

Jharkhand State Electricity Regulatory Commission



Order on
Petition for Business Plan and Multi Year Tariff
for the period FY 2021-22 to FY 2025-26,
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	Millilitre
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.: 11 of 2022

In the matter of:

Petition for

Business Plan and MYT Petition for the Control Period (FY 2021-22 to FY 2025-26) for 2x210 MW Tenughat TPS of Tenughat Vidyut Nigam Limited (TVNL).

In the matter:

Tenughat Vidyut Nigam Limited

Hinoo, Doranda, Ranchi-

834002..... **Petitioner**

PRESENT

Hon'ble Justice Amitav Kumar Gupta

Chairperson

Hon'ble Mr. Mahendra Prasad

Member(Legal)

Hon'ble Mr. Atul Kumar

Member(Technical)

Order dated

14th December, 2023

Tenughat Vidyut Nigam Limited (hereinafter referred to as 'TVNL' or 'thePetitioner') has filed the Petition dated November 17th , 2021 for approval of Business Plan and Multi Year Tariff for the third control period i.e. FY 2021-22 to FY 2025-26.

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 as detailed below:

- 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.

Petitioner's Prayer

1.11 The Petitioner in the Filing of Petition for MYT of the third control period i.e. FY 2021-22 to FY 2025-26 has prayed before the Commission:

- a) To admit this MYT Petition for Control Period FY 2021-22 to FY 2025-26.
- b) To approve Revenue Requirement and Capital Expenditure for MYT Control Period FY 2021-22 to FY 2025-26.
- 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 consider special allowance for Unit-I from FY 2022-23 onwards and for Unit-II from FY 2023-24 onwards.
- f) To condone the delay in filing this Petition.
- g) To grant any other relief as the Hon'ble Commission may consider appropriate.
- h) 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.

- i) 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.
- j) 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.

Chapter 2: PROCEDURAL HISTORY

Background

- 2.1 The Commission had passed Tariff Order of TVNL for FY 2004-05 on 23.08.2004.
- 2.2 On March 30,2006, the Commission had passed 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 passed the Tariff Order on ARR and Determination of Generation Tariff for FY 2008-09 & 2009-10 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 Financial Years FY 2009-10 & 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 Financial Years FY 2010-11 & 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 2015-16 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 The Commission had passed Order on True Up Petition of TVNL for the second control period i.e. FY 2012-13 to FY 2015-16 on 14.12.2023.

- 2.12 In the instant petition, the Petitioner has sought approval for Business plan and Multiyear tariff for FY 2021-22 to FY 2025-26.

Information Gaps in the Petition

- 2.13 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:11 of 2022/209 dated 14.10.2022.
- 2.14 In response, the Petitioner has furnished additional data/information to the Commission vide letter no: Ref 1095/22-23 dated 23/12/2022.
- 2.15 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.
- 2.16 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 8th of April 2023.

Inviting Public Comments/Suggestions

- 2.17 On scrutiny of the Petition, the Commission 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.
- 2.18 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	12.01.2023 & 13.01.2023
Hindustan Times	English	12.01.2023 & 13.01.2023
Prabhat Khabar	Hindi	12.01.2023 & 13.01.2023
Times of India	English	12.01.2023 & 13.01.2023

2.19 Further, the Commission had also published the same in various newspapers as mentioned in the table below and had also organized a Public Hearing on April 8th, 2023 where an additional opportunity was provided to all the Stakeholders to submit their comments/suggestions on the above said Petition. The details of the 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	01.04.2023 & 07.04.2023
Dainik Bhaskar	Hindi	01.04.2023
Hindustan Dainik	Hindi	07.04.2023
The Times of India	English	01.04.2023 & 07.04.2023
The Hindustan Times	English	01.04.2023 & 07.04.2023

Submission of Comments/Suggestions and Conduct of Public Hearing

2.20 Comments/Suggestions on the Petition were received from various Stakeholders. The Comments/Suggestions of the Public, Petitioner's Responses and Commission's views thereon are detailed in **Chapter 4** of this Order.

Chapter 3: BRIEF FACTS OF THE PETITION

Business Plan and Capital Investment Plan for the control period FY 2021-22 TO FY 2025-26.

Capital Expenditure and Capitalization

- 3.1 The Petitioner has submitted regulatory provisions for capital investment plan as per Clause 6.6 (a) and 6.7 of the Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Generation Tariff) Regulations, 2020 which states that:

“6.6 The Business Plan shall be for the entire Control Period and shall inter-alia Contain:- a) Capital Investment Plan: The Generating Company shall submit the Capital Investment Plan for the entire Control Period, detailing the investments planned by the Generating Company along with the corresponding capitalization schedule and financing plan. This Plan shall also include capacity enhancement plan, if any, and proposed efficiency improvements and its cost benefit analysis. It shall also submit plant-wise details of Capital Structure and cost of Financing (interest on Debt) and return on equity, after considering the existing market conditions, terms of the existing loan agreements, risk associated in generating business and creditworthiness;

6.7 The Generating Company shall file for the Commission’s approval a Capital Investment Plan for the entire Control Period along with the Business Plan. The Capital Investment Plan shall be prepared scheme-wise and each scheme shall include: -

- 1. Purpose of investment;*
- 2. Approval of Competent Authority;*
- 3. Detailed Project Report;*
- 4. Capital Structure;*
- 5. Capitalisation Schedule;*
- 6. Implementation schedule including timelines;*
- 7. Cost-benefit analysis& Rate reasonability;*
- 8. Improvement in operational efficiency envisaged in the Control Period;*
- 9. On-going schemes that will spill over into next financial year under review along with justification;*
- 10. New schemes that will commence during the Control Period but may be completed within or beyond the Control Period”.*

- 3.2 The Petitioner has also mentioned that as per Regulation 14.11 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations,

2020 a generating company may opt to avail a special allowance for meeting the requirement of expenses including R&M beyond the Useful Life of the generating station or a Unit thereof, and in such an event revision of the capital cost shall not be allowed and the applicable operational norms shall not be relaxed but the special allowance shall be included in the annual fixed cost.

- 3.3 The Petitioner has submitted that Unit-I is completing 25 years in FY 2021-22 and Unit-II is reaching its age of 25 years in FY 2022-23. TVNL has decided to opt special allowance for Unit-I from FY 2022-23 onwards and for Unit-II from FY 2023-24 as per Regulation 14.12 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2020. From these years, TVNL is not requesting any capex/capitalization towards renovation & modernization.
- 3.4 Additionally, in order to achieve revised emission norms for coal based power plants as issued by MoEFCC; TVNL also proposes installation of FGD, D-NOx and ESP systems as per Regulation 14.13 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2020. These expenditures are due to change in law and hence should not be regarded as Renovation & Modernization capex and hence can be availed along with special allowance.
- 3.5 In line with specified provisions of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2020, the Petitioner has submitted a detailed Capital Investment Plan and Capitalization schedule for MYT control period for FY 2021-22 to FY 2025-26 as tabulated below:

Table 3 Summary of Capital Investment Plan(Rs.Cr) as projected by the Petitioner for FY 2021-22 to FY 2025-26.

Particulars	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Control & Instrumentation (C&I)	27.14	1.48	-	-	-
Information Technology (IT)	0.37	4.50	-	-	-
Electrical Maintenance (EM-I)	15.62	3.12	-	-	-
Electrical Maintenance (EM-II)	4.48	6.18	-	-	-
Turbine	4.86	21.26	-	-	-

Maintenance (TMD)					
Boiler Maintenance (BMD)	4.11	6.25	-	-	-
Coal Handling Plant (CHP-I)	5.25	1.80	-	-	-
Coal Handling Plant (CHP-II)	-	0.35	-	-	-
Operation (OPN)	-	0.28	-	-	-
Civil	4.41	2.20	-	-	-
Environmental Management Group (EMG)	29.65	20.10	67.70	50.10	68.10
Total	95.89	67.50	67.70	50.10	68.10

Table 4 Summary of Capitalization schedule(Rs.Cr) submitted by Petitioner for FY 2021-22 to FY 2025-26

Particulars	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Control & Instrumentation (C&I)	27.14	1.48	-	-	-
Information Technology (IT)	0.37	4.50	-	-	-
Electrical Maintenance (EM-I)	15.62	3.12	-	-	-
Electrical Maintenance (EM-II)	4.48	6.18	-	-	-
Turbine Maintenance (TMD)	4.86	21.26	-	-	-
Boiler Maintenance (BMD)	4.11	6.25	-	-	-
Coal Handling Plant (CHP-I)	5.25	1.80	-	-	-
Coal Handling Plant (CHP-II)	-	0.35	-	-	-
Operation (OPN)	-	0.28	-	-	-
Civil	4.41	2.20	-	-	-
Environmental Management Group(EMG)	14.83	18.95	45.81	49.38	106.69
Total	81.07	66.35	45.81	49.38	106.69

3.6 The Petitioner has also submitted human resource plan as per sub clause (c) of Regulation 6.6 of JSERC Generation Tariff Regulations,2020 which is being reproduced as follows:

“c) Human Resource Plan: Human Resource Plan with manpower planning including details of the estimated year wise manpower addition and retirements for the Control Period to run the power plant efficiently and effectively;”

3.7 Accordingly, the Petitioner has provided details of manpower to retire in the next control period i.e. FY 2021-22 to FY 2025-26 as follows:

Table 5 Details of manpower to retire in the next control period as submitted by the Petitioner for FY 2021-22 to FY 2025-26

Retirement		FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26	Total
Technical Stream	C.E	0	1	0	0	0	1
	E.S.E	0	0	0	1	0	1
	E.E	1	0	1	1	4	7
Non-Technical	C.E	0	0	3	3	5	11
	E.S.E	0	1	0	0	0	1
	E.E	0	0	0	0	0	0
HR	HR Posts	0	2	2	2	2	8
Finance	Finance Posts	2	0	0	0	0	2

ARR for 3rd MYT control period (i.e. FY 2021-22 to FY 2025-26)

3.8 The summary of operational parameters, as submitted by the Petitioner for both the units of the project for the period FY 2021-22 to FY 2025-26 is as follows:

Table 6 Operational Parameters for FY 2020-21 to FY 2025-26 as submitted by the Petitioner

Particulars	UoM	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
PAF	%	85%	85%	85%	85%	85%
PLF	%	85%	85%	85%	85%	85%
Aux Power Consumption	%	9.5%	9.5%	9.5%	9.5%	9.5%
Station Heat Rate	Kcal/kWh	2503	2503	2503	2503	2503
Secondary Fuel Consumption	ml/kWh	1	1	1	1	
Transit Loss	%	0.8%	0.8%	0.8%	0.8%	0.8%
Gross Generation	MUs	3127.32	3127.32	3127.32	3127.32	3127.32

Aggregate Revenue Requirement (ARR)

3.9 The summary of Annual Revenue Requirement (ARR) & Energy Charge Rate, as submitted by the Petitioner for both the units of the project for the period FY 2021-22 to FY 2025-26, are as follows:

Table 7 Summary of Annual Fixed cost(Rs.Cr) as projected by the Petitioner for FY 2021-22 to FY 2025-26

Particulars	FY21-22	FY22-23	FY23-24	FY24-25	FY25-26
O&M Expenses	269.82	288.45	307.54	326.60	347.29
Depreciation	7.15	15.26	22.72	28.61	36.02
Interest on normative loan	20.80	24.60	26.50	27.22	29.32
Interest on long term loan	103.21	103.21	103.21	103.21	103.21
Return on Equity	29.84	32.93	35.29	37.29	40.56
Special Allowance	0.00	19.95	39.90	39.90	39.90
Water Charges	12.00	12.00	12.00	12.00	12.00
Interest on Working Capital	40.16	41.68	43.17	44.24	45.46
Total Fixed Cost	482.99	538.09	590.33	619.07	653.76

Table 8 Energy Charge Rate(Rs/kWh) as projected by the Petitioner for FY 2021-22 to FY 2025-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Capacity(MW)	420	420	420	420	420
PLF(%)	85%	85%	85%	85%	85%
Gross Generation(MUs)	3127.32	3127.32	3127.32	3127.32	3127.32
Auxiliary Consumption(%)	9.5%	9.5%	9.5%	9.5%	9.5%
Net Generation(MUs)	2830.22	2830.22	2830.22	2830.22	2830.22
Station Heat Rate(Kcal/kWh)	2503	2503	2503	2503	2503
Secondary fuel oil consumption (ml/kWh)	1	1	1	1	1

Gross Calorific value of coal(kcal/kg)	3668.15	3668.15	3668.15	3668.15	3668.15
Gross Calorific value of oil(Kcal/Kl)	9359	9359	9359	9359	9359
Total heat required(kcal)	7827681.96	7827681.96	7827681.96	7827681.96	7827681.96
Oil consumption(KL)	3127.32	3127.32	3127.32	3127.32	3127.32
Heat from oil (Kcal)	29268.59	29268.59	29268.59	29268.59	29268.59
Heat from coal(Kcal)	7798413.37	7798413.37	7798413.37	7798413.37	7798413.37
Transit Loss(%)	0.8%	0.8%	0.8%	0.8%	0.8%
Total Coal consumption including transit loss(MT)	2143122.95	2143922.95	2143122.95	2143122.95	2143122.95
Cost of oil(Rs/KL)	40083.17	40083.17	40083.17	40083.17	40083.17
Cost of coal(Rs./MT)	3349.81	3349.81	3349.81	3349.81	3349.81
Total cost of oil(Rs.Cr.)	12.54	12.54	12.54	12.54	12.54
Total cost of coal(Rs.Cr.)	717.91	717.91	717.91	717.91	717.91
Energy charge rate (Rs./kWh)	2.58	2.58	2.58	2.58	2.58

Chapter 4: PUBLIC CONSULTATION PROCESS

- 4.1 On the Petition submitted by the Petitioner, several Stakeholders have responded. A Public Hearing was held by the Commission in 8th April, 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 attached at **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 meaning to the petition have not been discussed in this Chapter.

Projections of the control period for FY 2021-22 to FY 2025-26 are based on provisional accounts.

Public Comments/Suggestions

- 4.3 Provisional accounts cannot provide the final values based on which the projections can be made. This may create inflated figures that cannot be relied upon. So, JSERC should insist on audited accounts from TVNL, in the absence of which, the capex should not be approved and passed on to the consumer.

Petitioner's Response

- 4.4 TVNL would like to humbly submit that the preparation of audited accounts for FY 2016-17, FY 2017-18 and FY 2018-19 were delayed due to Covid-19 pandemic and the same would be submitted to the Hon'ble Commission after finalization. TVNL shall also submit the True-up petition for these years based on the audited accounts.

Views of the Commission

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

Consideration of normative values of operational parameters as specified by the Commission for the forecast period.

Public Comments/Suggestions

- 4.6 The operational plan should have considered the actual values or the trend values for projected figures for the MYT control period of the future. The normative values can only be considered in case of absence of numbers in certain case. All-important parameters cannot be projected based on normative values only.

Petitioner's Response

- 4.7 Honorable JSERC has specified trajectory of operational parameters in JSERC Generation Tariff Regulations, 2020 for both units of TVNL. TVNL has considered the same for calculation of ARR and any underperformance or over performance with respect to the parameters shall be trued up at the end of the control period after considering due submission of the petitioner i.e. TVNL.

Views of the Commission

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

Transit loss of 0.8% to be considered

Public Comments/Suggestions

- 4.9 The transit loss of 0.8% for non-pit head based plants should be checked upon. The source of coal, distance and the medium of transportation should be the basic criteria while approving the transit loss amount. There must be third party inspection for this loss for prudence check by the commission.

Petitioner's Response

- 4.10 The railway line which is being currently used by TVNL to procure coal was operational on 28th October 2016 after TVNL had already submitted the MYT petition for the earlier control period. The Petitioner has been using the same to procure coal from the allocated mines located at a distance of 40-100 kms from the plant. Earlier, the same was made available to the plant via road. Hence, the transit loss has been considered as 0.8% for non-pit head generating plants which was in the earlier years considered as 0.2% for pithead generating plants.

Views of the Commission

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

Projected Energy Charges for FY 2021 22 and FY 2022-23 is shown as 2.61 Rs/kWh.

Public Comments/Suggestions

4.12 The Actual Energy Charge as raised to JBVNL by TVNL is Rs. 2.67/kWh for FY 2021-22 and Rs. 3.215/kWh for FY 2022-23.

Petitioner's Response

4.13 The calculation of ECR for FY 2021-22 and FY 2022-23, the first two years of the control period is based on base values of years FY 2019-20 and FY 2020-21 and escalation based on regulations. It does not take into account the actual variations in fuel charge which has been billed to TVNL. The amount of ECR billed to JBVNL for years FY 2021-22 and FY 2022-23 is based on actual amount of coal cost billed by coal generating companies to TVNL.

