations, 2010.

Views of the Commission

4.36 The Commission has considered the submissions of the Stakeholder and the replies by the Petitioner.



Chapter 5: TRUE-UP FOR FY 2012-13 to FY 2015-16

- 5.1 The Commission had approved the MYT Order for the 1st Control Period i.e. FY 2012-13 to FY 2015-16 and determined the Energy Charge Rate and Fixed Charges for FY 2012-13 to FY 2015-16 vide its Order dated May 30th, 2012, based on the principles specified in the JSERC Generation Tariff Regulations, 2010.
- 5.2 In the instant petition the Petitioner has now sought approval for True-up for FY 2012-13 to FY 2015-16, based on the Audited Accounts taking into consideration the provisions of the Tariff Regulations 2010 and the methodology adopted by the Commission in the previous Orders.
- 5.3 While conducting the true up of FY 2012-13 to FY 2015-16, the Commission has taken into consideration:
- Audited accounts for FY 2012-13 to FY 2015-16 of the Petitioner;
 - Principles and provisions laid down in the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010;
 - Materials placed before the Commission;
 - Methodology adopted by the Commission in its previous Orders.
- 5.4 The component-wise details, filed by the Petitioner and the Commission's analysis and discussion is made in the upcoming paragraph.

Plant Availability Factor(PAF) & Plant Load Factor(PLF)

Petitioner's Submission

- 5.5 The Petitioner in its Tariff Petition has submitted the PAF for FY 2012-13 to FY 2015-16 as per actual data as shown in table below against the PAF of 85% as approved by the Commission in its previous MYT Tariff Order for the first control period.

Table 14: Plant availability factor(%) as submitted by the Petitioner for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
PAF(%)	88.55%	80.10%	79.91%	87.36%



TVNL - Order on True-up for FY 2012-13 to FY 2015-16

5.6 The Petitioner in its Tariff Petition has submitted the PLF for FY 2012-13 to FY 2015-16 as per actual data available as shown in the table below against PLF of 85%, as approved by the Commission in its previous MYT Tariff Order for the first control period.

Table 15: Plant Load Factor(%) as submitted by the Petitioner for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
PLF(%)	79.42%	61.32%	64.71%	71.46%

5.7 The Petitioner has submitted reasons for low PAF for FY 2014-15 and not being able to achieve the Commission approved PAF due to the following reasons:

- a) Unit-I shut down from 13th July 2014 to 02nd September 2014 for replacement of rotor of generator (Outage of 52 days).
- b) Frequent tripping of Unit-I due to Boiler Tube Leakage from September 2014 to October 2014 at Reheater zone. The actual problem was detected after the visit of BHEL expert. (Total outage of 1012 hours).
- c) One unit put under shutdown due to shortage of coal during the month of January 2015 and March 2015.

5.8 The Petitioner has also submitted reasons for low PLF for the period and not being able to achieve Commission approved PLF due to the following reasons:

- a) Due to the backing down of the plant and other uncontrollable factors there has been loss in Gross generation which is reflected in the actual numbers for Plant Load Factor (%) during the Control Period.
- b) Actual plant load factor is low because of partial load operation and backing down. The petitioner also submits that frequent stop/start after reserve shutdown and running of units under backing down has affected the performance of the units.

Commission's Analysis

5.9 As per Regulation 8.4 of the Generation Tariff Regulations, 2010, the normative availability allowable for the Power Plant for FY 2012-13 to FY



TVNL - Order on True-up for FY 2012-13 to FY 2015-16

2015-16 is 85%, as also approved by the Commission in the previous Tariff Order.

5.10 The Commission has scrutinized and verified the actual availability during FY 2012-13 to FY 2015-16 from SLDC certificates and accordingly approves a final availability of the plant vis-à-vis normative availability for the first control period as mentioned in table below:

Table 16 Plant availability factor(%) as approved by the Commission for FY 2012-13 to FY 2015-16

Particulars	Petition				Approved			
	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 12-13	FY 13-14	FY 14-15	FY 15-16
Actual PAF(%)	88.55%	80.14%	79.91%	87.36%	88.55%	80.14%	79.91%	87.36%
Normative PAF(%)	-	-	-	-	85%	85%	85%	85%

5.11 The Commission upon scrutinizing the documents and information submitted by the Petitioner finds that there is an ambiguity wrt the gross generation and the PLF considered for the period. The Commission has taken into consideration the gross generation as submitted by the Petitioner and has approved PLF for the first control period i.e. FY 2012-13 to FY 2015-16 as mentioned in table below:

Table 17 Plant Load Factor(%) as approved by the Commission for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
PLF(%)	70.93%	54.18%	57.15%	63.16%

Gross Generation

Petitioner's Submission

5.12 The Petitioner in its Tariff Petition has submitted that the actual gross generation for both units during FY 2012-13 to FY 2015-16 is as mentioned in table below:



Table 18 Gross Generation(MUs) submitted by the Petitioner for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Gross generation(MUs)	2922	2256	2381	2636

Commissions Analysis

5.13 The Commission upon scrutinizing and verifying the documents submitted by the Petitioner and considering the PLF as approved in para 5.11 above, approves gross generation of the plant for FY 2012-13 to FY 2015-16 as mentioned in the table below:

Table 19 Gross Generation(MUs) as approved by the Commission for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Gross Generation(MUs)	2922.02	2256.14	2380.70	2636.31

Auxiliary Consumption

Petitioner's Submission

5.14 The Petitioner has submitted that the actual auxiliary consumption for both the units for FY 2012-13 to FY 2015-16 is mentioned in the table below:

Table 20 Auxiliary Consumption(%) as submitted by the Petitioner for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Auxiliary Consumption(%)	10.43%	11.29%	11.35%	11.68%

5.15 The petitioner has also submitted that the deviation from normative auxiliary consumption is due to frequent stop/start after reserve shutdown and running of units under backing down. During backing down, power generation is reduced, but most of the auxiliaries remains running at nearly full load, which results in an increase in actual auxiliary consumption. The Petitioner has also mentioned that, it is in



constant endeavor to improve the auxiliary consumption to meet the values approved by the Hon’ble Commission.