Views of the Commission

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

Special allowance for meeting the requirement of the expenses including R&M beyond the useful life of the plant

Public Comments/Suggestions

4.15 For special allowance, the useful life of the plant should have been 25 years after which that requires further R&M for operation. In this case of TVNL, it has claimed to have an useful life of 35 years as evident from its depreciation calculation. Also, TVNL does not propose any R&M work for the plant and the nature of work it is going to undertake to avail the special allowance. Only on the basis of approval from JSERC, claiming such an amount in the name of special allowance is not justified and should not be passed on to the consumer that increases the tariff of the end consumer without any basis.

Petitioner's Response

- 4.16 As per Regulation 14.11 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2020 a generating company may opt to avail a special allowance for meeting the requirement of expenses including R&M beyond the useful life of the generating station or a unit thereof, and in such an event revision of the capital cost shall not be allowed and the applicable operational norms shall not be relaxed but the special allowance shall be included in the annual fixed cost.
- a) TVNL Unit-I is completing 25 years in FY 2021-22 and Unit II is reaching its age of 25 years in FY 2022-23. TVNL has decided to opt special allowance for Unit-I from FY 2022-23 onwards and for Unit-II from FY 2023-24 as per Regulation 14.12 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2020. From these years, TVNL is not requesting any capex/capitalization towards renovation and modernization.
- b) Additionally, in order to achieve revised emission norms for coal based power plants as issued by MoEFCC, TVNL also proposes installation of FGD, D-NOx and ESP systems as per Regulation 14.13 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2020. These expenditures are due to change in law and hence should not be regarded as renovation and modernization capex and hence can be availed along with special allowance.

Views of the Commission

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

Business plan for the control period

Public Comments/Suggestions

- 4.18 The nature of capex proposed for TVNL is not elaborated enough with details. The details need proper verification and justification before passing on to the consumer.

Petitioner's Response

- 4.19 The Petitioner, TVNL referred to response as mentioned in clause 4.16.

Views of the Commission

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

Installing FGD, D-NOx and ESP systems as per Regulation 14.13 of JSERC (Terms & Conditions for Determination of Generation Tariff), Regulations 2020.

Public Comments/Suggestions

4.21 As per Regulation 14.13 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulation 2020, A Generating Company is required to incur additional capital expenditure in the existing generating station for compliance of the revised emission standards and shall share its proposal with the beneficiaries and file a Petition for undertaking such additional capitalization along with feasibility report and associated impact on Tariff before the Commission. JBVNL understands that, the above compliance has not been fulfilled by TVNL, hence, JBVNL is not aware of the excess expenditure to be passed on to the beneficiaries. Hence, the excess capital expenditure, as claimed by TVNL in Table 6 of Para 2.5.5 should not be approved.

JBVNL also understands that FGD is necessary to reduce NOx and other pollutants. However, the FGD system is valuable if implemented at initial stages of the plant and not necessarily at the fag end of the thermal plant. So, before any FGD implementation, its Cost implication vis-sa-vis benefit should be studied extensively. It is not beneficial for the plants nearing its end life. So, only in the name of EMG, this huge cost should not be passed on to the consumer.

Petitioner's Response

4.22 The Petitioner, TVNL referred to response as mentioned in clause 4.16.

Views of the Commission

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

Other Income of the Plant

Public Comments/Suggestions

4.24 Other income sources for MYT is not clear from the Petition.

Petitioners Response

- 4.25 TVNL would like to mention that the source of other income is interest received on deposits in the bank.

Views of the Commission

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

Currently the PAF is 69.6% and PLF is 60%

Public Comments/Suggestions

- 4.27 The Current parameters are way below the normative parameters considered for availing fixed cost of the plant. It should be based on the actual figures, and thus needs to be verified accordingly.

Petitioners Response

- 4.28 TVNL would like to submit that due to the back down of the plant and other uncontrollable factors, there has been a loss in gross generation which is reflected in the actual numbers for Plant Load Factor (%) during the last Control Period. Actual plant load factor is low because of partial load operation and backing down. TVNL also submits that frequent stop/start after reserve shutdown and running of units under backing down has affected the performance of the units. Hon'ble ISERC has specified trajectory of operational parameters in JSERC Generation Tariff Regulations 2020 for both units of TVNL. TVNL has considered the same for calculation of ARR and any underperformance or over performance with respect to the parameters shall be trued up at the end of the control period, after considering due submission of the petitioner i.e. TVNL.

Views of the Commission

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

Weighted average GCV of coal 3668 kCal/kg

Public Comments/Suggestions

4.30 This needs to be verified by the third party to ascertain the values of GCV.

Petitioners Response

4.31 TVNL has already submitted lab test reports of GCV of coal to the Hon'ble Commission for determination of weighted average GCV of the preceding three months leading up to the control period. The same has been used in calculation of ECR for the control Period FY 2021-22 to FY 2025-26.

Views of the Commission

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

Addition in ROE

Public Comments/Suggestions

4.33 The Petitioner has considered an opening equity of Rs.184.64 Cr. for FY 2016-17 as approved by the Hon'ble Commission in the last MYT Order dated 28th February 2020. The Commission hadn't approved any capital expenditure for the Control Period FY 2016-17 to FY 2020-21 due to delay in submission of detailed justifications in the Order on Petition for Multi Year Tariff for the period FY 2017-21 dated 28th February 2020.

Petitioners Response

4.34 TVNL has considered an opening equity of Rs.184.64 Cr for FY 2016-17 as approved by the Hon'ble Commission in the last MYT order dated 28th February 2020. The Commission did not approve any capital expenditure for the control period FY 2016-17 to FY 2020-21 due to delay in submission of detailed justifications in the order on petition for Multi Year Tariff for the period FY 2017-21 dated 28th February 2020. As there hasn't been a true up after FY 2015-16, the petitioner has considered the capitalization in the previous control period (FY 2016-17 to FY 2020-21) as per the values reflected in the provisional balance sheet for each of the years. The addition in equity has been considered at 30% of addition in GFA as per Regulation 15.6 and 15.7 of

JSERC Generation Tariff Regulations 2020. The same shall be true up after submission of audited accounts and true up petitions for the respective years.

Views of the Commission

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

Outstanding loans from Govt of Bihar and Govt of Jharkhand is very high.

Public Comments/Suggestions

4.36 The interest accrued of these debts are very high. Such inefficiency of TVNL should not be passed on to the consumers. Also, the interest rate is way too high.

Petitioners Response

4.37 TVNL would like to submit that it is difficult to serve its debt timely due to delayed and partial payments being made to JBVNL. As on 31st March 2020, JBVNL owes TVNL cumulative dues of Rs.4251.97 Crores (Rupees four thousand two hundred fifty-one crores ninety-seven lakhs) only. Due to late payment of dues by JBVNL to TVNL, debt could not be serviced timely in the past and hence TVNL had to pay penalties along with interest on loan.

Views of the Commission

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

Closing GFA of FY 2020-21 as Rs.1642.88 Cr and accumulated depreciation of Rs.1407.09 Cr.

Public Comments/Suggestions

4.39 The accumulated depreciation is very high, also, TVNL wants the rest depreciation amount to be covered in this MYT. In the absence of fixed asset register, it is difficult to ascertain the actual depreciation.

Petitioners Response

4.40 TVNL would like to humbly submit that the fixed asset register starting from

01.04.2016(as extracted from SAP-ERP) has been submitted for the perusal of the Hon'ble Commission.TVNL would like to inform that the fixed asset register is being prepared on a regular basis during the previous control period and posted 01.04.2016, the same has been uploaded in the SAP-ERP system. The fixed asset schedule under financial statements is being prepared on the basis of the completed fixed asset register every year.

Views of the Commission

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

Interest charge on working capital

Public Comment/Suggestions

4.42 TVNL proposes 2 months of receivables in working capital and its O&M cost is way too high. So, its interest on working capital is very high that needs to be properly verified and should not be passed on to the Consumer.

Petitioners Response

4.43 The O&M expense projected for the control period FY 2021-22 to FY 2025-26 has been calculated considering the base values and escalation rates as specified by JSERC Generation Tariff Regulations, 2020.The interest on working capital has been calculated as per the clause 15.23 of JSERC Generation Tariff Regulations,2020.

Views of the Commission

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

Chapter 5: BUSINESS PLAN FOR THE MYT CONTROL PERIOD FY 2021-22 TO FY 2025-26.

- 5.1 The Commission has outlined the clause 6.5 and clause 6.6 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2020, for the approval of Business plan and Tariff for MYT Control period FY 2021-22 to FY 2025-26 as reproduced below:

“Business Plan

6.5 Each Generating Company shall file for the Commission’s approval a Business Plan approved by an authorized signatory, as per the timelines specified in Section A 39 of these Regulations.

6.6 The Business Plan shall be for the entire Control Period and shall inter-alia contain:

-
- a) **Capital Investment Plan:** The Generating Company shall submit the Capital Investment Plan for the entire Control Period, detailing the investments planned by the Generating Company along with the corresponding capitalization schedule and financing plan. This Plan shall also include capacity enhancement plan, if any, and proposed efficiency improvements and its cost benefit analysis. It shall also submit plant-wise details of Capital Structure and cost of Financing (interest on Debt) and return on equity, after considering the existing market conditions, terms of the existing loan agreements, risk associated in generating business and creditworthiness;
- b) **Operational Plan:** A set of targets proposed for performance parameters such as Annual Plant Availability Factor (PAF), Plant Load Factor (PLF), Gross Station Heat Rate (SHR), Secondary Fuel Oil Consumption, Auxiliary Power Consumption (Aux)etc., and shall also include Unit-wise Outage Plan;
- c) **Human Resource Plan:** Human Resource Plan with manpower planning including details of the estimated year wise manpower addition and retirements for the Control Period to run the power plant efficiently and effectively;
- d) **Proposals for Non-Tariff Income with item-wise description and details;**
- e) **Proposals in respect of income from Other Business; and**
- f) **Business Plan shall also contain the requisite information for the preceding Control Period:**

Provided that requisite information for the preceding Control Period shall include year wise audited data on Scheme-wise capital investment, capacity enhancement plan, if any, proposed efficiency improvements and its cost benefit analysis, quality improvement measures undertaken, Employee Expenses, Repair & Maintenance

Expenses and A&G Expenses along with detailed break up and any other information used for preparing projections of various performance parameters and other components during the Control Period. In case of a new generating plant, such information is required to be submitted for the period of operations up to the start of the Control Period.

Operational Plan

Plant Availability Factor

Petitioners Submission

- 5.2 The Petitioner has projected to meet the normative availability of 85% for the FY 2021-22 to FY 2025-26 as per clause 16.1 of the JSERC Generation Tariff Regulations, 2020 as shown in the table below:

Table 9 Plant Availability Factor (%) projected by Petitioner for FY 2021-22 to FY 2025-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Plant Availability Factor	85%	85%	85%	85%	85%

Commissions Analysis

- 5.3 The Commission has considered and approved Normative Annual Plant Availability Factor (NAPAF) of 85% as specified in clause 16.1 of JSERC Generation Tariff Regulation (1st Amendment), 2023 for projection of Availability during each year of the Control Period i.e. from FY 2021-22 to FY 2025-26 as referred below:

Table 10 Plant Availability Factor (%) approved by the Commission for FY21-22 to FY25-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Plant Availability Factor	85%	85%	85%	85%	85%

Plant Load Factor (PLF)

Petitioners Submission

- 5.4 The Petitioner has projected to meet the normative plant load factor of 85% for the FY 2021-22 to FY 2025-26 as per clause 16.1 of JSERC Generation Tariff Regulations, 2020 as shown in the table below:

Table 11 Plant Load Factor(%) projected by the Petitioner for FY 21-22 to FY 25-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Plant Load Factor	85%	85%	85%	85%	85%

Commissions Analysis

5.5 The Commission has considered Normative Plant Load Factor (PLF) of 85% as specified in clause 16.1 of the JSERC Generation Tariff Regulations (1st Amendment), 2023 for each year of the Control Period i.e. from FY 2021-22 to FY 2025-26 as shown in the table below:

Table 12 Plant Load Factor (%) as approved by the Commission for FY 21-22 to FY 25-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Plant Load Factor	85%	85%	85%	85%	85%

Gross Generation

Petitioners Submission

5.6 The Petitioner in its Tariff Petition has projected the gross generation for both the units as follows:

Table 13 Gross Generation(MUs) as projected by the Petitioner for FY 2021-22 to FY 2025-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Gross Generation	3127.32	3127.32	3127.32	3127.32	3127.32

Commissions Analysis

5.7 The Commission has computed and approved the gross generation for each year of the Control Period i.e. from FY 2021-22 to FY 2025-26 considering the approved values of the PLF (approved in clause 5.5) as shown in the table below:

Table 14: Gross Generation(MUs) as approved by the Commission for FY 2021-22 to FY 2025-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Gross Generation	3127.32	3127.32	3127.32	3127.32	3127.32

Auxiliary Consumption

Petitioners Submission

5.8 The Petitioner has projected auxiliary consumption for both the units during the control period as shown below:

Table 15 Auxiliary Consumption(%) as projected by the Petitioner for FY 2021-22 to FY 2025-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Auxiliary Consumption	9.5%	9.5%	9.5%	9.5%	9.5%

Commissions Analysis

5.9 In accordance with clause 16.1 of JSERC Generation Tariff Regulation (1st Amendment) 2023, the Commission approves the auxiliary consumption as given below:

Table 16:Auxiliary Consumption(%) as approved by the Commission for FY 21-22 to FY 25-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Auxiliary Consumption	9.5%	9.5%	9.5%	9.5%	9.5%

Net Generation

Petitioners Submission

5.10 The Petitioner has submitted the net generation of 2830.22 MUs on the basis of gross generation of 3127 MU and 9.50% auxiliary consumption for the third control period.

Table 17 Net Generation(MUs) projected by Petitioner for FY 21-22 to FY 25-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Net Generation	2830.22	2830.22	2830.22	2830.22	2830.22

Commission's Analysis

5.11 The Commission approves net generation for the control period FY 2021-22 to FY 2025-26 as given in the table below:

Table 18: Net Generation(MUs) as approved by the Commission for FY 21-22 to FY 25-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Gross Generation(MUs)	3127.32	3127.32	3127.32	3127.32	3127.32
Aux Consumption(%)	9.5%	9.5%	9.5%	9.5%	9.5%
Aux Consumption(MUs)	297.09	297.09	297.09	297.09	297.09
Net Generation(MUs)	2830.22	2830.22	2830.22	2830.22	2830.22

Gross Station Heat Rate (GSHR)

Petitioners Submission

5.12 The Petitioner has submitted that in its endeavor of continuously improving the heat rate of its station, it strives to improve it further. In FY 2020-21, the Petitioner maintained the Station Heat Rate of 2,696.24 Kcal/kWh. However, for the Control Period (FY 2021-22 to FY 2025-26), the Petitioner projects its Station Heat Rate at 2503 kcal/kWh in accordance with clause 16.1 of the JSERC Generation Tariff Regulations, 2020. The year wise projected Station Heat Rate is tabulated below:

Table 19: Station Heat Rate(kCal/kWh) projected by the Petitioner for FY 2021-22 to FY 2025-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Gross Station Heat Rate (kCal/kWh)	2503	2503	2503	2503	2503

Commissions Analysis

5.13 The Commission has specified the norms of operation for the two Units of TVNL as per clause 16.1 of JSERC Generation Tariff Regulation (First Amendment),2023. 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 Generation companies including the Petitioner for the two units. 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 and accordingly approves Gross Station Heat Rate of the plant for the period FY 2021-22 to FY 2025-26 as highlighted in the table below:

Table 20: Gross Station Heat Rate(kCal/kWh) as approved by the Commission for FY 2021-22 to FY 2025-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Gross Station Heat Rate	2547	2547	2547	2547	2547

Secondary Fuel Oil Consumption

Petitioners Submission

- 5.14 As per the new regulations, the Hon'ble Commission has specified normative secondary fuel oil consumption of 1 ml/kWh for the entire control period. The petitioner would like to submit that average specific oil consumption of TVNL for the past years has been in the range of 1-2 ml/kWh. In FY 2020-21, the Specific Oil Consumption was 1.04 ml/kWh. The Petitioner said that in its endeavor to improve the performance, it aims to achieve specific oil consumption of 1 ml/kWh for the control FY 2021-22 to FY 2025-26 as per clause 16.1 of the JSERC Generation Tariff Regulations, 2020 and requests the Hon'ble Commission to approve the same.