Commission’s Analysis

5.16 Auxiliary consumption refers to the quantum of energy consumed by the auxiliary equipment of the generating station. Higher auxiliary consumption reduces the net generation of a generating station and leads to higher cost per unit of generation.

5.17 The Commission upon prudence check of the information and data submitted by the Petitioner and after due scrutiny of the documents placed before the Commission has found that the actual auxiliary consumption is higher than the values submitted by the Petitioner. The Commission has considered the gross generation as submitted by the Petitioner and the net energy exported to JSEB for the period and has accordingly calculated and approved the auxiliary consumption which is mentioned in the table 21 below.

5.18 The Commission, refers to Regulation 8.4 of the Generation Tariff Regulations, 2010 which specifies norms for the auxiliary consumption for the Petitioner for FY 2012-13 to FY 2015-16 as 9.50%. Further, as per the said regulations auxiliary consumption is a “controllable parameter”. Therefore, Commission has considered the normative auxiliary consumption as 9.50% for calculation of energy charge rate for the respective year of the control period.

Table 21 Auxiliary Consumption(%) as approved by the Commission for FY 2012-13 to FY 2015-16

Particulars	Petition				Approved			
	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 12-13	FY 13-14	FY 14-15	FY 15-16
Actual Auxiliary Consumption	10.43%	11.29%	11.35%	11.68%	10.78%	11.74%	11.79%	11.95%
Normative Auxiliary Consumption	-	-	-	-	9.50%	9.50%	9.50%	9.50%



Net Generation

Petitioner's Submission

5.19 The Petitioner has submitted the net generation of the plant for FY 2012-13 to FY 2015-16 as mentioned in the table below:

Table 22 Net Generation(MUs) as submitted by the Petitioner for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Net Generation(MUs)	2617.17	2001.43	2110.52	2328.28

Commission's Analysis

5.20 The Commission, after scrutiny of the documents, finds a difference in the values of net generation wrt to the data submitted by the Petitioner and as per the actual net energy exported to JSEB for the period. The Commission upon prudence check of the documents has considered the net energy exported to JSEB as the net generation of TVNL for FY 2012-13 to FY 2015-16 and approves net generation as mentioned in the table below:

Table 23 Net Generation(MUs) as approved by the Commission for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Net Generation(MUs)	2606.95	1991.21	2100.29	2321.03

Station Heat Rate

Petitioner's Submission

5.21 The Petitioner has submitted the actual Station heat rate for the first control period i.e. FY 2012-13 to FY 2015-16 as mentioned in the table below:

Table 24 Station Heat Rate (kcal/kWh) as submitted by the Petitioner for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Station Heat Rate(kcal/kWh)	2939.68	2778.07	2843.03	2753.24



5.22 The Petitioner has also submitted that over the years it has taken several measures to improve its Station Heat Rate. The Station Heat Rate has been improved from 2,939.68 kCal/kWh in FY 2012-13 to 2,753.24 kcal/kWh in FY 2015-16.

Commissions Analysis

5.23 The Commission has specified the norms of operation for the two Units of TVNL in the Regulation 8.4 of the ‘Generation Tariff Regulations, 2010’. As already noted by the Commission in its MYT Order dated May 30,2012, the norms of operation were fixed by the Commission after study of the past performance for each plant in the state and as per the data made available by the Generating companies including the two units of the Petitioner. Before finalization of the norms, the Commission had also conducted a public hearing in which all the stakeholders, including the Petitioner, participated. The Commission after due deliberation has finalized the Regulations.

5.24 The Regulations have been notified accordingly and the norms of operation are applicable and binding on each of the generation plants covered under the Regulations. Accordingly, the Commission does not find any merit in allowing relaxation of the norms fixed for SHR in the Generation Tariff Regulations, 2010. Hence, Commission allows Station heat rate for the plant for the first control period as mentioned in table below:

Table 25 Station Heat Rate(kcal/kWh) as approved by the Commission for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Station Heat Rate(kcal/kWh)	2908	2773	2638	2503

Secondary Fuel Oil Consumption

Petitioners Submission

5.25 The Petitioner has submitted secondary fuel oil consumption for FY 2012-13 to FY 2015-16 as mentioned in the table below:



Table 26 Secondary fuel oil consumption(ml/kWh) as submitted by the Petitioner for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Secondary fuel consumption(ml/kWh)	1.61	1.88	1.49	1.15

- 5.26 The Petitioner further stressed the fact, that from the actual values of specific oil consumption for the First Control Period of FY 2012-13 to FY 2015-16, it is evident that the Petitioner is in constant endeavor to improve its specific oil consumption which has improved significantly from 1.61 ml/kWh in FY 2012-13 to 1.15 ml/kWh in FY 2015-16 because of various R&M works undertaken during the period.
- 5.27 The Petitioner has also submitted that historically the actual specific oil consumption for TVNL has been in the range of 2-3 ml/kWh. Due to the works carried out under R&M, TVNL has been able to achieve a specific oil consumption of 1.15 ml/kWh in FY 2015-16 which is a considerable improvement.
- 5.28 The petitioner has also submitted precedence of other similar aged 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.
- 5.29 The Petitioner has further submitted that it has been able to recover lesser cost of secondary fuel oil due to this norm and hence it requests relaxation of at least 2.0 ml/kWh i.e. in line with precedence for similar profile power plants in the country.

Commissions Analysis

- 5.30 The Commission, refers to Regulation 6.12 and Regulation 6.13 of the Generation Tariff Regulations, 2010 which specifies as:
- “6.12 The Commission shall set targets for each year of the Control Period for the items or parameters that are deemed to be “controllable” and which includes:*
- (a) Gross Station Heat Rate;*



- (b) Normative Annual Plant Availability Factor;
- (c) Auxiliary Energy Consumption;
- (d) Secondary Fuel Oil Consumption;
- (e) Operation and Maintenance Expenses;
- (f) Financing Cost which includes cost of debt (interest), cost of equity (return); and
- (g) Depreciation.

6.13 Any financial loss on account of underperformance on targets for parameters specified in clause 6.12 (a) to (e) of these Regulations is not recoverable through tariffs. Similarly, any financial gain on account of over-performance with respect to these parameters is to the Generating Company’s benefit and shall not be adjusted in tariffs”.