Commissions Analysis

- 5.15 The Commission approves the secondary fuel oil consumption of the plant as per clause 16.1 of JSERC (Terms & Conditions for Determination of Generation Tariff) (First Amendment) Regulations, 2023 for FY 2021-22 to FY 2025-26 as shown below:

Table 21: Secondary fuel oil consumption(ml/kWh) as approved by the Commission for FY 2021-22 to FY 2025-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Specific fuel oil consumption	1	1	1	1	1

Transit Loss

Petitioners Submission

- 5.16 The Petitioner has submitted a transit loss of 0.8% to be considered for the control period of FY 2021-22 to FY 2025-26.
- 5.17 The Petitioner has mentioned that as per Clause 17.11 of Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Generation Tariff) Regulations, 2020 a transit loss of 0.8% can be

considered for arriving at the landed cost of fuel per month for non-pithead generating plants. Since the operationalization of the railway line, TVNL has been using the same to procure coal from the allocated mines located at a distance of 40-60 kms. Earlier, the same was made available to the plant via road. As such, the transit loss has been considered as 0.8% for non-pithead generating plants which was in the earlier years considered as 0.2% for pithead generating plants.

Commissions Analysis

5.18 The Commission refers to Clause 17.11 of the Generation Tariff Regulations, 2020 which states that:

“The landed cost of fuel for the month shall include price of fuel corresponding to the grade and quality of fuel inclusive of royalty, taxes and duties as applicable, transportation cost by rail/road or any other means, and, for the purpose of computation of energy charge, and in case of coal/lignite shall be arrived at after considering normative transit and handling losses as percentage of the quantity of coal or lignite dispatched by the coal or lignite supply company during the month as given below:

Pithead generating stations: 0.2%

Non-pithead generating stations: 0.8%

Provided that in case of pithead stations if coal or lignite is procured from sources other than the pithead mines, which is transported to the station through rail, transit loss of 0.8% shall be applicable:

Provided further that in case of imported coal, the transit and handling losses shall be 0.2%.”

5.19 After scrutinizing the submission made by the Petitioner and as per regulation mentioned in the above para, the Commission approves transit loss of 0.8% for the control period of FY 2021-22 to FY 2025-26.

Table 22 Transit loss(%) as approved by the Commission for FY 2021-22 to FY 2025-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Transit Loss	0.8%	0.8%	0.8%	0.8%	0.8%

Unit wise Outage Plan

Petitioners Submission

- 5.20 In accordance with Clause 6.6 of Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Generation Tariff) Regulations, 2020 TVNL proposes the following unit wise outage plan for the Control Period FY 2021-22 to FY 2025-26 for planned maintenance activities.

Table 23 Unit wise outage plan as submitted by the Petitioner for FY 2020-21 to FY 2025-26

Outage Plan (Days & Hours)	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Unit-I	30 days (720 hrs.)	30 days (720 hrs.)	30 days (720 hrs.)	30 days (720 hrs.)	30 days (720 hrs.)
Unit-II	30 days (720 hrs.)	30 days (720 hrs.)	30 days (720 hrs.)	30 days (720 hrs.)	30 days (720 hrs.)

- 5.21 TVNL proposes a month's shutdown for each unit for each year due to ageing of the units (Unit-I being in the 25th year of operation and Unit – II being in the 24th year of operation) and as such the efficiency levels have reduced. So, enhanced focus on Repair and Maintenance activities becomes even more essential for efficient operation and running of the plant.

Commissions Analysis

- 5.22 The Commission has acknowledged the submission made by the Petitioner and has taken a note of the same.

Capital Investment Plan

Petitioner's Submission

- 5.23 The Petitioner has submitted that to improve plant's availability and enhance reliability in order to improve cost effectiveness of generation of electricity, it is essential to implement additional facilities. Thus, the Petitioner has planned certain additional capitalization schemes as detailed below, which will get completed within the Control period.

A. Boiler Maintenance Department

- a) **Purpose of the investment:** The Petitioner has submitted that the investment proposed for works to be carried out under the Boiler Maintenance Department shall help in retrofit and modernization of the boilers to enhance the operational efficiency of the boiler and inhibit the rate of degradation of

the same. An increase in boiler efficiency shall help in reducing the Station Heat Rate (SHR) and the auxiliary consumption, thus impacting the overall performance of the generating unit and help in meeting the trajectory of the above values as specified by the Hon'ble Commission.

b) Capital Structure: The total financial implication of the proposal has been worked out to be INR 41.87 Crores. The scheme shall be executed by arranging funding from financial institutions. The bifurcation of the cost between funding institution and equity is as below: -

- i. FI share – 29.31 Crores
- ii. TVNL share – 12.56 Crores

c) Financing Plan: The Scheme shall be funded by 70% loan from FI and 30% equity of TVNL.

d) Capitalization schedule: The completion period for the scheme is 5 years from the expenditure sanction and shall be completed in the financial year 2025-26 and thereafter the capitalization of assets created will be done year by year as highlighted in the table below:

Table 24 Capitalization schedule (Rs.Cr) as submitted by the Petitioner under Boiler Maintenance department

Sl. No.	Description of Work	Financial outlay (In Rs. Crore)				
		FY 22	FY 23	FY 24	FY 25	FY 26
1.	APH Basket for Unit#1				2.20	
2.	APH Basket for Unit#2		2.00			
3.	APH Adopter sleeve, seal tube, Over running clutch	0.25		0.25	0.25	0.25
4.	Pin rack assembly for Air preheater size 27 VIM 1850 along with holding blocks		0.12	0.14		
5.	Sector Plate for APH			0.12		0.12
6.	APH Gear box assembly	0.50				
7.	Boiler Tube Banks/ Panels (CRH Coil Assembly)			6.00		
8.	Boiler Tube Banks/ Panels (Economizer panel)		1.50			
9.	Spray Control Valves of SH & RH		0.50		0.50	
10.	Boiler Safety Valve assembly		0.25	0.25	0.25	0.25
11.	Coal Compartment Assembly		0.50		0.60	
12.	Oil/Gun Compartment Assembly		0.40		0.50	
13.	Coal Pipe		0.25			0.25
14.	Expansion Joints & Bellows	0.25		0.50	0.25	0.25
15.	Boiler H.P. valves	0.25	0.50	0.25	0.50	0.25
16.	Gates & Dampers	0.25	0.25	0.35		0.40
17.	PRDS Valves	0.25	0.50	0.50	0.25	0.50
18.	Feed Station Control Valves		0.75		0.75	
19.	Wall Soot Blower	0.05	0.10		0.20	
20.	HFO Pump Cartridge		0.05		0.07	
21.	Liners of Mill		1.17			

Sl. No.	Description of Work	Financial outlay (In Rs. Crore)				
		FY 22	FY 23	FY 24	FY 25	FY 26
22.	Reducer gear box of mills	0.46		0.48		0.53
23.	Inlet pipe of Mill, Mixing Box, transition Piece		0.36			
24.	Mill Lube Oil Pumps (H.P./L.P/B&S/Reducer)	0.15		0.20		
25.	RC Feeder Main Gear Box & COC Gear Box			0.30		
26.	RC gate for RC Feeder of Mill		0.30		0.40	
27.	Impeller assembly of PA Fan	0.60	0.60	0.60	0.60	0.60
28.	Impeller assembly of ID Fan		1.00			1.00
29.	Hydro coupling of ID Fan	0.20	0.50	0.50	0.50	0.50
30.	Bearings for ID Fans	0.30	0.30	0.30	0.30	0.30
31.	Blades of FD Fan	0.60	0.60		0.60	0.60
	Total	4.11	12.50	10.74	8.72	5.80

- e) **Benefits:** The Proposal for works carried out under Boiler Maintenance Department (BMD) shall help in improving direct efficiency of a boiler and operational efficiency of the generation unit.

B. Turbine Maintenance Department

- a) **Purpose:** The investment proposed for works to be carried out under the Turbine Maintenance Department shall help in retrofit and modernization of the turbines to enhance the operational efficiency of the turbine and inhibit the rate of degradation of the same. An increase in turbine efficiency shall help in reducing the Station Heat Rate (SHR) and the auxiliary consumption thus impacting the overall performance of the generating unit and help in meeting the trajectory of the above values as specified by the Hon'ble Commission.
- b) **Capital Structure:** The total financial implication of the proposal has been worked out to be Rs. 95.32 Crores. The scheme shall be executed by arranging funding from financial institutions. The bifurcation of the cost between funding institution and equity is as below: -
- FI share – 66.72 Crores
 - TVNL share – 28.60 Crores
- c) **Financing Plan:** The Scheme shall be financed by 70% loan and 30% equity of TVNL.
- d) **Capitalization Schedule:** The completion period for the scheme is 5 years from the expenditure sanction and shall be completed in the financial year

2025-26 and thereafter the capitalization of assets created will be annually as highlighted in the table below:

Table 25 Capitalization Schedule under Turbine Maintenance Department projected by the Petitioner

Sl. No.	Description of Work	Financial outlay (In Rs. Crore)				
		FY 22	FY 23	FY 24	FY 25	FY 26
1.	HPT/IPT Bladed rotor complete		30.00			
2.	HPSV Cone Assembly		0.20			
3.	IPSV Cone Assembly		0.25			
4.	HPCV Cone Assembly		0.20			
5.	IPCV Cone Assembly		0.25			
6.	LPBP Stop Valve Cone Assembly		0.25			
7.	LPBP Control Valve Cone Assembly		0.25			
8.	HPSV Servomotor			0.35		
9.	HPCV Servomotor			0.35		
10.	IPCV Servomotor			0.50		
11.	Condensate Extraction Pump Internal Complete Assembly			0.50		
12.	BFP Booster Pump Assembly			0.40		
13.	Radial & Thrust Assembly of BFP Booster Pump			0.10		
14.	Radial & Thrust Assembly of BFP Pump			0.20		
15.	BFP Cartridge Assembly			1.80		
16.	Complete Assembly of Main Oil Pump			0.25		
17.	Auxiliary Oil Pump Assembly			0.20		
18.	Emergency Oil Pump Assembly				0.25	
19.	Jacking Oil Pump Assembly	0.25				
20.	Pilot Valves & Test Valves for All Stop valves & Control Valves of Turbine				0.30	
21.	HPBP Assembly with Actuator				8.00	
22.	Water Injection Valve Assembly					0.30
23.	Pilot Valve Assembly For LPBP				0.15	
24.	Tube Nest For LP Heater				0.80	
25.	Tube Nest For Ejectors	0.15			0.10	0.10
26.	High Pressure Valves (>40 kg/cm ²) > 50 NB	0.25	0.25	0.25	0.25	0.30
27.	Rotating Element/Impeller Of AOP		0.10		0.10	
28.	ACW Pump Assembly	0.15	0.15	0.15	0.20	
29.	CW Booster Pump Assembly		0.20			
30.	Plate Heat Exchanger Plate Assembly	0.40	0.40	0.40	0.40	0.40
31.	Hydraulic Speed Governor With Starting		0.50			

Sl. No.	Description of Work	Financial outlay (In Rs. Crore)				
		FY 22	FY 23	FY 24	FY 25	FY 26
	Device					
32.	Hydraulic Convertor Assembly			0.50		
33.	EHC Convertor Assembly			0.50		
34.	Low Vacuum Trip Device			0.40		
35.	MS Strainer		0.25		0.25	
36.	HRH Strainer		0.25		0.25	
37.	Steam Line Bellows & Compensator					0.30
38.	Breach Nut For HPT	0.50				0.50
39.	Shaft Gland Seals For HPT/IPT/LPT	1.00	1.00			1.00
40.	Oil Centrifuge		0.45			
41.	HP Heaters				5.00	5.00
42.	Oil Pump Assembly of BFP			0.20		
43.	Journal Bearings for Voith Hydrocoupling	0.10	0.10	0.10	0.10	0.20
44.	Thrust Bearings for Voith Hydrocoupling	0.10	0.10	0.10	0.10	0.20
45.	Shaft With Gears for Voith Hydrocoupling	0.20	0.20	0.20	0.20	0.20
46.	Scoop Tube Assembly for Voith Hydrocoupling	0.30			0.30	
47.	Internal Gears for Voith Hydrocoupling	0.40		0.40		
48.	Lube Oil Pump Assembly for Voith Hydrocoupling		0.20			0.25
49.	Level Actuator for Voith Hydrocoupling	0.05			0.10	
50.	Hydraulic Couplings Assembly/Gear Coupling For BFPs for Voith Hydrocoupling	0.05		0.05		0.05
51.	Pressure Relief Valve for Voith Hydrocoupling		0.10			0.15
52.	BFP Booster Impeller/Shaft		0.20			0.25
53.	CW Inlet Butterfly Valves		1.00	1.20	1.20	1.20
54.	Deaerator Safety Relief Valves		0.20	0.25		0.30
55.	Stator Water Pump Assembly	0.05	0.05		0.05	0.05
56.	Seal Oil Pump Assembly (AC&DC)	0.05	0.05	0.05	0.05	
57.	Vacuum Pump Assembly for Expansion		0.05		0.05	
58.	CW Pump Thrust Bearing Assembly	0.40		0.40		0.50
59.	Impeller/Shaft of CW Pump		1.00	1.00	1.00	
60.	Crank Shaft Assembly of Air Compressor	0.20		0.25		0.30
61.	Piston for HP Compressor	0.03	0.03	0.04	0.05	0.05
62.	Piston for LP Compressor	0.03	0.03	0.04	0.05	0.05
63.	Cylinder Housing for Compressor	0.10	0.10	0.12	0.15	0.15

Sl. No.	Description of Work	Financial outlay (In Rs. Crore)				
		FY 22	FY 23	FY 24	FY 25	FY 26
64.	HP/IP/LP/Gen Coupling Bolts	0.10	0.10			0.10
65.	Hydrogen Seal Assembly		0.05			0.05
66.	Bowl Assembly of CW Pump		0.50	0.50		0.50
67.	DPRV of Seal oil system of Generator		0.50	0.50		
68.	Procurement of modified CW Pump		1.50		2.00	
69.	Debris Filter Assembly		1.50			1.80
	Total	4.86	42.51	12.25	21.45	14.25

- e) Benefits:** The Proposal for works carried out under Turbine Maintenance Department (TMD) shall help in improving direct efficiency of the turbine and the operational efficiency of the generation unit.

C. Control & Instrumentation

- a) Purpose:** The investment proposed for works to be carried out under the Control & Instrumentation Department shall help in retrofit and modernization of the generation unit and equip it with state-of-the-art technology for enhanced monitoring and control of all equipment's. This shall help in massive improvement in performance monitoring and swift deployment of remedial and corrective measures to inhibit the rate of degradation of the equipment's which will impact the overall performance of the generating unit and help in meeting the trajectory of the performance parameters as specified by the Hon'ble Commission.
- b) Capital structure:** The total financial implication of the proposal has been worked out to be Rs. 37.04 Crores. The scheme shall be executed by arranging funding from financial institutions. The bifurcation of the cost between funding institution and equity is as below: -
- FI share - 25.93 Crores
 - TVNL share - 11.11 Crores
- c) Financing Plan:** The Scheme shall be financed by 70% loan from FI and 30% equity of TVNL.
- d) Capitalization Schedule:** The completion period for the scheme is 5 years from the expenditure sanction and shall be completed in the financial year 2025-26 and thereafter the capitalization of assets created will be done annually as highlighted in the table below:

Table 26 Capitalization schedule projected by the Petitioner under Control and Instrumentation

Sl. No.	Description of Work	Financial outlay (In Rs. Crore)				
		FY 22	FY 23	FY 24	FY 25	FY 26
1.	Upgradation of C&I Unit 2 (Mesto DNA)	25.00				
2.	SWAS Analyzer Unit 2		0.70	0.70		
3.	HP BP		0.50		0.50	
4.	AAQMS Analyzers		0.20		0.20	
5.	Electronic module Station C&I	0.50	0.50	0.50	0.50	0.50
6.	Provision of O ₂ Analyzer across APH	0.04				
7.	UPS Battery (12 V, 100 AH, 144 Nos.)				0.20	
8.	Operating station monitors	0.10		0.10		0.10
9.	Zero Speed, Pull Cord and Belt Sway Protection	0.10	0.30		0.30	
10.	Transmitters	0.30	0.20	0.20	0.30	0.20
11.	CHP PLC upgradation	0.30				0.40
12.	pH and conductivity electrodes	0.05	0.05	0.05	0.05	0.05
13.	HEA Igniters	0.20	0.10	0.30	0.10	0.30
14.	CJC box	0.05	0.10	0.05	0.10	0.05
15.	hydra steps			0.40		
16.	water flow measurement	0.30				
17.	Actuators Assembly	0.20	0.30	0.50	0.10	0.20
	Total	27.14	2.95	2.80	2.35	1.80

- e) **Benefits:** The proposal for works carried out under Control & Instrumentation (C&I) department shall help in improving overall operational efficiency of the generation unit.