5.31 The Commission, upon verifying the secondary fuel oil consumption submitted by the Petitioner in the table 26 above, finds it to be higher than the norm of 1ml/kWh as specified in Regulation 8.4 of the Generation tariff Regulations, 2010 and also as approved in MYT order for the control period by the Commission.

5.32 Regulation 6.12 read with Regulation 6.13 Generation Tariff Regulations, 2010 clearly specifies that any financial loss on account of underperformance on targets of Secondary Fuel Oil consumption is not recoverable through tariffs. Accordingly, the Commission approves the normative specific oil consumption as mentioned in the table below:

Table 27 Secondary fuel oil consumption (ml/kWh) as approved by the Commission for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Secondary fuel oil consumption(ml/kWh)	1	1	1	1

Gross Calorific Value(GCV) of Primary and Secondary Fuel

Petitioners Submission

5.33 The gross calorific value of coal and secondary fuel as submitted by the



Petitioner for the first control period i.e. FY 2012-13 to FY 2015-16 is mentioned in the table below:

Table 28: Gross Calorific Value of Primary fuel(kCal/kg) & Secondary Fuel(kCal/ltr) as submitted by the Petitioner for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
GCV of Primary Fuel(kCal/kg)	4037.17	3886.63	3601.78	3623.14
GCV of Secondary Fuel(kCal/Ltr)	9359	9359	9359	9359

Commissions Analysis

5.34 Calorific value of a fuel refers to the amount of heat released on burning of one unit of the fuel. Thus, a higher GCV indicates better quality of fuel and also lowers fuel cost, since it lowers the consumption of fuel needed for producing the required amount of energy.

5.35 The Commission had directed the Petitioner to submit information on consumption and GCV of coal and secondary fuel oil for the first control period i.e. FY 2012-13 to FY 2015-16 as a part of additional data requirements during the process of initial scrutiny of the Petition.

5.36 The Commission, upon prudence check of the documents submitted by the Petitioner, has analyzed month wise coal quantity and GCV as fired data submitted by the Petitioner and accordingly approves the GCV of coal for the first control period i.e. FY 2012-13 to FY 2015-16 as mentioned in table below:

Table 29 Gross Calorific value(kcal/kg) of primary fuel as approved by the Commission for FY 2012-13 to FY 2015-16.

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
GCV of Primary fuel(kCal/kg)	4038.09	3877.88	3591.72	3619.40

5.37 The Commission, upon prudence check of the information’s submitted by the Petitioner has found that the Petitioner has not submitted the actual GCV of the secondary fuel. In its place, it has submitted the GCV value of secondary fuel as 9359 kCal/ltr as approved in MYT order. The



TVNL - Order on True-up for FY 2012-13 to FY 2015-16

Commission has taken note of the same and has approved the GCV of secondary fuel for the first control period i.e. FY 2012-13 to FY 2015-16 as mentioned in the table below:

Table 30 GCV of secondary fuel(kcal/ltr) as approved by the Commission for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
GCV of Secondary fuel(kCal/ltr)	9359	9359	9359	9359

Cost of Primary Fuel

Petitioners Submission

5.38 The Petitioner has submitted the actual cost of primary fuel for the first control period i.e. FY 2012-13 to FY 2015-16 as mentioned below:

Table 31: Cost of Primary Fuel(Rs./MT) as submitted by Petitioner for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Cost of Primary Fuel(Rs/MT)	1924.08	1757.70	2072.44	2491.60

Commissions Analysis

5.39 The Commission, upon scrutinizing and analyzing the documents submitted by the Petitioner, and also upon verification of the figures as per audited accounts, approves the cost of primary fuel for the first control period as follows:

Table 32 Cost of Primary Fuel (Rs./MT) as approved by the Commission for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Cost of Primary Fuel	1849.61	1716.28	1959.13	2474.42

Transit Loss

Petitioners Submission

5.40 The Petitioner has submitted a transit loss for the first control period as mentioned in the table below:



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Table 33 Transit loss(%) as submitted by the Petitioner for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Transit Loss(%)	0.2	0.2	0.2	0.2

Commissions Analysis

5.41 The Petitioner is a pit head generating station and as per clause 8.9 of the Generation Tariff Regulations, 2010 which specifies and allows a transit loss of 0.2% for pithead generating stations, therefore the Commission approves transit loss of 0.2% for FY 2012-13 to FY 2015-16 which is also in line with the MYT order approved for FY 2012-13 to FY 2015-16.

Table 34 Transit loss(%) as approved by the Commission for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Transit Loss(%)	0.2	0.2	0.2	0.2



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Table 35 Approved Energy Charge Rate(Rs./kWh) for the first control period i.e. FY 2012-13 to FY 2015-16

Particulars	FY 2012-13			FY 2013-14			FY 2014-15			FY 2015-16		
	MYT	Petition	Approved	MYT	Petition	Approved	MYT	Petition	Approved	MYT	Petition	Approved
Capacity(MW)	420	420	420	420	420	420	420	420	420	420	420	420
PAF(%)	85	88.55	88.55	85	80.13	80.13	85	79.91	79.91	85	87.36	87.36
PLF(%)	85	79.42	70.93	85	61.32	54.18	85	64.70	57.15	85	71.46	63.16
Gross Generation (MU)	3127	2922	2922.02	3127	2256	2256.14	3127	2381	2380.70	3136	2636	2636.31
Auxiliary Consumption (%)	9.5	10.43	9.5	9.5	11.29	9.5	9.5	11.35	9.5	9.5	11.68	9.5
Net Generation (MU)	2830	2617	2606.95	2830	2001	1991.21	2830	2110	2100.30	2838	2328	2321.04
Station Heat Rate (kcal/kWh)	2908	2939.68	2908	2773	2778.07	2773	2638	2843.03	2638	2503	2753.24	2503
Specific oil consumption(ml/kWh)	1	1.61	1	1	1.88	1	1	1.49	1	1	1.15	1
GCV of Coal(kcal/kg)	4638.44	4037.17	4038.09	4638.44	3886.63	3877.88	4638.44	3601.78	3591.72	4638.44	3623.14	3619.40
Transit Loss(%)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Cost of Coal (Rs/MT)	1659.53	1924.08	1849.61	1659.53	1757.70	1716.29	1659.53	2072.44	1959.14	1659.53	2491.6	2474.42
Total Cost of Coal (Rs.Cr)	345.02	408.1	382.46	328.95	282.2	269.12	312.89	388.36	332.76	297.67	498.14	437.23
Energy Charge Rate (Rs/kWh)	1.21	1.55	1.47	1.16	1.41	1.35	1.10	1.84	1.58	1.04	2.14	1.88