D. Electrical Maintenance-I

- a) **Purpose:** The investment proposed for works to be carried out under the Electrical Maintenance-I shall help in retrofit and modernization of the generation unit by minimizing downtime, saving time and money, maximizing utilization of equipment lifecycle and improving energy efficiency. This shall help in massive improvement in performance and the life of the electrical equipment's installed in the generation unit which will impact the overall performance of the generating unit and help in meeting the trajectory of the performance parameters as specified by the Hon'ble Commission.

- b) **Capital Structure:** The total financial implication of the proposal has been worked out to be Rs. 48.20 Crores. The scheme shall be executed by arranging funding from financial institutions. The bifurcation of the cost between funding institution and equity is as below: -

- FI share - 33.74 Crores
- TVNL share - 14.46 Crores

- c) **Financing Plan:** The scheme shall be financed by 70% loan from FI and 30%

equity of TVNL.

- d) Capitalization Schedule:** The completion period for the scheme is 5 years from the expenditure sanction and shall be completed in the financial year 2025-26 and thereafter the capitalization of assets created will be done annually as highlighted in the table below:

Table 27 Capitalization schedule as projected by the Petitioner under Electrical Maintenance-I

Sl. No.	Description of Work	Financial outlay (In Rs. Crore)				
		FY 22	FY 23	FY 24	FY 25	FY 26
1.	Replacement of old Batteries			1.12	0.50	
2.	Replacement of Field Breaker, Field Flacing & Thyristor convertor	2.00		2.00		
3.	Replacement of HT Motors				3.00	
4.	Replacement of LT Motors		0.10		0.50	
5.	Retrofitting of LT Breakers/Modules		0.50	0.50	0.50	0.50
6.	Generator Stator Bars & others (Upper Bar, Bottom Bar, Upper Terminal Bar, Bottom Terminal Bar, Connecting Bars)	1.00	0.50	0.50	0.50	0.50
7.	Generator Protection Relays	0.40		0.40		
8.	Motor Protection and other Relays	0.50				
9.	Bus Duct Bellow joints etc. (Unit – I & II) GT	0.70				
10.	Retrofitting of 6.6 kV Breakers	0.50	0.50	0.50		
11.	Battery Charger Replacement	0.50				
12.	Spares for UAT/GT/ST/ CWTS (Diverter Switch, Cooling Fans)	0.10	0.10	0.10	0.10	0.10
13.	GT Transformer Bushing (HV/LV Side)	0.50				
14.	Control Panel for ACW Motor and Booster pump Motor (02 Sets)	0.02				
15.	Retrofitting of EOT cranes	0.01				
16.	Power Cable HT & LT & Control Cable	0.15	0.10			
17.	Retrofitting of DC EOP & DC SOP Motor along with panel	0.10	0.10			
18.	750kVA DG Set (02 Nos.)	1.00				
19.	Earthing Transformer 6.6kV with	0.25	0.25			

Sl. No.	Description of Work	Financial outlay (In Rs. Crore)				
		FY 22	FY 23	FY 24	FY 25	FY 26
	Resistance Box.					
20.	Upgradation of ESP HVTR Control Panel of U#1&2.	0.05	0.05	0.05	0.05	0.05
21.	ESP Electronic Controllers	0.16	0.16	0.16	0.16	0.16
22.	Actuators	1.00	1.00	1.00	1.00	1.00
23.	Air conditioners	2.50	1.50	1.50	2.00	1.50
24.	Air Drier Panel	0.05	0.05	0.05	0.05	
25.	Retrofitting of LT Breakers	0.10	0.10			
26.	Motor HT & LT	3.10	0.38	0.45	0.28	3.00
27.	ESP HVTR	0.20	0.20	0.20	0.20	0.20
28.	Bearing Boiler & Aux Area	0.10	0.10	0.10	0.10	0.10
29.	Insulators ESP	0.20	0.20	0.20	0.20	0.20
30.	Fuses of Breakers & Modules	0.05	0.05	0.05	0.05	0.05
31.	CTs & PTs	0.05	0.05	0.05	0.05	0.05
32.	Spares of Modules	0.05	0.05	0.05	0.05	0.05
33.	SAF Breakers	0.08				
34.	Actuator Spares	0.20	0.20	0.20	0.20	0.20
	Total	15.62	6.24	9.18	9.49	7.66

- e) **Benefits:** The Proposal for works carried out under Electrical Maintenance-I shall help in improving operational efficiency of the generating unit.

E. Electrical Maintenance-II

- a) **Purpose:** The investment proposed for works to be carried out under the Electrical Maintenance-II shall help in retrofit and modernization of the generation unit by minimizing downtime, saving time and money, maximizing utilization of equipment lifecycle and improving energy efficiency. This shall help in massive improvement in performance and the life of the electrical equipment's installed in the generation unit which will impact the overall performance of the generating unit and help in meeting the trajectory of the performance parameters as specified by the Hon'ble Commission.
- b) **Capital Structure:** The total financial implication of the proposal has been worked out to be Rs. 38.53 Crores. The scheme shall be executed by arranging funding from financial institutions. The bifurcation of the cost between funding institution and equity is as below: -

- i. FI share – 26.97 Crores
- ii. TVNL share – 11.56 Crores

c) Financing Plan: The Scheme shall be financed by 70% loan from FI and 30% equity of TVNL.

d) Capitalization Schedule: The completion period for the scheme is 5 years from the expenditure sanction and shall be completed in the financial year 2025-26 and thereafter the capitalization of assets created will be done annually as highlighted in the table below.

Table 28 Capitalization Schedule as projected by the Petitioner under Electrical Maintenance-II

Sl. No.	Description of Work	Financial outlay (In Rs. Crore)				
		FY 22	FY 23	FY 24	FY 25	FY 26
1.	Replacement of old Batteries (CHP) Battery charger	0.50	0.50			
2.	Replacement of old Batteries (GCR)		0.55			
3.	Procurement of HT Motors	0.75	0.60	0.80	0.80	0.60
4.	Replacement of LT Motors	0.30	0.30	0.20	0.20	0.20
5.	Retrofitting of LT Breakers/Modules	0.30	0.35	0.25	0.25	0.20
6.	Retrofitting of Protection Relays of Station and CW transformers	0.15	0.10			
7.	Upgradation of bus bar protections		0.30			
8.	Motor Protection and other Relays	0.10	0.15	0.10		
9.	Retrofitting of 6.6 kV Breakers		1.00	1.00	1.00	1.00
10.	Retrofitting of 33/11 kV Breakers		0.30	0.30		
11.	Battery Charger Replacement (Main-II GCR)		0.20	0.70		0.30
12.	200kVA, 500kVA Transformer	0.20	0.20		0.10	
13.	Control Panel for ACW Motor and Booster pump Motor (02 Sets)		0.20		0.20	
14.	Retrofitting of EOT cranes		0.25	0.15	0.10	0.25
15.	Power Cable HT & LT & Control Cable	0.25	0.25	0.25	0.25	0.25
16.	400kV Switchyard revival (PTPS Bay)		2.00	2.00	3.00	1.00
17.	Lightening Arrestor on Adm Building, Shyamali Guest House, Plant building	0.15	0.25	0.20	0.10	
18.	Air conditioners	0.10	0.10	0.10	0.20	0.10
19.	Replacement of existing lighting with energy saving LED Light	0.25	0.30	0.20	0.30	0.20
20.	Second circuit of 33 KV line from power		0.20			

Sl. No.	Description of Work	Financial outlay (In Rs. Crore)				
		FY 22	FY 23	FY 24	FY 25	FY 26
	house to S/S					
21.	33 kV TTPS Kathara Line			2.00		
22.	Vehicle Mounted Crane		0.30			
23.	DC Motor for Point of Signaling system	0.13	0.05			
24.	Bus Bar Protection & Event Logger		0.10			
25.	220 kV Bushing, CT & EMVT				0.20	
26.	Boiler Lift	0.15	1.00			
27.	Suspended Magnet	0.30	0.20			
28.	ILMS	0.50	0.35			
29.	Hoist SCH		0.20	0.20		
30.	EOT Crane of AHP	0.20	0.20			
31.	Replacement of 6.6 kV Breaker of AHP		1.00	1.00		
32.	Grid connected Rooftop Solar power Plant		0.35	0.35	0.35	0.25
33.	Underground cabling for LT power in colony		0.25	0.25	0.25	
34.	0.4 kV breaker for colony water supply	0.15				
35.	Hydrogen Plant (Rectifier + Control Panel+ Transformer)		0.25			
	Total	4.48	12.35	10.05	7.30	4.35

e) **Benefit:** The Proposal for works carried out under Electrical Maintenance-II shall help in improving operational efficiency of the generating unit.

F. Coal Handling Plant-I

a) **Purpose:** The investment proposed for works to be carried out under the Coal Handling Plant-I shall help in retrofit and modernization of the generation unit by reducing the coal handling downtime and enhancing the efficiency of coal preparation process, saving time and money and maximizing utilization of equipment lifecycle. It will have a cascading effect on improving the efficiency of all the processes involved in coal preparation including unloading, feeding, screening, crushing, stacking & reclaiming and bunkering. This shall help in massive improvement in performance and the life of the equipment's installed at the Coal Handling Plant (CHP) which will impact the overall performance of the generating unit and help in meeting the trajectory of the performance parameters as specified by the Hon'ble Commission.

b) **Capital Structure:** The total financial implication of the proposal has been

worked out to be Rs. 35.15 Crores. The scheme shall be executed by arranging funding from financial institutions. The bifurcation of the cost between funding institution and equity is as below: -

- i. FI share – 24.61 Crores
- ii. TVNL share – 10.55 Crores

c) Financing Plan: The Scheme shall be financed by 70% loan from FI and 30% equity of TVNL.

d) Capitalization Schedule: The completion period for the scheme is 5 years from the expenditure sanction and shall be completed in the financial year 2025-26 and thereafter the capitalization of assets created will be done annually as highlighted in the table below.

Table 29 Capitalization Schedule as projected by the Petitioner under Coal Handling Plant-I

Sl. No.	Description of Work	Financial outlay (In Rs. Crore)				
		FY 22	FY 23	FY 24	FY 25	FY 26
1.	Belt Replacement of all running Conveyors		0.50	0.50	0.50	1.50
2.	Replacement of Tube & Body of Vibrating Screen.		0.50			0.50
3.	Replacement of Rotor Shaft of Ring granulator			0.50		
4.	Replacement of Pulleys of running path		0.50	0.50	0.50	0.50
5.	Revival of Dust Extraction & Dust Suppression System		0.30	0.30	0.30	0.30
6.	Revival of Ventilation Fans		0.10	0.10	0.10	0.10
7.	Replacement of Idlers (Carrying/Returning) for Track Hopper & RH4		0.70	0.70	0.70	0.70
8.	Revival of Equipments of RH4, Conv-9,10,11 & Paddle Feeder		1.00	1.00	1.00	1.00
9.	Revival of Stacker Reclaimer EOT Crane	5.25		5.00	10.00	
	Total	5.25	3.60	8.60	13.10	4.60

e) Benefit: The Proposal for works carried out under Coal Handling Plant-I shall help in improving operational efficiency of the generating unit.

G. Coal Handling Plant-II

a) Purpose: The investment proposed for works to be carried out under the Coal Handling Plant-I shall help in retrofit and modernization of the generation unit by reducing the coal handling downtime and enhancing the efficiency of coal preparation process saving time and money and maximizing utilization of equipment lifecycle. It'll have a cascading effect on improving the efficiency of all the processes involved in coal preparation including unloading, feeding,

screening, crushing, stacking & reclaiming, and bunkering. This shall help in massive improvement in performance and the life of the equipment's installed at the Coal Handling Plant (CHP) which will impact the overall performance of the generating unit and help in meeting the trajectory of the performance parameters as specified by the Hon'ble Commission.

- b) Capital Structure:** The total financial implication of the proposal has been worked out to be Rs. 3.70 Crores. The scheme shall be executed by arranging funding from financial institutions. The bifurcation of the cost between funding institution and equity is as below: -

- i. FI share – 2.59 Crores
- ii. TVNL share - 1.11 Crores

- c) Financing Plan:** The Scheme shall be financed by 70% loan from FI and 30% equity of TVNL.

- d) Capitalization Schedule:** The completion period for the scheme is 3 years from the expenditure sanction and shall be completed in the financial year 2023-24 and thereafter the capitalization of assets created will be done annually as highlighted in the table below:

Table 30 Capitalization Schedule as projected by the Petitioner under Coal Handling Plant-II

Sl. No.	Description of Work	Financial Outlay (In Rs. Crore)				
		FY 22	FY 23	FY 24	FY 25	FY 26
1.	Procurement of BD-355 Dozer (01 No.)			3.00		
2.	Procurement of Payloader (01 No.)		0.20			
3.	Sprinkler System at Coal Yard		0.50			
	Total	-	0.70	3.00	-	-

- e) Benefit:** The Proposal for works carried out under Coal Handling Plant-II shall help in improving operational efficiency of the generation unit.

H. Environmental Management Group

- a) Purpose:** The investment proposed for works to be carried out under the Environmental Management Group (EMG) shall help in minimizing emissions as specified by the Ministry of Environment, Forest, and Climate Change (Government of India) for thermal power generating stations. It shall focus on curbing release of SOx and other undesirable emissions thus helping to generate power in a sustainable manner. TVNL commits to its resolve of providing energy to the masses in the most sustainable way possible.

b) Capital Structure: The total financial implication of the proposal has been worked out to be Rs. 235.65 Crores. The scheme shall be executed by arranging funding from financial institutions. The bifurcation of the cost between funding institution and equity is as below: -

- i. FI share - 164.95 Crores
- ii. TVNL share - 70.70 Crores

c) Financing Plan: The Scheme shall be financed by way of 70% loan from FI and 30% equity of TVNL.

d) Capitalization Schedule: The completion period for the scheme is 5 years from the expenditure sanction and shall be completed in the financial year 2025-26 and thereafter the capitalization of assets created will be done annually as highlighted in the table below.

Table 31 Capitalization Schedule as projected by the Petitioner under Environmental Management Group

Sl. No.	Description of Work	Financial outlay (In Rs. Crore)					Remarks
		FY 22	FY 23	FY 24	FY 25	FY 26	
1.	FGD			50.00	50.00	68.00	As per BOQ
2.	SILO System		20.00	17.60			W.O. Value - 43,08,92,340.00
3.	ETP & STP	17.00					As per BOQ
4.	AWRS	10.00					As per BOQ
5.	Green Belt development	0.50	0.10	0.10	0.10	0.10	
6.	Dust Suppression and Pollution Control Equipment	1.25					
7.	Rainwater Harvesting and Storm Water Dain Management	0.60					
8.	Hazardous & electronic waste area development	0.30					
	Total	29.65	20.10	67.70	50.10	68.10	

e) Benefit: The Proposal for works carried out under Environmental Management Group (EMG) shall help in meeting emission norms as set by Ministry of Environment and Forests, Government of India.

I. Civil

- a) **Purpose:** The investment proposed for works to be carried out under the Civil Department shall help in construction and augmentation of some essential fixed assets which has been felt necessary by the top management of TVNL since a long time for the upkeep and smooth functioning of the entire generating unit. The civil works shall help in maintaining the plant in a great working condition and modernization of the generation unit by maximizing utilization of equipment lifecycle. This shall impact the overall performance of the generating unit and help in meeting the trajectory of the performance parameters as specified by the Hon'ble Commission.
- b) **Capital Structure:** The total financial implication of the proposal has been worked out to be Rs. 26.71 Crores. The scheme shall be executed by arranging funding from financial institutions. The bifurcation of the cost between funding institution and equity is as below: -
- i. FI share :18.70 Crores
 - ii. TVNL share:8.01 Crores
- c) **Financing Plan:** The Scheme shall be financed by 70% loan from FI and 30% equity of TVNL.
- d) **Capitalization Schedule:** The completion period for the scheme is 4 years from the expenditure sanction and shall be completed in the financial year 2024-25 and thereafter the capitalization of assets created will be done annually as highlighted in the table below.