Determination of Fixed Cost

Operation & Maintenance Expense

Petitioners Submission

- 5.42 The Petitioner has submitted the details of the O&M Expenses divided into A&G Expenses, R&M Expenses and Employee Expenses and has claimed as per approved in MYT order.
- 5.43 The Petitioner has clarified that employee expenses as submitted, consists of salaries, overtime allowance, leave salary and expenses for staff & officers' welfare.
- 5.44 The Petitioner has also clarified that repair and maintenance as submitted, is meant for the up keep of the generating station. Further, as every asset requires repair and maintenance at some point, to keep the thermal generating station healthy and reliable the petitioner has infused certain amount of funds on R&M activities. TVNL is trying its best to ensure achievement of parameters as specified by the Hon'ble Commission and accordingly makes necessary expenditure on R&M activities.
- 5.45 The Petitioner has also mentioned about administrative and general expenses which mainly consist of rents, telephone expenses, other communication expenses, professional charges, conveyance and travelling allowances and other debits.
- 5.46 The Petitioner has submitted the O&M Expenses for FY 2012-13 to FY 2015-16 as below:

Table 36: O&M Expense (Rs. Cr) as submitted by the Petitioner for the first control period i.e. FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Employee Expense	31.57	33.84	36.30	38.97
Total Employee Expense	31.57	33.84	36.30	38.97
A&G Expense	18.97	20.56	22.29	24.17
R&M Expense	91.82	99.54	107.90	116.97
Total (Rs. Cr)	142.36	153.94	166.49	180.11



Commissions Analysis

5.47 The Commission, referring to Regulation 6.14 & Regulation 7.41 of the Generation Tariff Regulations 2010 which specifies:

“Regulation 6.14 of Generation Tariff Regulations 2010 specifies –

“The true up across various controllable parameters shall be conducted as per principles stated below: -

any surplus and deficit on account of O&M expenses shall be to the account of the generating company and shall not be trued up in ARR;” and

“7.41 Existing Thermal Generating Stations:

- a) The O&M expenses for the Transition Period shall be approved by the Commission as per the JSERC (Terms and condition of Determination of Generation Tariff) Regulations, 2004.*
- b) The Applicant shall submit details on O&M expenses as required by the Commission. The O&M expenses excluding terminal liabilities for the Base Year shall be determined based on latest accounting statements, estimates of the Generating Company for relevant years and other factors considered relevant.*
- c) The O&M expenses excluding terminal liabilities permissible towards determination of tariff for each year of the Control Period shall be determined after a prudence check by the Commission based on submissions of the Generating Company, previous years’ actual expenses and any other factor considered relevant.*
- d) Terminal Liabilities will be approved as per actual submitted by the Generating Company or be established through actuarial studies.*
- e) Increase in O&M charges on account of war, insurgency or changes in laws, or like eventualities where the Commission is of the opinion that an increase in O&M charges is justified, may be considered by the Commission for a specified period.”*



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5.48 The Commission, after scrutinizing the information's submitted by the Petitioner, finds that the Petitioner has claimed employee expense, repair & maintenance expense and administrative and general expense as per the MYT order as approved by the Commission for FY 2012-13 to FY 2015-16.

5.49 The Commission has also reviewed the employee expenses and terminal liabilities as per the audited accounts for FY 2012-13 to FY 2015-16. The Commission after consideration and analyzing the audited accounts submitted by the Petitioner, approves O&M expense after giving due consideration to the submissions of the Petitioner, interest of all stakeholders and assessment of the actual costs incurred by the Petitioner during the year. Accordingly, the Commission approves the total O&M expenses for the year FY 2012-13 to FY 2015-16 as given below:

Table 37 :O&M Expense (Rs.Cr) approved by the Commission for the first control period i.e. FY 2012-13 to FY 2015-16

Particulars	FY 2012-13		FY 2013-14		FY 2014-15		FY 2015-16	
	Petition	Approved	Petition	Approved	Petition	Approved	Petition	Approved
Employee Expense	31.57	29.07	33.84	33.80	36.30	36.30	38.97	38.97
Terminal Liabilities	0.00	13.91	0.00	10.88	0.00	15.53	0.00	38.00
Total Employee Expense	31.57	42.98	33.84	44.68	36.30	51.83	38.97	76.97
A&G Expense	18.97	13.18	20.56	14.85	22.29	14.89	24.17	16.33
R&M Expense	91.82	42.20	99.54	56.51	107.90	58.54	116.97	79.14
Total	142.36	98.36	153.94	116.04	166.49	125.26	180.11	172.44

Depreciation

Petitioners Submission

5.50 The Petitioner has submitted depreciation expenses for the first control period i.e. FY 2012-13 to FY 2015-16 as mentioned in below table:



Table 38: Depreciation(Rs.Cr) as submitted by the Petitioner for FY 2012-13 to FY 2015-16(Rs.Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Depreciation	70.39	65.58	53.03	35.27

5.51 The Petitioner has submitted that the depreciation for the First Control Period of FY 2012-13 to FY 2015-16 has been computed based on the asset classification, cost of acquisition and additional capitalization of assets during the Control Period.

Commissions Analysis

5.52 The Commission refers to Regulation 6.8 and Regulation 6.9 of the Generation Tariff Regulations 2010 which specifies:

“6.8 The Commission shall review the actual capital investment at the end of each year of the Control Period as a part of the Annual Performance Review of the Generating Company. The Generating Company shall submit the actual capital expenditure incurred along with the Annual Performance Review Filing

6.9 The Commission shall not revisit the approved Capital Investment Plan during the Control Period and any adjustment to depreciation, interest on working capital and return on equity for the actual capital investment undertaken vis-à-vis approved capital investment shall be done at the end of the Control Period.”

5.53 Regulation 6.14 of the Generation Tariff Regulations 2010 specifies that -
“(b) at the end of the control period –

- i. *the Commission shall review actual capital investment vis-à-vis approved capital investment.*
- ii. *depreciation and financing cost, which includes cost of debt including working capital (interest), cost of equity (return) shall be trued up on the basis of actual/audited information and prudence check by the Commission.”*

5.54 The Commission has reviewed the depreciation details submitted by the Petitioner and has also checked the audited accounts of FY 2012-13 to FY 2015-16. The Auditor has specifically highlighted the following in the audited accounts under note 9:

“The company had neither conducted the physical verification of Fixed Assets nor has it conducted a technical review of the physical damage if



any to the fixed assets during the year and as such the company has not identified impairment if any w.r.t its fixed assets.”

5.55 Since, there is no verification and reconciliation of the Fixed assets, the Commission is not inclined to accept the Fixed Asset schedule and depreciation submitted by the Petitioner along with the Petition.

5.56 The Commission reviewed the methodology adopted for the calculation of depreciation in the audited accounts. The following is mentioned in the audited accounts of FY 2012-13 to FY 2015-16 under heading H as follows:

- a. *Depreciation is charged on straight line method as per rates prescribed by Government of India, Department of Power, New Delhi vide notification No. S.O. 93 E, dated 23.01.1992 [as amended by Notification No. 151 dated 29.03.1994 & L-7/25(5)/2003- CERC dated 26th of March 2004], and 2nd amendment by Central Electricity Regulatory Commission, New Delhi vide Notification No. 7/145(160)/2008-CERC dated 19th January 2009 and same has been notified by the JSERC vide notification no. 590, JSERC (Terms and Condition of Determination of generation tariff) Regulation, 2010 dated 27th Oct 2010, issued under the Electricity (Supply) Act, 2003 which are applicable to the generating stations.*
- b. *...Further assets purchased/ capitalized on or after 01.11.2010 is being depreciated upto 70% at prescribed rate and balance 20% after keeping 10% salvage value is charged in equal instalments for remaining life of the assets as per Notification No. 590, JSERC (Terms and Conditions of Determination of generation tariff) Regulation, 2010 dated 27th Oct, 2010”*

5.57 As per the above paragraph it is evident that the value of depreciation mentioned in the audited accounts is as per the JSERC Generation Tariff Regulations 2010.

5.58 Hence for the first control period, i.e. FY 2012-13 to FY 2015-16, the



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Commission is approving the depreciation as per audited accounts as submitted by the Petitioner which is mentioned in the table below:

Table 39 Depreciation(Rs.Cr) as approved by the Commission for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Depreciation (Rs.Cr)	70.39	65.57	53.03	35.26

Interest on Debt

Petitioners Submission

5.59 The Petitioner has submitted the interest & finance charges for the first control period i.e. FY 2012-13 to FY 2015-16 as per the below table: -

Table 40: Interest on loan(Rs.Cr) as submitted by the Petitioner for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Interest on Loan(Rs.Cr)	99.38	99.48	102.23	103.13

5.60 The Petitioner has also submitted that it is difficult for TVNL to service its debt timely due to delayed and partial payments being made by JBVNL. As on 31st March 2016, JBVNL owes TVNL cumulative dues of Rupees Three Thousand Eighty-Two Crores Seventy-One Lakhs only i.e., INR 3,082.71 Crores. Due to late payment of dues by JBVNL to TVNL, debt could not be serviced timely in the past and hence in the First Control Period of FY 2012-13 to FY 2015- 16 TVNL had to pay penalties along with the Interest on Loan.

Commissions Analysis

5.61 Regulation 6.14 of Generation Tariff Regulations 2010 specifies that financing cost, which includes cost of debt including working capital (interest), cost of equity (return) shall be trued up on the basis of actual/audited information and prudence check by the Commission at the end of the control period.

5.62 The Commission, upon prudence check of the audited accounts, finds



that the Petitioner had availed loan from Government of Jharkhand, Government of Bihar and had liability to vendors of BSEB all of which had been included under long term borrowing.

5.63 The Commission, upon scrutiny of the audited accounts under note:4 long term borrowing has quoted the comments as mentioned below:

- *The Govt. of Jharkhand had Sanctioned a sum of Rs. 27 crores for completion of balance work of MGR Systems, which was paid in 3 installments and a sum of Rs. 30 crores for capital overhauling of TTPS Plant, which was paid in 2 installments. The rate of interest on loan & penal interest was 13% and 2.5% respectively. The loan was repayable in 10 equal instalments; however, the installment payments is pending since its due date.*
- *The Govt. of undivided Bihar had Sanctioned a sum of Rs. 608 crores for construction of 2 x 210 M.W. TTPS Units which was paid in 28 instalments. The rate of interest on loan & penal interest was 13% and 2.5% respectively. The loan was repayable in 10 equal installments; however, the instalment payments is pending since its due date.*
- *The expenditures incurred prior to 01.04.1988 by the Bihar State Electricity Board and transferred to TVNL amounting to Rs.168.40 crores have been shown as BSEB Vendor's Account under Unsecured Loans. Interest has not been provided on BSEB vendors Account.*

5.64 As per the above paragraph it is evident that the installment of payment of loans as availed by TVNL has been pending since their due date i.e. no payment has been made in this regard. The provision for interest on the above loans is made at interest rate of 13%. Also, a provision for penal interest at 2.5% is kept in the accounts.