Table 32 Capitalization Schedule as projected by the Petitioner under Civil Department

Sl. No.	Description of Work	Financial outlay (In Rs. Crore)					Remarks
		FY 22	FY 23	FY 24	FY 25	FY 26	
1.	Ash Dyke Capacity raising	0.60	0.90	0.90			
2.	New 300mm diameter ash disposal pipelines (A, B & C) laying between ash pond no-04 to ash pond no-03.	0.40					
3.	Tilaiya Rehabilitation: construction of dwelling units	0.60	0.50				
4.	Installation of new road weigh bridge.	0.60					
5.	Laying hume pipe for storm drainage	0.50	0.50				
6.	CISF Barrack		2.00	2.00			
7.	C Type Block Left over work	0.46					W.O. Value - 45,51,819.00,

Sl. No.	Description of Work	Financial outlay (In Rs. Crore)					Remarks
		FY 22	FY 23	FY 24	FY 25	FY 26	
							dated 24.08.2007
8.	Sewerage treatment plant for colony						
9.	Revival of Water Treatment plant near 33 KV S/S	0.75	0.50				
10.	MGR System for SILO System			5.00	10.00		
11.	Ash loading yard for pond ash	0.50					
	Total	4.41	4.40	7.90	10.00	-	

- e) **Benefit:** The Proposal for works carried out under Civil Department shall help in improving operational efficiency of the generating unit.

J. Operation

- a) **Purpose:** The investment proposed for works to be carried out under the Operations Department shall help in retrofit and modernization of the operations thus enabling the personnel involved to monitor the working of the entire generation unit and identify, communicate, and resolve any bottlenecks within the shortest possible time. This shall enhance the operational efficiency of the generating unit and identify any red flags as such this may adversely impact the performance of the unit. An increase in operational efficiency shall help in reducing the Station Heat Rate (SHR) and the auxiliary consumption, thus helping meet the trajectory of the above values as specified by the Hon'ble Commission.
- b) **Capital Structure:** The total financial implication of the proposal has been worked out to be Rs. 0.96 Crores. The scheme shall be executed by arranging funding from financial institutions. The bifurcation of the cost between funding institution and equity is as below: -
- FI share - 0.67 Crores
 - TVNL share - 0.29 Crores
- c) **Financing Plan:** The Scheme shall be financed by 70% of loan from FI and 30% equity of TVNL.
- d) **Capitalization Schedule:** The completion period for the scheme is 4 years from the expenditure sanction and shall be completed in the financial year 2024-25 and thereafter the capitalization of assets created will be done annually as highlighted in the table below:

Table 33 Capitalization schedule projected by the Petitioner under Operation Department

Sl. No.	Description of Work	Financial outlay (In Rs. Crore)				
		FY 22	FY 23	FY 24	FY 25	FY 26
1.	Procurement of Acid Storage Tanks (2 Nos.)		0.15			
2.	Procurement of Caustic Storage Tanks (2 Nos.)			0.18		
3.	Supply, E&C of CO2 Breather (3 Nos.)				0.15	
4.	Supply, E&C of Degasser Tower (1 No.)			0.08		
5.	Procurement of Submersible Pumps (-- Nos.)		0.4			
	Total	-	0.55	0.26	0.15	-

- e) Benefits:** The Proposal for works carried out under Operations (OPN) Department shall help in improving overall operational efficiency of the generating unit.

K. Information Technology

- a) Purpose:** The investment proposed for works to be carried out under the Information Technology (IT) Department shall help TVNL in becoming a technology driven robust utility with cutting edge processes. The investment shall help in augmentation of the network and communication assets of TVNL thereby maintaining a strong data management system which shall aid in the strengthening of continual business process upgradation. The IT works shall minimize the decision taking time for the employees of TVNL as reliable data shall be available on the go. This shall impact the overall performance of the generating unit and help in meeting the trajectory of the performance parameters as specified by the Hon'ble Commission.

- b) Capital Structure:** The total financial implication of the proposal has been worked out to be Rs. 13.87 Crores. The scheme shall be executed by arranging funding from financial institutions. The bifurcation of the cost between funding institution and equity is as below: -

- i. FI share – 9.71 Crores
- ii. TVNL share - 4.16 Crores

- c) Financing Plan:** The Scheme shall be financed by 70% of loan from FI and 30% of equity of TVNL.
- d) Capitalization Schedule:** The completion period for the scheme is 3 years from the expenditure sanction and shall be completed in the financial year 2023-24 and thereafter the capitalization of assets created will be done

annually as highlighted in the table below:

Table 34 Capitalization schedule as projected by the Petitioner under Information Technology

Sl. No.	Description of Work	Financial outlay (In Rs. Crore)				
		FY 22	FY 23	FY 24	FY 25	FY 26
1.	DR System		9.00			
2.	Managed LAN on fiber backbone & cyber security			4.50		
3.	Window License	0.15				
4.	Telephone Exchange	0.02				
5.	Biometric	0.1				
6.	Computers	0.1				
	Total	0.37	9.00	4.50		

e) Benefit: The Proposal for works carried out under the Information Technology (IT) wing shall help in improving operational efficiency of the generating unit.

5.24 The Summary of Capital Investment Plans as submitted by the Petitioner for the third control period i.e. from FY 2021-22 to FY 2025-26 is given in the table below:

Table 35 Summary of Capital Investment Plan (Rs.Cr) as submitted by the Petitioner for FY 2021-22 to FY 2025-26

Particulars	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Control & Instrumentation (C&I)	27.14	1.48	-	-	-
Information Technology (IT)	0.37	4.50	-	-	-
Electrical Maintenance (EM-I)	15.62	3.12	-	-	-
Electrical Maintenance (EM-II)	4.48	6.18	-	-	-
Turbine Maintenance (TMD)	4.86	21.26	-	-	-
Boiler Maintenance (BMD)	4.11	6.25	-	-	-
Coal Handling Plant (CHP-I)	5.25	1.80	-	-	-
Coal Handling Plant (CHP-II)	-	0.35	-	-	-
Operation (OPN)	-	0.28	-	-	-
Civil	4.41	2.20	-	-	-
Environmental Management Group (EMG)	29.65	20.10	67.70	50.10	68.10
Total	95.89	67.50	67.70	50.10	68.10

5.25 The Summary of capitalization schedule as submitted by the Petitioner for the period FY 2021-22 to FY 2025-26 is given below:

Table 36 Summary of capitalization schedule (Rs.Cr)as submitted by the Petitioner for FY 2021-22 to FY 2025-26

Particulars	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Control & Instrumentation (C&I)	27.14	1.48	-	-	-
Information Technology (IT)	0.37	4.50	-	-	-
Electrical Maintenance (EM-I)	15.62	3.12	-	-	-
Electrical Maintenance (EM-II)	4.48	6.18	-	-	-
Turbine Maintenance (TMD)	4.86	21.26	-	-	-
Boiler Maintenance (BMD)	4.11	6.25	-	-	-
Coal Handling Plant (CHP-I)	5.25	1.80	-	-	-
Coal Handling Plant (CHP-II)	-	0.35	-	-	-
Operation (OPN)	-	0.28	-	-	-
Civil	4.41	2.20	-	-	-
Environmental Management Group(EMG)	14.83	18.95	45.81	49.38	106.69
Total	81.07	66.35	45.81	49.38	106.69

5.26 The Petitioner has proposed the above Capital Investment Plan for the Control Period (FY 2021-22 to FY 2025-26) before the Hon'ble Commission and has prayed before the Commission for approval of the same.

Commissions Analysis

5.27 The Commission has outlined clause 6.6(a) of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2020, for the approval

of capital investment plan for MYT Control period FY 2021-22 to FY 2025-26 as reproduced below:

“Business Plan

6.6 The Business Plan shall be for the entire Control Period and shall inter-alia contain: -

*a) **Capital Investment Plan:** The Generating Company shall submit the Capital Investment Plan for the entire Control Period, detailing the investments planned by the Generating Company along with the corresponding capitalization schedule and financing plan. This Plan shall also include capacity enhancement plan, if any, and proposed efficiency improvements and its cost benefit analysis. It shall also submit plant-wise details of Capital Structure and cost of Financing (interest on Debt) and return on equity, after considering the existing market conditions, terms of the existing loan agreements, risk associated in generating business and creditworthiness;*

- 5.28 The Commission had directed the Petitioner to submit specific details on the capital expenditure proposed in the petition. The details should have included specific heads such as, land, building, P&M etc., costs to be incurred, justification etc., duly certified by statutory auditors. The Petitioner was directed to submit detailed DPRs, Cost Benefit Analysis, assumptions considered for cost benefit analysis and impact on tariff with justifications which highlight the need for the investment.
- 5.29 The Petitioner, in its reply, has submitted reasons for capital expenditure along with benefits of availing the same. The Petitioner had mentioned that the major investment projected is due to change in emission norms which the Petitioner has projected in investment proposal in order to achieve the revised emission norms.
- 5.30 The Commission has scrutinized the investment schedule projected by the Petitioner and has also analyzed the submission made by the Petitioner. The Commission also notes that the plant has completed its useful life for both the units.
- 5.31 Further TVNL vide Letter No./Ref 643/23-24 dated 29th September, 2023 has submitted the Life Assessment report of Unit – I, stating further, that the Life Assessment of Unit – II shall be carried out during the Capital Overhauling.
- 5.32 Further, the RLA Study certificate conducted by M/s Becquerel Industries Pvt. Ltd. vide letter dated 29th September, 2023 submitted along with TVNL letter dated 29th September, 2023 certifies the turbine and generator as fit for use for a period of 5 years, subject to annual periodic inspections

- conducted through Non-destructive Testing (NDT) method. The certificate serves as a testament to the equipment's compliance with safety standards and its suitability for continued operation.
- 5.33 Further the Commission is of the view that the Petitioner has not submitted the Petition for True Up of the second control period i.e. from FY 2016-17 to FY 2020-21 till date, as such, adequate data is not available with the Commission based on which the efficiency of the Petitioner may be ascertained. The Commission has observed that the Tariff Regulations, 2020 define FY 2019-20 as the base year for forecasting the cost parameters for the 3rd control period. In the absence of the required Audited Data for FY 2019-20, the Commission has decided not to approve any estimated capital expenditure as submitted by the Petitioner.
- 5.34 Nevertheless, the Commission grants the Petitioner the liberty to furnish comprehensive details of the incurred capital expenditure, accompanied by supporting documents, cost-benefit analyses, and any other relevant information, in conjunction with the True-up Petition for the respective years. Subsequently, the Commission will scrutinize the particulars of the capital expenditure and its capitalization in the accounts. Following a prudence check, a determination will be made regarding the approval of capital expenditure for the control period during True up.
- 5.35 In accordance with clause 6.8 to clause 6.10 of the JSERC Generation Tariff Regulations, 2020, the Commission shall review the capital expenditure and capitalization actually done by the Petitioner at the end of each year. The relevant clauses of the regulations are mentioned below.

“6.8 During the Annual Performance Review, the Commission shall monitor the year-wise progress of the actual capital expenditure incurred by the Generating Company vis-à-vis the approved capital expenditure. The Generating Company shall submit the actual capital expenditure incurred along with the Annual Performance Review Filing.

6.9 The Commission shall review the actual capitalization at the end of each year of the Control Period vis-à-vis the approved capitalization schedule and shall true up the ARR based on actual capitalization for the year for which True up has been filed and also revise the ARR components for the year for which APR and Tariff have been sought.

6.10 In case the capital expenditure is required for emergency work, which has not been approved in the Capital Investment Plan, the Generating Company shall submit an

application containing all relevant information along with reasons justifying emergency nature of the proposed work seeking approval of the Commission: Provided that in case the capital expenditure is required for emergency work or unforeseen situation to mitigate threat to life and property and if prior intimation thereof to the Commission shall cause any irreparable loss or injury, the Generating Company may undertake such capital expenditure and submit the details for post-facto approval of the Commission along with next Tariff Petition with all relevant details.”

Financing of Capital Expenditure Plan

Petitioner’s Submission

5.36 The Petitioner has considered the financing of the aforementioned value of Gross Fixed Assets in a Debt: Equity ratio of 70: 30.

Table 37 Financing of Capital Expenditure Plan(Rs.Cr) as submitted by the Petitioner

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Capital Expenditure Plan	81.07	66.35	45.81	49.38	106.69
Normative Equity(30%)	24.32	19.90	13.74	14.81	32.01
Normative Loan(70%)	56.75	46.44	32.07	34.57	74.68

Commission’s Analysis

5.37 The Commission has outlined the clause 15.6 and clause 15.7 of JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2020, for the approval of Debt-Equity Ratio for MYT Control period FY 2021-22 to FY 2025-26 as referred below:

"Debt-Equity Ratio

15.6 Existing Projects:

For existing projects declaring Commercial Operation on or before April 01, 2021, the following Capital Structure is allowed: -

- 1. Debt-Equity ratio allowed by the Commission for determination of tariff for the period ending March 31, 2021 shall be considered;*
- 2. In case of the generating station declared under commercial operation prior to April 01, 2021, but where debt-equity ratio has not been determined by the Commission for determination of tariff for the period ending March 31, 2021, the Commission shall*

approve the debt-equity ratio in accordance with Clause 15.7 of these Regulations.

3. Any expenditure incurred or projected to be incurred on or after April 01, 2021, as may be admitted by the Commission as additional capital expenditure for determination of tariff and renovation and modernization expenditure for life extension shall be serviced in the manner as specified in Clause 15.7 of these Regulations.

15.7 New Projects:

For new projects, declaring Commercial Operation on or after April 01, 2021, the following Capital Structure is allowed: -

1. Normative debt-equity ratio of 70:30 shall be considered for the purpose of determination of Tariff.
2. In case the actual equity employed is in excess of 30%, the amount of equity for the purpose of tariff determination shall be limited to 30%, and the balance amount shall be considered as normative loan;
3. In case the actual equity employed is less than 30%, the actual debt-equity ratio shall be considered.;"

5.38 However as per reasons cited under para 5.33 above the Commission has not allowed any capital expenditure for the period FY 2021-22 to FY 2025-26 as of now, hence the Commission does not approve any debt or equity infusion of the capital expenditure projected by the Petitioner for the control period. However as mentioned above the Commission shall review the detailed expenditure along with submission of supporting documents during the time of true up.

Human Resource Plan

Petitioner's Submission

5.39 The Petitioner has not projected any addition in Human Resource Plan for MYT control period FY 2021-22 to FY 2025-26. However, the Petitioner has submitted details of personnel to retire in the control period as given below:

Table 38 Details of manpower to retire in the control period as submitted by the Petitioner

Retirement		FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26	Total
Technical Stream	C.E	0	1	0	0	0	1
	E.S.E	0	0	0	1	0	1
	E.E	1	0	1	1	4	7
Non-Technical	C.E	0	0	3	3	5	11
	E.S.E	0	1	0	0	0	1
	E.E	0	0	0	0	0	0
HR	HR Posts	0	2	2	2	2	8
Finance	Finance Posts	2	0	0	0	0	2

Commission's Analysis

5.40 The Commission has acknowledged the submission made by the Petitioner and has not considered any addition in manpower for the control period. The Commission has also taken a note of the manpower to be superannuated during the control period as submitted by the Petitioner.

Non-Tariff Income

5.41 The Petitioner for calculation of Non-Tariff Income has considered average annual growth rate of Non-Tariff Income from FY17 to FY20 i.e., 4.76%. The Non-Tariff Income for FY 2021-22 has been considered to be halved from previous year level, primarily due to lower interest rate being offered by banks on fixed deposit. Thereafter, an escalation of 4.76% has been considered for calculating the values of Non-Tariff Income for the Control Period of FY 2021-22 to FY 2025-26.

5.42 The Petitioner has submitted Non-Tariff Income for the third control period as below:

Table 39 Non-Tariff Income(Rs.Cr) as submitted by the Petitioner for third control period

Particulars	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Non-Tariff Income	18.00	18.86	19.75	20.69	21.68

Commissions Analysis

5.43 The Commission approves the Non-Tariff income as submitted by the Petitioner and directs the Petitioner to submit detail description regarding non-tariff income at the time of True-up.

Table 40 Non –Tariff Income (Rs.Cr) as approved by the Commission for the third control period

Particulars	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Non-Tariff Income	18.00	18.86	19.75	20.69	21.68

Chapter 6: DETERMINATION OF TARIFF FOR THE MYT CONTROL PERIOD FY 2021-22 TO FY 2025-26.