5.65 Since, no installments have been paid as per the audited accounts, the



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Commission has not approved the entire interest value as claimed by the Petitioner at the interest rate of 13%. Since the Petitioner currently does not have any loans, the Commission for the True-up of FY 2012-13 to FY 2015-16 is following the approach taken in the previous tariff order and is approving the interest on loan on normative basis as per the below table:

Table 41 Interest on Loan(Rs.Cr) as approved by the Commission for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2013-14	FY 2015-16
Opening Balance	540.99	470.72	405.72	448.27
Addition	0.12	0.57	95.57	0.88
Repayment	70.39	65.57	53.03	35.26
Closing Balance	470.72	405.72	448.27	413.88
Average Loan	505.85	438.22	426.99	431.07
Rate of Interest	13.00%	13.00%	13.00%	13.00%
Interest Amount(Rs.Cr)	65.76	56.97	55.51	56.04

Return on Equity

Petitioners Submission

5.66 The Petitioner has submitted return on equity for the first control period i.e. FY 2012-13 to FY 2015-16 as per details mentioned in table below:

Table 42 Return on Equity(Rs.Cr) as submitted by the Petitioner for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Return on Equity(Rs.Cr)	25.39	25.42	28.61	31.82

5.67 The Petitioner has also submitted that since there is no income tax paid by the petitioner during the First Control Period of FY 2012-13 to FY 2015-16, the post-tax rate of equity has been considered.

Commissions Analysis

5.68 The Commission referring to Regulation 6.14 of Generation Tariff Regulations 2010 which specifies that the financing cost, inclusive of the cost of debt which in turn includes working capital (interest), cost of equity (return) shall be trued up on the basis of actual/audited

information and a prudence check by the Commission at the end of the control period.

- 5.69 The Commission has scrutinized and verified the documents submitted by the Petitioner and accordingly, the Commission approves Return on Equity as per the details mentioned in the below table:

Table 43 ROE(Rs.Cr) as approved by the Commission for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY2015-16
Opening Balance	163.81	163.86	164.11	205.07
Addition	0.05	0.25	40.96	0.38
Closing Balance	163.86	164.11	205.07	205.44
Average	163.84	163.98	184.59	205.25
Rate of Equity	15.50%	15.50%	15.50%	15.50%
ROE(Rs.Cr)	25.39	25.42	28.61	31.81

Cost of Secondary Fuel Oil

Petitioners Submission

- 5.70 The Petitioner has made the following submissions with respect to the cost of secondary fuel for the period FY 2012-13 to FY 2015-16 as mentioned in the table below:

Table 44 Cost of Secondary fuel oil(Rs.Cr) as submitted by the Petitioner for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Gross Generation(MUs)	2922	2256	2380	2636
Specific Oil Consumption(ml/kWh)	1.61	1.88	1.49	1.15
Cost of oil(Rs./Ltr)	61913	63866	61581	44995
Oil Consumption(KL)	4729	4138	3307	3039
Total Cost of Oil(Rs.Cr)	29.28	26.43	20.37	13.67

Commission's Analysis

- 5.71 The Commission, upon verifying the details submitted by the Petitioner, has found that the Petitioner has not used the methodology specified in the Regulation 7.49 of the Generation Tariff Regulations, 2010 for calculating the cost of secondary fuel.
- 5.72 The Commission has approved the cost of secondary fuel oil in



accordance with Regulation 7.49, Regulation 7.50 and Regulation 7.51 of the Generation Tariff Regulations, 2010:

“7.49 Expenses on secondary fuel oil in Rupees shall be computed corresponding to normative secondary fuel oil consumption (SFC) specified in clause 8.4, 8.6 of these Regulations, in accordance with the following formula:

$$= SFC \times LPSFi \times NAPAF \times 24 \times NDY \times IC \times 10$$

*Where, SFC – Normative Specific Fuel Oil consumption in ml/kWh
LPSFi – Weighted Average Landed Price of Secondary Fuel in Rs./ml considered initially*

NAPAF – Normative Annual Plant Availability Factor in percentage

NDY – Number of days in a year

IC - Installed Capacity in MW

7.50 Initially, the landed cost incurred by the Generating Company on secondary fuel oil shall be taken based on actuals of the weighted average price of the three preceding months and in the absence of landed costs for the three preceding months, latest procurement price for the generating station, before the start of the year.”

7.51 The secondary fuel oil expenses shall be subject to fuel price adjustment at the end of each year of Control period as per following formula: = SFC x NAPAF x 24 x NDY x IC x 10 x (LPSFy – LPSFi)

Where, LPSFy - Weighted average landed price of secondary fuel oil for the year in Rs. /ml

- 5.73 The consumption of Secondary Fuel Oil has been calculated considering the gross generation corresponding to the NAPAF (i.e. 85%) and Specific Normative Fuel Oil Consumption (i.e. 1 ml/kWh). The landed price of the Secondary Fuel Oil has been computed considering the audited data submitted by the Petitioner, considering the quantity and price of the secondary fuel used.



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Table 45 Expense on Secondary fuel oil(Rs.Cr) as approved by the Commission for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Expenses on Secondary fuel(Rs.Cr)	18.09	14.41	14.66	11.86

Interest on Working Capital

Petitioners Submission

5.74 The Petitioner while computing the working capital and Interest thereon as per the Generation Tariff Regulations, 2010 has considered the working capital as the sum of the following:

- a) 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.
- b) 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.
- c) Maintenance spares @ 20% operation and maintenance expenses.
- d) Operation and maintenance expenses for 1 month.
- e) Receivables equivalent to 2 months of capacity and energy charges from sale of electricity calculated on the NAPAF.

5.75 The petitioner has considered rate of interest for calculating the interest on working capital at the prevalent SBI PLR rate, i.e. 14.75%.

5.76 Interest on Working Capital, as submitted by the Petitioner for FY 2012-13 to FY 2015-16 is given as per table below:



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Table 46: Interest on working capital (Rs.Cr) as submitted by the Petitioner for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Cost of coal for 45 days considering NAPAF	48.94	34.38	45.86	61.72
Cost of secondary fuel oil for two months	4.88	4.41	3.40	2.28
O&M expenses for 1 month	11.86	12.83	13.87	15.01
Maintenance Spares @20% of O&M expenses	28.47	30.79	33.30	36.02
2 months receivables (capacity & energy charges @NAPAF)	134.60	107.40	121.70	147.80
Working capital requirement	228.75	189.81	218.13	262.83
Interest rate applicable	14.75%	14.75%	14.75%	14.75%
IOWC(Rs.Cr)	33.74	28.00	32.17	38.77

Commission's Analysis

5.77 The Commission upon referring to Regulation 6.14 of Generation Tariff Regulations 2010 which specifies that the financing cost, which includes the cost of debt, including working capital (interest), cost of equity (return) shall be trued up on the basis of actual/audited information and a prudence check by the Commission at the end of the control period.