6.1 The Petitioner, in the instant Petition has outlined the Operational and financial projections for both the units and has computed each element of ARR for the 3rd Control Period i.e. FY 2021-22 to FY 2025-26, keeping in view the following consideration:

- Norms and Principles outlined in the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations 2020.
- Multi Year Tariff Business Plan covering Operational and Financial Plan submitted for the Control Period from FY 2021-22 to FY 2025-26;
- Actual Operational and Financial Performance of the last Control Period i.e. FY 2015- 16 to FY 2019-20 (provisional data) along with the performance parameters to be used for the Base Year i.e. FY 2020-21;

6.2 In accordance with the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations 2020 and JSERC (Generation Tariff Regulation) 1st Amendment 2023, the Commission has scrutinized the Petition filed by the Petitioner for determination of Generation Tariff for the MYT Control Period i.e. FY 2021-22 to 2025-26. The component-wise description of the Petitioner's submission and the Commission's analysis thereon is given below.

Operational Performance

Petitioner's Submission

6.3 The Petitioner has projected the Operational Performance Parameters in accordance with JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations 2020.

Commission's Analysis

6.4 The Commission has approved the Operational Performance Parameters for MYT Control Period FY 2021-22 to FY 2025-26 in chapter 5 of the order.

Fuel Cost Parameter

GCV OF PRIMARY FUEL, LANDED PRICE OF COAL, GCV OF SECONDARY FUEL, LANDED PRICE OF SECONDARY FUEL

Petitioners Submission

- 6.5 The Petitioner has mentioned in the Petition that the daily requirement of coal for full load generation for both of its units is approximately 7000MT which is fulfilled by the Petitioner by road and rail transport from its nearby collieries.
- 6.6 The Petitioner has submitted that as per the Clause 17.15 of JSERC Generation Tariff Regulations, 2020, which states:
“Initially the Base value of gross calorific value of fuel oils and gross calorific value of coal incurred by the Generating Company/ generating Station shall be taken based on actuals of the weighted average gross calorific value of the three preceding months and in the absence of weighted average gross calorific value for the three preceding months, latest weighted average gross calorific value for the generating station, before the start of the year.”
- 6.7 In line with the aforesaid regulations, the Petitioner has considered the Gross Calorific Value of Coal and Secondary fuel for the preceding three months from the start of Control Period (i.e. Dec’21 to Feb’21) and based on the same has computed the weighted average GCV of Coal, the computation of which is provided below:

Table 41: Weighted average GCV of coal(kcal/kg) as submitted by the Petitioner for FY 2021-22 to FY 2025-26

Sl.No	Particulars	Coal Consumption(MT)	GCV of Coal(kCal/kg)
1	December 2020	109754	3646.44
2	January 2021	136529	3602.75
3	February 2021	125394	3758.37
Weighted Average GCV of Coal (kCal/kg)			3668.15

Table 42: Weighted average GCV of secondary fuel(Kcal/L) as submitted by the Petitioner for FY 2021-22 to FY 2025-26

Sl.No	Particulars	Oil Consumption(KL)	GCV of oil(kCal/L)
1	December 2020	294.2	9359
2	January 2021	125.8	9359
3	February 2021	90.6	9359
Weighted Average GCV of Secondary fuel(kCal/L)			9359

Commissions Analysis

6.8 Clause 17.15 of the Generation Tariff Regulations, 2020 states the following:

“Initially the Base value of gross calorific value of fuel oils and gross calorific value of coal incurred by the Generating Company/ generating Station shall be taken based on actuals of the weighted average gross calorific value of the three preceding months and in the absence of weighted average gross calorific value for the three preceding months, latest weighted average gross calorific value for the generating station, before the start of the year.”

Further as per clause 7.1 JSERC (Terms & Conditions for Determination of Generation Tariff) (First Amendment) Regulations, 2023 which states:

*“Provided that the cost of primary fuel shall be based on the landed cost incurred (taking into account normative transit and handling losses) by the generating station and gross calorific value of the fuel on ‘**as received basis**’ less 85 kCal/Kg on account of variation during storage at generating station as per actual weighted average for three months preceding the first month for which tariff is to be determined”*

6.9 The Commission has analyzed the data submitted by the Petitioner for the last three months of consumption along with GCV for both coal and secondary fuel oil and in line with considering the stacking loss with the regulation mentioned above the Commission accordingly approves GCV of coal as 3583.15 kCal/kg and GCV of secondary fuel oil as 9359 kCal/Ltr respectively for the third control period i.e. FY 2021-22 to FY 2025-26.

Table 43 GCV of Coal (kCal/kg) & GCV of Secondary fuel oil (kCal/Ltr) approved by the Commission for FY 2021-22 to FY 2025-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
GCV of Coal	3583.15	3583.15	3583.15	3583.15	3583.15
GCV of Secondary Fuel Oil	9359	9359	9359	9359	9359

Price of Coal and Secondary fuel oil

Petitioners Submission

- 6.10 The Petitioner, in line with clause 17.10 of JSERC Generation Tariff Regulations, 2020 has considered the cost of coal and secondary fuel for the preceding three months from the start of Control Period (i.e. Dec'21 to Feb'21) and based on the same has computed the weighted average rate of coal, the computation of which is provided below:

Table 44: Weighted average rate of Coal as submitted by the Petitioner for FY 2021-22 to FY 2025-26

Sl.No	Particulars	Coal Consumption(MT)	Rate of Coal (Rs/MT)
1	December 2020	109754	3357.49
2	January 2021	136529	3400.12
3	February 2021	125394	3288.31
Weighted Average rate of Coal(Rs/MT)			3349.81

Table 45: Weighted average rate of secondary fuel oil as submitted by the Petitioner for FY 2021-22 to FY 2025-26

Sl.No	Particulars	Oil Consumption(KL)	Rate of Oil(Rs/ KL)
1	December 2020	294.20	36749.09
2	January 2021	125.80	43548.73
3	February 2021	90.6	46097.70
Weighted Average rate of secondary fuel oil (Rs/KL)			40083.17

Commissions Analysis

- 6.11 Clause 17.10 of the Generation Tariff Regulations,2020 states the following:

“17.10 The landed fuel cost of primary fuel and secondary fuel for tariff determination shall be based on actual weighted average cost of primary fuel and secondary fuel of the three preceding months, and in the absence of landed costs for the three preceding months, latest procurement price of primary fuel and secondary fuel for the generating station, before the start of the Control period for existing stations and immediately preceding three months in case of new generating stations shall be taken into account.”

- 6.12 The Commission has analyzed the methodology adopted by the Petitioner for arriving at the rate of coal and secondary fuel oil and has found it to be in line with the regulations. The Petitioner has submitted the values for December 2020, January 2021 & February 2021 as per actuals. After proper

scrutiny of the documents submitted by the Petitioner, the Commission has considered and approves the rate of coal and secondary fuel oil as Rs.3349.81/MT & Rs.40083.17/Kl respectively for the third control period i.e. FY 2021-22 to FY 2025-26. However, the rate of coal and secondary fuel shall be reviewed during true up of for the respective years supported by proper documents.

Table 46 Rate of Coal & Secondary fuel as approved by the Commission for the period FY 2021-22 to FY 2025-26

Particulars	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Rate of Coal(Rs./MT)	3349.81	3349.81	3349.81	3349.81	3349.81
Rate of Secondary fuel(Rs/Kltr)	40083.17	40083.17	40083.17	40083.17	40083.17

6.13 Also as per clause 17.13 of Generation Tariff Regulations,2020 which specifies as

“Any variation in fuel prices on account of change in the Gross Calorific Value (GCV) of coal or gas or liquid fuel shall be adjusted on a monthly basis on the basis of weighted average GCV of coal or gas or liquid fuel in stock, received and burnt and weighted average landed cost incurred by the Generating Company for procurement of coal, oil, or gas or liquid fuel, as the case may be for a power station.”

6.14 From the above paragraph it is clear that there is already a mechanism in the Generation Tariff Regulation, 2020 for taking into account the escalation of fuel price and so the base fuel price is kept constant for the control period.

Energy Charge Rate (ECR)

Petitioners Submission

6.15 The Petitioner has submitted that the Energy Charge Rate has been computed as per clause 17.8 of JSERC Generation Tariff Regulations, 2020 which is shown below:

Table 47: Energy Charge Rate (ECR) as projected by the Petitioner for FY 2021-22 to FY 2025-26

Particulars	FY2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Capacity(MW)	420	420	420	420	420
PLF(%)	85%	85%	85%	85%	85%
Gross Generation(MUs)	3127.32	3127.32	3127.32	3127.32	3127.32
Auxiliary Consumption(%)	9.5%	9.5%	9.5%	9.5%	9.5%
Net Generation(MUs)	2830.22	2830.22	2830.22	2830.22	2830.22
Station Heat Rate(Kcal/kWh)	2503	2503	2503	2503	2503
Secondary fuel oil consumption(ml/kWh)	1	1	1	1	1
Gross Calorific value of coal(kcal/kg)	3668.15	3668.15	3668.15	3668.15	3668.15
Gross Calorific value of oil(Kcal/Kl)	9359	9359	9359	9359	9359
Total heat required(kcal)	7827681.96	7827681.96	7827681.96	7827681.96	7827681.96
Oil consumption(KL)	3127.32	3127.32	3127.32	3127.32	3127.32
Heat from oil (Kcal)	29268.59	29268.59	29268.59	29268.59	29268.59
Heat from coal(Kcal)	7798413.37	7798413.37	7798413.37	7798413.37	7798413.37
Transit Loss(%)	0.8%	0.8%	0.8%	0.8%	0.8%
Total Coal consumption including transit loss(MT)	2143122.95	2143922.95	2143122.95	2143122.95	2143122.95
Cost of oil(Rs/KL)	40083.17	40083.17	40083.17	40083.17	40083.17
Cost of coal(Rs./MT)	3349.81	3349.81	3349.81	3349.81	3349.81
Total cost of oil (Rs.Cr.)	12.54	12.54	12.54	12.54	12.54
Total cost of coal (Rs.Cr.)	717.91	717.91	717.91	717.91	717.91
Energy charge rate (Rs./kWh)	2.58	2.58	2.58	2.58	2.58

Commission's Analysis

6.16 As per Clause 17.14 of JSERC Generation Tariff Regulations, 2020, which states:

“Initially, the Base value of price of fuel oils, price of coal incurred by the Generating Company/ generating station shall be taken based on actuals of the weighted average price of the three preceding months and in the absence of weighted average landed costs for the three preceding months, latest respective weighted average procurement price for the generating station, before the start of the year.”

6.17 Also as per clause 17.8 of JSERC Generation Tariff Regulations, 2020, the energy charge rate (in Rs/kWh) on ex-power plant basis shall be determined to three decimal places in accordance with the following formulae:

“For coal-based stations and lignite fired stations:

$$\text{Energy Charge Rate (ECR)} = \{(\text{SHR} - \text{SFC} \times \text{CVSF}) \times \text{LPPF} / \text{CVPF} + \text{SFC} \times \text{LPSFi} + \text{LC} \times \text{LPL}\} / (1 - \text{Aux})$$

For gas and liquid fuel-based stations:

$$\text{ECR} = \text{SHR} \times \text{LPPF} / \{\text{CVPF} \times (1 - \text{Aux})\}$$

Where, Aux: Normative auxiliary energy consumption (%);

CVPF: (a) Weighted Average Gross calorific value of coal as received, in kcal per kg for coal based stations;

(b) Weighted Average Gross calorific value of primary fuel as received in kcal per kg, per litre or per standard cubic meter, as applicable for lignite, gas and liquid fuel based stations;

(c) In case of blending of fuel from different sources, the weighted average Gross calorific value of primary fuel shall be arrived in proportion to blending ratio.

CVSF: Calorific value of secondary fuel (kcal/ml);

ECR - Energy Charge Rate (Rs. /kWh);

SHR - Gross Station Heat Rate (kcal/kWh);

LC = Normative limestone consumption (kg/kWh);

LPPF - Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable, during the month. (In case of blending of fuel from different sources, the weighted average landed price of primary fuel shall be arrived in proportion to blending ratio);

LPSFi=Weighted Average Landed Price of Secondary Fuel in Rs. /ml during the month;

LPL = Weighted average landed price of limestone in Rupees per kg;

SFC - Specific fuel oil consumption, in ml per kWh

- 6.18 The Commission has calculated the ECR to be charged by the Petitioner as per the formula stated above and considered the approved values of the various fuel parameters. The table below contains the ECR for each year of

the Control Period i.e. from FY 2021-22 to FY 2025-26 as approved by the Commission.

Table 48 Energy charge rate as approved by the Commission for FY 2021-22 to FY 2025-26

Particulars	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Capacity(MW)	420	420	420	420	420
PLF(%)	85%	85%	85%	85%	85%
Gross Generation(MUs)	3127.32	3127.32	3127.32	3127.32	3127.32
Auxiliary Consumption(%)	9.5%	9.5%	9.5%	9.5%	9.5%
Net Generation(MUs)	2830.22	2830.22	2830.22	2830.22	2830.22
Station Heat Rate(Kcal/kWh)	2547	2547	2547	2547	2547
Secondary fuel oil consumption(ml/kWh)	1	1	1	1	1
Gross Calorific value of coal(kcal/kg)	3583.15	3583.15	3583.15	3583.15	3583.15
Gross Calorific value of oil(Kcal/Kl)	9359	9359	9359	9359	9359
Total heat required(kcal)	7965284.04	7965284.04	7965284.04	7965284.04	7965284.04
Oil consumption(KL)	3127.32	3127.32	3127.32	3127.32	3127.32
Heat from oil (Kcal)	29628.59	29628.59	29628.59	29628.59	29628.59
Heat from coal(Kcal)	7936015.45	7936015.45	7936015.45	7936015.45	7936015.45
Transit Loss(%)	0.8%	0.8%	0.8%	0.8%	0.8%
Total Coal consumption including transit loss(MT)	2232533.83	2232533.83	2232533.83	2232533.83	2232533.83
Cost of oil(Rs/KL)	40083.17	40083.17	40083.17	40083.17	40083.17
Cost of coal(Rs./MT)	3349.81	3349.81	3349.81	3349.81	3349.81
Total cost of oil(Rs.Cr.)	12.54	12.54	12.54	12.54	12.54
Total cost of Fuel(Rs.Cr.)	760.39	760.39	760.39	760.39	760.39
Energy charge rate (Rs./kWh)	2.687	2.687	2.687	2.687	2.687

Determination of Fixed Cost

Depreciation

Petitioners Submission

- 6.19 The Petitioner has submitted depreciation expenses for the third control period as shown in the table below:

Table 49 Depreciation expense(Rs.Cr) as projected by the Petitioner for FY 2021-22 to FY 2025-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Depreciation	7.15	15.26	22.72	28.61	36.02

Commissions Analysis

- 6.20 The Commission after analyzing the documents and submission made by the Petitioner observes that the Petitioner has submitted fixed asset register as uploaded by the Petitioner on yearly basis in SAP-ERP system. However, the Petitioner has not conducted physical verification of assets.

- 6.21 The Commission with reference to clause 15.33 which specifies as follow:

“15.33 The Commission may, in the absence of the Fixed Assets Register, calculate Depreciation (%) arrived by dividing the Depreciation and the Average Gross Fixed Assets as per the latest available Audited Accounts of the Generating Company. The Depreciation (%) so arrived shall be multiplied by the Average GFA approved by the Commission for the relevant Financial Year to arrive at the Depreciation for that Financial Year.”

- 6.22 The Commission also has taken into account the fact that the Petitioner has not conducted true up exercise of the plant since FY 2016-17 till FY 2020-21. Once the audited accounts of FY 2020-21 are available for true-up, the Commission shall review the depreciation for the entire period of FY 2016-17 to FY 2020-21 and make any necessary adjustments as stipulated in the Regulations.
- 6.23 The Commission has also taken into consideration the fact as mentioned in approval of business plan section that both the units of the plant have already exhausted its useful life, however, the Petitioner has submitted RLA report for Unit-1 which authenticates the operability for unit-1 for next 5

years, stating further, that the Life Assessment of Unit – II shall be carried out during the Capital Overhauling.

- 6.24 Considering the information presented in above para and the fact that the Petitioner has not conducted true up exercise of the plant since FY 2016-17, hence the Commission is not inclined to accept the depreciation submitted by the Petitioner in the MYT Petition. The Commission has however referred to the provisional accounts of FY 2020-21 submitted by the Petitioner and observed that the GFA as per accounts as on 31.03.2021 is Rs 1646.82Cr. The accumulated depreciation as on 31.03.2021 is Rs.1390.58 Cr which is 84.44% of the GFA.
- 6.25 Considering 10% salvage value, i.e. Rs. 164.68 Cr, the maximum depreciable value is Rs. 1482.13 Cr.
- 6.26 Based on the above facts, the Commission has decided to spread out the balance depreciable value i.e. Rs.91.55 Cr (Rs.1646.82- Rs1482.13) over the years of the third control period. However, the Commission shall review the same during the time of true up of the respective years i.e. FY 2021-22 to FY 2025-26. As of now the Commission approves the depreciation as given in the table below:

Table 50 Depreciation expense (Rs.Cr) as approved by the Commission for FY 2021-22 to FY 2025-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY25-26
Depreciation	18.31	18.31	18.31	18.31	18.31

- 6.27 The Commission hereby directs the Petitioner to reconcile the fixed assets and depreciation for the pending True-up of the previous MYT period and also for the current years in the MYT period. The True-up Petitions should be filed with reconciled Fixed Assets and Depreciation calculated as per Regulations.

Operation and Maintenance (O&M) Expense

Petitioners Submission

- 6.28 The Petitioner has submitted O&M expense which includes expenditure incurred in the operation and maintenance of the generating station, including employee cost, repairs and maintenance, consumption of stores and spares, water charges, ash disposal, pollution control cess, insurance

- and other administrative and general expenses of the Petitioner corporate office at Ranchi.
- 6.29 As discussed in the Business Plan, TVNL envisages no additional manpower recruitment during the Control Period FY 2021-22 to FY 2025-26 and hence has considered growth factor G_n as 0 for entire Control Period.
- 6.30 The employee costs (except the Terminal Benefits) for next control period has been projected on the basis of an inflationary increase of 6.09% (based on 45% weightage of WPI & 55% weightage of CPI) over actual employee cost of FY 2019-20.
- 6.31 As per Note-3 of Regulation 15.42 of the JSERC Generation Tariff Regulations, 2020, TVNL understands that Terminal Liabilities will be approved as per actuals submitted by the Generating Company along with documentary evidence at the time of True-up for the relevant year. For the purpose of present Petition, TVNL has considered terminal benefits for FY 2019-20 (consisting of Pension, Gratuity and NPS) for projection of Terminal Benefits during the Control Period, without any escalation. The same shall be trued up as per the actual terminal liabilities incurred by the Petitioner after due prudence check by the Commission.
- 6.32 Based on the above paragraphs, the Employee Expenses projected for the Control Period (FY 2020-21 to FY 2025-26) is tabulated below:

Table 51 Employee expense (Rs.Cr) as projected by the Petitioner for FY 2021-22 to FY 2025-26

Particulars	FY 20	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Employee expense-Base Year	86.90					
Inflation factor		6.09%	6.09%	6.09%	6.09%	6.09%
Employee expense projected		97.80	103.76	110.08	116.78	123.89
Terminal expense	48.11	48.11	48.11	48.11	48.11	48.11
Employee Expenses	135.01	145.92	151.87	158.19	164.89	172.00

- 6.33 TVNL has considered base A&G Expense of Rs. 22.97 crore as per provisional accounts for FY 2019-20. A&G Expense has been projected for next MYT control period for FY 2021-22 to FY 2025-26 at annual inflation rate of 6.09%

(based on 45% weightage of WPI & 55% weightage of CPI) for % increase over FY 2019-20 on annual basis. Based on the above, the projected A&G Expenses for the MYT Control Period (FY 22 to FY 26) is provided below:

Table 52 A&G expense(Rs.Cr) projected by Petitioner for FY 2021-22 to FY 2025-26

Particulars	FY 19-20	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
A&G Expense-Base Year	22.97					
Inflation Factor		6.09%	6.09%	6.09%	6.09%	6.09%
A&G expense		25.85	27.43	29.10	30.87	32.75

- 6.34 The Petitioner has referred to clause 15.42 (a) of the JSERC Generation Tariff Regulations, 2020 wherein R&M Expense is to be projected as per the following formulae: “(Repair & Maintenance)_n = K*GFA*(INDX_n/ INDX_{n-1}) Where, ‘K’ is a constant (expressed in %) governing the relationship between Repair & Maintenance costs and Gross Fixed Assets (GFA) and shall be calculated based on the % of Repair & Maintenance to GFA of the preceding years of the Base Year in the MYT Order after normalizing any abnormal expenses; ‘GFA’ is the opening value of the gross fixed asset of the nth year;”
- 6.35 The value of K, i.e, R&M expense as a percentage of opening GFA for the preceding year FY 2019-20 has been calculated as 5.30% as per JSERC Generation Tariff Regulations, 2020 as shown in the table below:

Table 53 Calculation of K Factor by the Petitioner

Particulars	FY 17	FY 18	FY 19	FY 20
Opening GFA	1588.5	1637.56	1637.75	1641.84
R&M expenses	88.31	111.07	79.68	65.74
R&M expense/Opening GFA	5.56%	6.78%	4.87%	4.00%
K factor (Avg of annual ratios)	5.30%			

- 6.36 Based on the above calculation of K factor the Petitioner has projected R&M expense for the third control period i.e. FY 2021-22 to FY 2025-26 as shown in the table below:

Table 54 R&M expense(Rs.Cr) projected by the Petitioner for FY 2021-22 to FY 2025-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Opening GFA	1642.88	1723.95	1790.30	1836.11	1885.49

K Factor	5.30%	5.30%	5.30%	5.30%	5.30%
Indexation Factor	6.09%	6.09%	6.09%	6.09%	6.09%
Total R&M expense	98.05	109.16	120.26	130.84	142.54

6.37 The summary of O&M expense as submitted by the Petitioner for FY 2021-22 to FY 2025-26 is shown in the table below:

Table 55 Summary of O&M expense (Rs.Cr) as projected by the Petitioner for FY 2021-22 to FY 2025-26

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Employee Expenses	97.80	103.76	110.08	116.78	123.89
Terminal Liability	48.11	48.11	48.11	48.11	48.11
A&G Expenses	25.85	27.43	29.10	30.87	32.75
R&M Expenses	98.05	109.16	120.26	130.84	142.54
Total	269.82	288.45	307.54	326.60	347.29

Commissions Analysis

6.38 The Commission, referring to definition 44 and Regulation 15.35 of the Generation Tariff Regulations, 2020 which specifies as follows:

“44. ‘Operation and Maintenance Expenses’ or ‘O&M expenses’ means the expenditure incurred for operation and maintenance of the project, or part thereof, and includes the expenditure on manpower, repairs and maintenance, spares, consumables, insurance and overheads, and fuel other than used for generation of electricity;”

“15.35 Operation and Maintenance (O&M) expenses shall comprise of the following:

- 1. Salaries, wages, pension contribution and other employee costs;*
- 2. Administrative and General costs;*
- 3. Repairs and maintenance expenses;”*

- 6.39 Further referring to clauses 15.40 to clause 15.44 of the generation Tariff, Regulations 2020 which specifies the methodology to be adopted for computation of employee expense, repair and maintenance expense and administrative and general expense referred as below:

“Existing Generating Stations

15.40 The O&M Expenses for the Base Year of the Control Period shall be approved by the Commission taking into account the audited accounts of FY 2015-16 to FY 2019-20, Business Plan filed by the Generating Company, estimates of the actual for the Base Year, prudence check and any other factor considered appropriate by the Commission.

15.41 The O&M expenses permissible towards ARR of each year of the Control Period shall be approved based on the formula shown below:

$O\&M_n = (R\&M_n + EMP_n + A\&G_n) + \text{Terminal Liabilities}$

Where, $R\&M_n$ – Repair and Maintenance Costs of the Generating Company for the n th year;

EMP_n – Employee Costs of the Generating Company for the n th year excluding terminal liabilities;

$A\&G_n$ – Administrative and General Costs of the Generating Company for the n th year

15.42 The above components shall be computed in the manner specified below:

*a) (Repair & Maintenance) $n = K * GFA * (INDX_n / INDX_{n-1})$*

Where, ‘K’ is a constant (expressed in %) governing the relationship between Repair & Maintenance costs and Gross Fixed Assets (GFA) and shall be calculated based on the % of Repair & Maintenance to GFA of the preceding years of the Base Year in the MYT Order after normalizing any abnormal expenses;

‘GFA’ is the opening value of the gross fixed asset of the n th year;

*b) $EMP_n + A\&G_n = [(EMP_{n-1}) * (1 + G_n) + (A\&G_{n-1})] * (INDX_n / INDX_{n-1})$*

Where, EMP_{n-1} – Employee Costs of the Generating Company for the $(n-1)$ th

year excluding terminal liabilities;

A&Gn-1 – Administrative and General Costs of the Generating Company for the (n-1)th year excluding legal/litigation expenses;

INDXn – Inflation factor to be used for indexing the employee cost and A&G cost. This will be a combination of the Consumer Price Index (CPI) and the Wholesale Price Index (WPI) for immediately preceding year before the base year;

Gn – is a growth factor for the nth year and it can be greater than or lesser than zero based on the actual performance. Value of Gn shall be determined by the Commission in the MYT Order for meeting the additional manpower requirement based on the Generating Company Filing, benchmarking and any other factor that the Commission feels appropriate;

*c) $INDXn = 0.55 * CPI_n + 0.45 * WPI_n$;*

Note-1: For the purpose of estimation, the same $INDXn/INDXn-1$ value shall be used for all years of the Control Period. However, the Commission will consider the actual values in the $INDXn/INDXn-1$ at the end of each year during the Annual Performance Review exercise and true up the employee cost and A&G expenses on account of this variation, for the Control Period;

Note-2: Any variation due to changes recommended by the Pay Commission or wage revision agreement, etc., will be considered separately by the Commission.

Note-3: Terminal Liabilities will be approved as per actual submitted by the Generating Company along with documentary evidence such as actuarial studies.

15.43 The Generating Company, in addition to the above details shall also submit the detailed break-up of the Legal/Litigation Expenses for the previous Years (FY 2015-16 to FY 2019-20) along with the details and documentary evidence of incurring such expenses. The Commission shall approve the legal expenses as per the relevant provisions of the Jharkhand State Litigation

Policy based on the necessary documentary evidence submitted for the Control Period and shall carry out due prudence check of legal expenses at the time of truing up.

15.44 The additional Operation and Maintenance expenses on account of implementation of revised emission standards shall be approved on case to case basis.”

6.40 The Commission has analyzed the submissions made by the Petitioner, and has noted the fact that the Petitioner has not conducted True Up of the second control period. In the absence of audited data for FY 2017-21 the Commission has considered the figures approved by the Commission for the second control period and has accordingly escalated the same with an escalation factor of 6.09% and has arrived at the figures for the third control period. However, the Commission shall consider additional expenditure incurred if any towards O&M expenses during true up of the respective years of the third control period provided that should be supported by audited accounts.

6.41 The Operation and Maintenance expense as approved by the Commission for the third control period i.e. FY 2021-22 to FY 2025-26 is given in the table below:

Table 56 Summary of O&M expense (Rs.Cr) as approved by the Commission for FY 2021-22 to FY 2025-26

Particulars	FY 20-21	Escalation	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Employee Expenses	55.13	6.09%	58.49	62.05	65.83	69.84	74.09
Terminal Liability	32.49		0	0	0	0	0
A&G Expenses	21.88	6.09%	23.21	24.63	26.13	27.72	29.40
R&M Expenses	58.49	6.09%	62.05	65.83	69.84	74.09	78.61
Total			143.75	152.51	161.79	171.65	182.10

Interest and Financing charges on Debt

Petitioners Submission

6.42 For computation of normative debt for next Control Period, the Petitioner has

considered the opening debt of Rs. 288.62 crore for FY 2016-17 as approved by the Hon'ble Commission during the last MYT order dated 28th February 2020, and capitalization during the Control Period between years FY 2016-17 and FY 2019-20 as available from the provisional balance sheets of each of the years.

- 6.43 The addition in normative loans has been taken as 70% of the capitalization for the year as per Regulation 15.6 and 15.7 of JSERC Generation Tariff Regulations 2020 and the repayment for a particular year has been considered equal to depreciation considered for that year as per Regulation 15.15 of JSERC Generation Tariff Regulations 2020. The capitalization and depreciation for FY 2020-21 has been taken as the values approved by the Hon'ble Commission during the last MYT order dated 28th February 2020 i.e. at 'nil' and Rs. 26.01 respectively.
- 6.44 In the Current Petition, the Petitioner has considered the Interest and Finance Charges for the control Period as given below:
- a) **Interest Charges on the loans outstanding as on 31st March 2021** - Refers to the interest charge payable by the Petitioner on the outstanding loans at the end of FY 21.
 - b) **Interest on additional capitalization** - Interest charges payable for the loans projected to be raised for additional capitalization projected for the Third Control Period i.e. FY 2021-22 to FY 2025-26. In accordance with the JSERC Generation Tariff Regulations 2020, the Normative Debt on account of Additional Capitalization has been considered as 70%.
 - c) **Repayment of Loan** - The repayment has been considered equal to the depreciation computed for the Control Period in accordance with the clause 15.15 of JSERC Generation Tariff Regulations 2020.
 - d) **Rate of Interest** - The Interest charges for the on-going loans have been considered as per the actual rate of Interest. For the new loans projected during the Control Period, the Interest Rate has been considered in accordance with clause 15.18 of JSERC Generation Tariff Regulations, 2020, i.e. SBI Base Rate plus 200 basis points. As on 01st April 2020, the SBI Base Rate was 7.00% and accordingly, the Interest Rate on Normative Loan comes out to be 9.00%.
- 6.45 Based on the Opening Normative Debt, Normative Debt addition during the Control Period on account of Additional Capitalization and Rate of Interest,

the Interest on Debt during the Third Control Period (FY 2021-22 to FY 2025-26) is calculated in the table below:

Table 57 Interest Cost as submitted by the Petitioner for the third control period(Rs.Cr)

Particulars	FY22	FY23	FY24	FY25	FY 26
Opening Balance	196.48	246.08	277.26	286.61	292.57
Loan received during the year	56.75	46.44	32.07	34.57	76.48
Repayment during the year	7.15	15.26	22.72	28.61	36.02
Balance outstanding at the end of the year	246.08	277.26	286.61	292.57	331.23
Average Loan	221.28	261.67	281.94	289.59	311.90
Rate of interest	9.40%	9.40%	9.40%	9.40%	9.40%
Interest cost	20.80	24.60	26.50	27.22	29.32

6.46 The outstanding loans of TVNL from the Govt. of Bihar, Govt. of Jharkhand and BSEB as on 31.03.2020 stands as follows:

Table 58 Outstanding long term loans as submitted by Petitioner(Rs.Cr)

Particulars	FY17	FY18	FY19	FY20
Loan from Govt of Bihar	608.9	608.9	608.9	608.9
Loan from Govt of Jharkhand	57.00	57.00	57.00	57.00
Loan from BSEB	168.40	168.40	168.40	168.40
Interest accrued on Govt of Bihar Loan	2177.00	2271.38	2365.50	2459.88
Interest accrued on Govt of Jharkhand Loan	107.99	116.83	123.81	132.65
Rate of Interest(%)	15.5%	15.5%	15.5%	15.5%

6.47 TVNL has considered a rate of interest as 15.50% to calculate the interest cost on long term outstanding loans for the Control Period FY 2021-22 to FY 2025-26:

Table 59 Interest cost on long term outstanding loans for the control period FY 2021-22 to FY 2025-26(Rs.Cr)

Particulars	FY 22	FY 23	FY 24	FY 25	FY 26
Loan from Govt of Bihar	608.90	608.90	608.90	608.90	608.90
Loan from Govt of Jharkhand	57.00	57.00	57.00	57.00	57.00

Rate of Interest(%)	15.5%	15.5%	15.5%	15.5%	15.5%
Yearly interest on Govt of Bihar Loan	94.38	94.38	94.38	94.38	94.38
Yearly Interest on Govt of Jharkhand Loan	8.84	8.84	8.84	8.84	8.84
Total Interest Cost	103.21	103.21	103.21	103.21	103.21

6.48 The petitioner has requested the Hon'ble Commission to approve the Interest Cost as projected above.

Commissions Analysis

- 6.49 The Commission has analyzed the submission made by the Petitioner in its MYT Petition and has found that the normative loan of the Petitioner for previous MYT period is not completed yet, moreover the Petitioner has also not repayed any installment pertaining to long term loan as borrowed from State Govt of Bihar and Jharkhand and as such the interest cost pertaining to long term loans has piled up to a huge extent. The Petitioner has also submitted that due to partial and late payment of dues from JBVNL the Petitioner is unable to make the repayment. The Commission observes an inefficiency on part of the Petitioner for accumulation of such huge interest amount.
- 6.50 The Commission also notes that the Petitioner has not conducted true up for the second control period and hence for the Tariff determination of current MYT period the Commission has considered normative loan balance for the years i.e. FY 2021-22 to FY 2025-26 based on the closing balance of FY 2020-21 from the MYT order dated 28.02.2020. i.e. Rs.158.58 Cr.
- 6.51 In accordance to Clause 15.18 of JSERC Generation Tariff Regulations, 2020, the Commission approves the Interest on Loan at interest rate 9% for both the Units as shown below.