5.78 Regulation 7.38 of Generation Tariff Regulations 2010 specifies that:

“7.38 Rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on April 1, 2011 or April 1 of the year in which the generating station or a unit thereof, is declared under commercial operation, whichever is later during Transition period. During Control Period rate of interest on working capital shall be on normative basis



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and shall be equal to the short-term Prime Lending Rate of State Bank of India as on April 1, 2012 or April 1 of the year in which the generating station or a unit thereof, is declared under commercial operation.”

5.79 Accordingly, the Commission after scrutinizing the information’s and documents submitted by the Petitioner and after prudence check of the audited data and as per Generation Tariff Regulations 2010, has approved interest on working capital for the first control period i.e. FY 2012-13 to FY 2015-16 as per below table:

Table 47: Interest on working capital(Rs.Cr) as approved by the Commission for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Cost of coal for 45 days considering NAPAF	47.15	33.18	41.02	53.76
Cost of secondary fuel oil for two months	3.02	2.40	2.44	1.98
O&M expenses for 1 month	8.20	9.67	10.44	14.37
Maintenance Spares @20% of O&M expenses	19.67	23.21	25.05	34.49
2 months receivables (capacity & energy charges @NAPAF)	118.40	92.20	106.29	137.58
Working capital requirement	196.44	160.66	185.24	242.17
Interest rate applicable	14.75%	14.45%	14.75%	14.75%
IOWC(Rs.Cr)	28.97	23.22	27.32	35.72

Non-Tariff Income

Petitioners Submission

5.80 The Petitioner has submitted the non-tariff income for the first control period i.e. FY 2012-13 to FY 2015-16 as per details mentioned in the table below:

Table 48 Non-Tariff Income(Rs.Cr) as submitted by the Petitioner for FY 2012-13 to FY 2015-16

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Non-Tariff Income(Rs.Cr)	30.17	32.59	35.70	34.63



Commissions Analysis

5.81 The Commission has scrutinized the non-tariff income of the Petitioner from the audited annual accounts and has found that it is accrued through various income sources including sale of tender paper, rent received, interest on fixed deposits, miscellaneous receipts etc. The major contribution is from interest on fixed deposits.

5.82 The Commission approves the Non-Tariff income for the first control period i.e. FY 2012-13 to FY 2015-16 as per audited accounts submitted by the Petitioner as below:

Table 49 Non-Tariff Income (Rs.Cr) approved by the Commission for FY 2012-13 to FY 2015-16.

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Non-Tariff Income(Rs.Cr)	30.17	32.59	35.70	34.63

Revenue from Sale of Power

Petitioners Submission

5.83 The Petitioner has submitted revenue from sale of power for the first control period i.e. from FY 2012-13 to FY 2015-16 as mentioned in the table below:

Table 50 Revenue from sale of power(Rs.Cr) for the first control period as submitted by Petitioner

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Revenue from Sale of Power (Rs.Cr)	810.84	481.28	692.24	815.03

Commissions Analysis

5.84 The Commission approves the revenue for sale of power for the first control period i.e. from FY 2012-13 to FY 2015-16 as per the audited report submitted by the Petitioner as below:



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Table 51 Revenue approved by the Commission from sale of power for FY 2012-13 to FY 2015-16 (Rs.Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Revenue from Sale of Power(Rs.Cr)	810.84	481.28	692.24	815.03



Summary of Fixed Cost Determinants & Annual Revenue Requirement

- 5.85 Regulation 8.2 of the Generation Tariff Regulations, 2010 states that the annual fixed cost of a thermal generating station shall consist of the following:
- a) Return on Equity;
 - b) Interest and Financing Charges on Loan Capital;
 - c) Depreciation;
 - d) Operation and Maintenance Expenses;
 - e) Interest Charges on Working Capital; and
 - f) Cost of Secondary Fuel Oil.
- 5.86 The Commission, after due diligence and prudence check of the documents and information's submitted by the Petitioner approves the fixed cost determinant of the plant for the first control period i.e. from FY 2012-13 to FY 2015-16 in terms of the Petitioner's submission and the approval granted by the Commission as mentioned in the following table:

TVNL - Order on True-up for FY 2012-13 to FY 2015-16



Table 52 Summary of ARR & Fixed cost approved by the Commission for the first control period (Rs.Cr.)

Particulars	FY 2012-13			FY 2013-14			FY 2014-15			FY 2015-16		
	MYT	Petition	Approved	MYT	Petition	Approved	MYT	Petition	Approved	MYT	Petition	Approved
Employee Expense including Terminal Liability	31.57	31.57	42.98	33.84	33.84	44.68	36.30	36.30	51.83	38.97	38.97	76.97
A&G Expense	18.97	18.97	13.18	20.56	20.56	14.85	22.29	22.29	14.89	24.17	24.17	16.33
R&M Expense	91.82	91.82	42.20	99.54	99.54	56.51	107.90	107.90	58.54	116.97	116.97	79.14
O&M Expense	142.36	142.36	98.36	153.94	153.94	116.04	166.49	166.49	125.26	180.11	180.11	172.44
Depreciation	69.68	70.39	70.39	70.44	65.58	65.57	70.92	53.03	53.03	71.52	35.26	35.26
Interest on loans	65.72	99.38	65.76	57.93	99.48	56.97	49.93	102.23	55.51	41.71	103.13	56.04
Return on Equity	26.56	25.39	25.39	27.28	25.42	25.42	27.85	28.61	28.61	28.37	31.82	31.81
Cost of Secondary fuel oil at Normative Availability	18.71	29.30	18.09	18.71	26.40	14.41	18.71	20.40	14.66	18.76	13.70	11.86
Interest on working capital	29.90	33.74	28.97	29.82	28.00	23.22	29.80	32.17	27.32	29.87	38.77	35.72
Total Fixed Cost	352.93	400.57	306.97	358.12	398.81	301.62	363.70	402.94	304.39	370.34	402.78	343.13
PAF based Incentive/(Disincentive)	-	16.73	12.81	-	(22.83)	(17.26)	-	(24.14)	(18.24)	-	11.19	9.56
Non-Tariff Income	16.91	30.17	30.17	16.91	32.59	32.59	16.91	35.70	35.70	16.91	34.63	34.63
Annual Fixed Charge	336.02	387.12	289.61	341.21	343.40	251.76	346.79	343.10	250.45	353.43	379.34	318.03
Total Energy Charges	345.02	408.10	382.46	328.95	282.2	276.51	312.89	388.36	332.76	297.67	498.14	437.23
Annual Revenue Requirement	681.05	795.22	672.07	670.16	625.60	528.28	659.67	731.46	583.21	651.10	877.48	755.26



Chapter 6: Gap/(Surplus) for FY 2012-13 to FY 2015-16

Petitioners Submission

6.1 The Petitioner has submitted Gap/(Surplus) for the first control period i.e. FY 2012-13 to FY 2015-16 as per below table:

Table 53 Gap/(Surplus) as submitted by the Petitioner for the first control period (Rs.Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Gap/(Surplus) for the year	(15.62)	144.19	39.17	62.49
Carrying cost	(24.15)	201.83	49.11	69.12
Total revenue gap/(surplus)	(39.77)	346.03	88.28	131.61
Total revenue gap/(surplus) for the control period	526.15			

Commissions Analysis

6.2 Regulation 6.16 to Regulation 6.18 of the Generation Tariff Regulations 2010 specify the following:

“Refund of Excess Amount

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.”

6.3 The Commission after consideration of total fixed cost and total energy charges as approved with respect to revenue realized by the Petitioner has calculated and approved the gap/(surplus) for FY 2012-13 to FY 2015-16 as mentioned in table below:

Table 54 Gap/(Surplus) as approved by the Commission for the first control period i.e. FY 2012-13 to FY 2015-16(Rs.Cr)

Particulars	FY 2012-13	FY2013-14	FY 2014-15	FY2015-16
ARR	672.07	528.28	583.21	755.26
Revenue	810.84	481.28	692.24	815.03
Opening Gap/(Surplus)	49.12	(92.64)	(55.64)	(180.91)
Addition during the FY	(138.77)	46.99	(109.03)	(59.77)
Closing Gap/(Surplus)	(89.65)	(45.64)	(164.67)	(240.68)
Average Gap/(Surplus)	(20.26)	(69.14)	(110.15)	(210.80)
Interest Rate	14.75%	14.45%	14.75%	14.75%
Carrying Cost for respective Financial Year	(2.99)	(9.99)	(16.25)	(31.09)
Gap/(Surplus) inclusive of Carrying Cost	(92.64)	(55.64)	(180.91)	(271.77)

6.4 The Petitioner is directed to comply as per the provisions given in Regulation 6.16 to Regulation 6.18 of the Generation Tariff Regulations 2010.



Chapter 7: DIRECTIVES

Residual Life Assessment of the plant.

7.1 The Commission emphasizes the urgency of the situation by directing the Petitioner to submit RLA report for both the units of the plant at the earliest as the plant has already exhausted its useful life of 25 years.

Filing of True Up Petition for the second control period i.e. FY 2016-17 to FY 2020-21

7.2 The Commission directs the Petitioner to submit true up petition for the second control period with respect to audited accounts for FY 2016-17 to FY 2020-21 within two months from the date of issue of the order.

Improvement in performance of Operational parameters

7.3 The Commission notes with concern that the operational performance of the Petitioner is very low. In particular, the SHR and PLF can be improved further to the extent of approved operational norms. The Commission directs the petitioner to submit an improvement plan for both its units within three months of the issue of this order.

Ash Utilization & Management

7.4 The Commission has observed that the Petitioner has not mentioned regarding ash utilization and its management which can be looked upon as a source of revenue. Moreover, Ministry of Environment, Forest and Climate Change on 31st December 2021 has notified the norms for fly ash utilization by coal fired power plants. In this regard the Commission directs the Petitioner to submit information of the existing practice adopted by the Petitioner.



This Order is signed and issued by the Jharkhand State Electricity Regulatory Commission on December 14th, 2023.

Date: 14.12.2023

Place: Ranchi

Sd/- (Atul Kumar)	Sd/- (Mahendra Prasad)	Sd/- (Justice Amitav Kr. Gupta)
MEMBER (Technical)	MEMBER (Legal)	Chairperson



Chapter 8: ANNEXURE

List of members of public who participated in the Public hearing held on 27th September 2023 at TVNL Lalpania.

Sr. No.	Name	Address/Organization
1	Masum Ansari	Bank More, TTPS, Lalpania
2	Sameer Kumar	JBVNL, Tenughat
3	Rajeev Kumar Agrawal	TTPS Colony
4	Bhaskar Kumar	TTPS Lalpania
5	Rajesh Kumar Kesku	TTPS Lalpania
6	Gulam Mustafa	Godra (Mahaautond)
7	Kishor Kumar Nayak	TTPS Lalpania
8	Mitan Sameer	Lalpania
9	Narendra Minz	JBVNL, Gomia
10	Rajan Kumar Yadav	JBVNL, Gomia
11	Sarvesh Prasad	TTPS Lalpania
12	Gulab Chand Hansda	D/10/59 TTPS Lalpania
13	Abhishek Kumar	TTPS Lalpania
14	Jay Govind Kumar	Lalpania
15	Deo Kishun Manjhi	Lalpania(Kodwatand)
16	Rajeev Kumar	Lalpania
17	Dharmendra Kumar	Lalpania
18	S.R. Singh	TVNL
19	V.K. Choudhary	TVNL
20	Imroz Alam	TVNL
21	Nurul Hoda	Bariatu, Ranchi
22	Nitish Kumar	Ranchi
23	Kapil Deo Singh	TTPS Lalpania
24	Ajay Kumar Pandey	TTPS Lalpania
25	Niraj Kumar	TTPS Lalpania
26	Rajesh Singh	Kaju
27	Ashish Kumar Sharma	TTPS Lalpania
28	Koleshwar Mahto	Chorgawa
29	Bira Manjhi	Kushmando, Lalpania
30	Ratixa Manjhi	Sadak tola, Lalpania
31	Shayamal Marandi	TTPS Lalpania
32	Dhuma Turi	Kasiadih