Table 60 Interest on Loan(Cr) approved by the Commission for FY 2021-22 to FY 2025-26

Particulars	FY 2021-22	FY 2022-23	FY2023-24	FY 2024-25	FY 2025-26
Opening Balance	158.58	140.27	121.96	103.65	85.34
Addition	0	0.00	0.00	0.00	0.00
Repayment	18.31	18.31	18.31	18.31	18.31
Closing Balance	140.27	121.96	103.65	85.34	67.03
Average Loan	149.43	131.12	112.81	94.50	76.19
Rate of Interest	9.00%	9.00%	9.00%	9.00%	9.00%
Interest Amount	13.45	11.80	10.15	8.50	6.86

Return on Equity

Petitioners Submission

6.52 The Petitioner has considered an opening equity of Rs. 184.64 Cr. for FY 2016-17 as approved by the Hon'ble Commission in the last MYT Order dated 28th February 2020. The Commission has not approved any capital expenditure for the Control Period FY 2016-17 to FY 2020-21 due to delay in submission of detailed justifications in the Order on Petition for Multi Year Tariff for the period FY 2017- 21 dated 28th February 2020.

6.53 As there hasn't been a true-up after FY 2015-16, the Petitioner has considered the capitalization in the previous control period (FY 2016-17 to FY 2019-20) as per the values reflected in the provisional balance sheet for each of the years. The addition in the Equity has been considered at 30% of addition in GFA as per Regulation 15.6 and 15.7 of JSERC Generation Tariff Regulations 2020. The Petitioner has further considered no addition in GFA and equity for FY 2020-21 as per previous MYT order dated 28th February 2020. Accordingly Opening Equity for FY 2021-22 has been calculated at Rs. 200.95 Cr. as shown in the table below:

Table 61 Addition in equity during FY 17 to FY 20 as submitted by Petitioner(Rs.Cr)

Particulars	FY 17	FY18	FY19	FY20
Asset Capitalization(Rs.Cr)	49.06	0.19	4.08	1.05
Equity Component(%)	30%	30%	30%	30%
Equity Addition(Rs.Cr)	14.72	0.06	1.22	0.31

6.54 As can be seen from the above table, addition in equity in previous Control Period (FY 17-FY 20) was Rs. 16.31 crore and hence the opening equity for FY 2021-22 stands at Rs 200.95 crore (184.64+16.31). As per the Clause 15.10 of JSERC Generation Tariff Regulations 2020, the Return on Equity

shall be computed on post-tax basis at the base rate of 14.00%. 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. Based on the opening Normative Equity, addition during the Control Period on account of Additional Capitalization on RoE, the Return on Equity during the Second Control Period (FY 2016-17 to FY 2020-21) is provided in the table given below:

Table 62 Return on Equity(Rs.Cr) as submitted by the Petitioner for third control period

Particulars	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Opening Balance	200.95	225.27	245.18	258.92	273.74
Addition	24.32	19.90	13.74	14.81	32.01
Closing Balance	225.27	245.17	258.92	273.73	305.75
Average	213.11	235.22	252.05	266.33	289.75
Rate of Equity	14.00%	14.00%	14.00%	14.00%	14.00%
ROE	29.84	32.93	35.29	37.29	40.56

Commissions Analysis

- 6.55 The Commission, for the reasons cited in previous sections, is taking the closing equity balance of FY 2020-21 approved in MYT order dated 28.02.2020 as the opening equity for the current MYT period.
- 6.56 In accordance with Clause 15.9 of the JSERC Generation Tariff Regulations, 2020, and Clause 15.10 of Generation Tariff Regulation 1st Amendment 2023, the Commission approves the Return on Equity at 15.00%. as shown below.

Table 63 Return on Equity (Rs.Cr) as approved by the Commission for the third control period

Particulars	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Opening Balance	184.64	184.64	184.64	184.64	184.64
Addition	0.00	0.00	0.00	0.00	0.00
Closing Balance	184.64	184.64	184.64	184.64	184.64
Average	184.64	184.64	184.64	184.64	184.64
Rate of Equity	15.00%	15.00%	15.00%	15.00%	15.00%
ROE	27.70	27.70	27.70	27.70	27.70

Interest on Working Capital

Petitioners Submission

6.57 The Petitioner has projected the Interest on Working Capital (IOWC) requirement in accordance with Clause 15.23, Clause 15.26 of the JSERC Generation Tariff Regulations, 2020, as tabulated hereunder.

Table 64 Interest on Working Capital (Rs Cr) as submitted by the Petitioner for third control period

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Cost towards Coal for 50 days	98.35	98.35	98.35	98.35	98.35
Cost of Secondary fuel(2 months)	2.09	2.09	2.09	2.09	2.09
O&M Expenses (1 month)	23.49	25.04	26.63	28.22	29.94
Receivable equivalent to 2 months average billing	202.04	211.42	220.13	224.92	230.70
Maintenance Spares @20% O&M	56.36	60.09	63.91	67.72	71.86
Total Working Capital	382.52	396.98	411.10	421.29	432.93
Interest Rate	10.50%	10.50%	10.50%	10.50%	10.50%
Interest on Working Capital	40.16	41.68	43.17	44.24	45.46

Commissions Analysis

6.58 The Commission has outlined clause 15.23 and clause 15.26 JSERC Generation Tariff Regulation 2020 for the approval of interest on working capital for a generating station as reproduced below:

“15.23 The Commission shall determine the Working Capital requirement on normative basis for coal-based generating stations, which shall comprise the following components:

- 1. Cost of coal or lignite and limestone towards stock, if applicable, for 10 days for pit-head generating stations and 20 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal/lignite stock storage capacity, whichever is lower;*
- 2. Cost of coal or lignite and limestone for 30 days for generation corresponding to normative annual plant availability factor;*
- 3. 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;*
- 4. Operation and Maintenance expenses, including water charge and security expenses for one month;*
- 5. Maintenance spares @ 20% of Operation and Maintenance Expenses;*
- 6. Receivables equivalent to 45days of capacity charges and energy charges for sale of electricity calculated on the Normative Annual Plant Availability Factor;*

Provided that the cost of primary fuel shall be based on the landed cost incurred (taking

into account normative transit and handling losses) by the generating station and gross calorific value of the fuel on 'as received basis' as per actual weighted average for three months preceding the first month for which tariff is to be determined:

Provided further that in case of new generating station, the cost of fuel for the first financial year shall be considered based on landed fuel cost (taking into account normative transit and handling losses) and gross calorific value of the fuel as per actual weighted average for three months, as used for infirm power, preceding date of commercial operation for which tariff is to be determined.

15.26 The rate of Interest on Working Capital shall be on normative basis and shall be equal to Bank Rate plus 350 basis points as on September 30 of the financial year in which the MYT Petition is filed on or as on April 01, of the year during the Control Period from FY 2021-22 to FY 2025-26 in which the generating station or a Unit thereof, is declared under commercial operation, whichever is later:

Provided that the rate of interest on working capital shall be trued up on the basis of Bank Rate plus 350 basis points as applicable on April 01, of the respective financial year at the time of true up."

- 6.59 Taking into account the above regulation, the Interest on Working capital has been calculated at an interest rate of 10.50% (Bank Rate plus 350 basis points) as specified in the clause 15.26 JSERC Generation Tariff Regulation, 2020 is given below.

Table 65 Interest on Working Capital(Rs.Cr) as approved by the Commission for third control period

Particulars	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26
Cost towards Coal for Generation 50 days	102.45	102.45	102.17	102.45	102.45
Cost of Oil for Generation (2 months)	2.06	2.06	2.05	2.06	2.06
O&M Expenses (1 month)	12.98	13.71	14.48	15.30	16.18
Receivables (45 days)	121.56	122.37	123.24	124.19	125.21
Maintenance Spares (20% O&M)	31.15	32.90	34.76	36.73	38.82
Total Working Capital	270.19	273.49	276.71	280.73	284.71
Interest Rate	10.50%	10.50%	10.50%	10.50%	10.50%
Interest on Working Capital	28.37	28.72	29.05	29.48	29.89

Water Charges

Petitioners Submission

- 6.60 The Petitioner in line with its submission and approved values of water

charges from last MYT order dated 28th February 2020 has projected water charges @ Rs. 1 Crore per month during the Control Period of FY 2021-22 to FY 2025-26 and has submitted as follows:

Table 66 Water Charges(Rs.Cr) as submitted by the Petitioner for third control period

Particulars	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Water Charges	12	12	12	12	12

Commissions Analysis

6.61 The Commission has outlined clause 9.1 of JSERC Generation Tariff Regulation (1st amendment) 2023 for the approval of water charge, capital spare, security spare for a generating station as reproduced below:

“15.46. The Water Charges, Security Expenses and Capital Spares for thermal generating stations shall be allowed separately after prudence check:

Provided that Water Charges shall be allowed based on water consumption, depending upon type of plant, type of cooling water system, subject to prudent check. The details regarding the same shall be furnished along with the Petition.

Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through special allowance as per Clause 14.11 and 14.12 of the Regulation or claimed as a part of additional capitalization or consumption of stores and spares and renovation and modernization”.

6.62 The Commission has scrutinized the details as submitted by the Petitioner and has observed that charges submitted by the Petitioner is in line with the approved values from the last MYT order i.e. for the second control period. Hence the Commission approves water charges for the third control period as mentioned in the table below:

Table 67 Water charges (Rs Cr) as approved by the Commission for the third control period

Particulars	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Water Charges	12	12	12	12	12

Special Allowance for Thermal Generating Stations

Petitioners Submission

- 6.63 The two units of TVNL (Unit – I and Unit – II) commenced operation in September 1996 and September 1997 respectively. They will be in commercial operation for more than 25 years as on 1st October 2021 and 1st October 2022 respectively. Thus as per Clause 14.2 of JSERC Generation Tariff Regulations, 2020 which states that:

“A Generating Company (coal-based/lignite fired thermal generating station) on opting for Special Allowance shall be allowed @ Rs. 9.50 lakh/MW/year for the Control Period from FY 2021-22 to FY 2025-26, Unit-wise from the financial year following the completion of useful life of the respective Unit of generating station: Provided that if a Unit is in commercial operation for more than 25 years as on April 01, 2021, this allowance shall be admissible from FY 2021-22:

Provided further that if special allowance is granted by the Commission, the expenditure incurred or utilized from special allowance shall be maintained separately by the generating station and details of same shall be made available to the Commission immediately thereafter.”

- 6.64 The Petitioner has claimed Special Allowance for Unit – I for the period FY 2022-23 to FY 2025-26 and for Unit – II for the period FY 2023-24 to FY 2025-26 as follows:

Table 68 Special Allowance(Rs.Cr) as claimed by the Petitioner for the third control period

Particulars	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Special Allowance @9.50 lakh/MW/year	0	19.95	39.90	39.90	39.90

Commissions Analysis

- 6.65 The Commission, referring to clause 14.2 of the Generation Tariff Regulations 2020 which mentions about provisions for special allowance for plant in operation beyond its useful life i.e. 25 years notes that both the units of the plant has exhausted the useful life of 25 years i.e. Unit-1 has completed its useful life on 2021 and Unit-2 has completed its useful life on 2022 respectively.
- 6.66 The Petitioner vide Letter No./Ref 643/23-24 dated 29th September, 2023

has submitted the Life Assessment report of Unit – I. Stating further, that the Life Assessment of Unit – II shall be carried out during the Capital Overhauling.

- 6.67 Further, the RLA Study certificate conducted by M/s Becquerel Industries Pvt. Ltd. vide letter dated 29th September, 2023 submits along with TVNL letter dated 29th September, 2023 certifying the turbine and generator as fit for use for a period of 5 years, subject to annual periodic inspections conducted through Non-destructive Testing (NDT) method. The certificate serves as a testament to the equipment's compliance with safety standards and its suitability for continued operation.
- 6.68 However, as the Residual Life Assessment report for Unit-2 is not yet conducted hence the Commission is not inclined to provide special allowance for both the units. As such the Commission is not allowing special allowance for both the units however the Commission may consider the same during the time of true up for the said control period. The Commission also directs the Petitioner to complete RLA study for Unit-2 at the earliest.

Table 69 Special Allowance(Rs.Cr) as approved by the Commission for third control period

Particulars	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Special Allowance @9.50 lakh/MW/year	0	0	0	0	0

Summary of Annual Fixed Charge (AFC) for MYT Control Period FY 2021-22 to FY 2025-26

Petitioners Submission

- 6.69 The table below provides the summary of the annual capacity charges claimed in the instant petition on account of Multi Year Tariff for FY 2021-22 to FY 2025-26:

Table 70 Summary of Fixed charge(Rs.Cr) as submitted by the Petitioner for MYT third control period i.e. FY 2021-22 to FY 2025-26

Particulars	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
O&M Expense	269.82	288.45	307.54	326.60	347.29
Depreciation	7.15	15.26	22.72	28.61	36.02

Interest on Normative Loan	20.80	24.60	26.50	27.22	29.32
Interest on Long term Loan	103.21	103.21	103.21	103.21	103.21
Return on Equity	29.84	32.93	35.29	37.29	40.56
Special Allowance	0.00	19.95	39.90	39.90	39.90
Water Charges	12.00	12.00	12.00	12.00	12.00
Interest on Working Capital	40.16	41.68	43.17	44.24	45.46
Less:Non-Tariff Income	18.00	18.86	19.75	20.69	21.68
Total Fixed Cost	464.97	519.23	570.59	598.38	632.08

Commission's analysis

6.70 The Commission, upon consideration of the submission and details furnished by the Petitioner and after scrutinizing and analyzing the same, approves the Annual Fixed Cost (AFC) for FY 2021-22 to FY 2025-26 which is summarized below:

Table 71 Summary of Fixed charge(Rs.Cr) as approved by the Commission for MYT third control period i.e. FY 2021-22 to FY 2025-26

Particulars	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
O&M Expense (excluding terminal liabilities)	143.75	152.51	161.79	171.65	182.10
Depreciation	18.31	18.31	18.31	18.31	18.31
Interest on	13.45	11.80	10.15	8.50	6.86

Normative Loan					
Return on Equity	27.70	27.70	27.70	27.70	27.70
Water Charges	12.00	12.00	12.00	12.00	12.00
Interest on Working Capital	28.37	28.72	29.05	29.48	29.89
Less: Non-Tariff Income	18.00	18.86	19.75	20.69	21.68
Total Fixed Cost	225.58	232.17	239.26	246.94	255.18

6.71 The Petitioner would recover the capacity charges in accordance with Clause 17.1 to Clause 17.5 of the Generation Tariff Regulations, 2020 on the basis of the actual monthly availability.

Chapter 7: DIRECTIVES

Timeliness and Data Adequacy in next Tariff Petition.

- 7.1 The Commission directs the Petitioner to file the next tariff Petition, after removing the deficiencies highlighted in this tariff order. The Petitioner should ensure that the data submitted to the Commission is accurate and justified with the adequate of the next tariff petition within the time frame as stipulated in the JSERC (Generation Tariff Regulation) 2020, and JSERC (Generation Tariff Regulation) 1st Amendment 2023.

Compliance of directives issued in earlier Orders

- 7.2 In addition to above, the Petitioner is also directed to submit the compliance to the directives issue by the Commission in its earlier Orders.

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)**

MEMBER (Technical)

**Sd/-
(Mahendra Prasad)**

MEMBER (Legal)

**Sd/-
(Justice Amitav Kumar Gupta)**

Chairperson

Chapter 8: ANNEXURE

List of members of public who participated in the Public Hearing and submitted their Suggestions/Comments

Table 72 Details of participants in the Public Hearing

Sr. No.	Name	Address/Organization
1	Rajesh Ranjan	ESE,TVNL
2	Ashish Kumar Sharma	ESE,TVNL
3	Anil Kumar Sharma	MD,TVNL
4	Uday Kumar Singh	ESE,TVNL
5	Anita Prasad	DGM,JBVNL
6	Ravi Kumar	JBVNL
7	Shri Ram Singh	ESE,TVNL
8	Nitish Kumar	AEE,TVNL
9	Shouvik Mukherjee	Sr.Consultant,Deloitte
10	Saurabh Jha	Director of Accounts
11	Krishna Kr.Singh	Dy.Director,Director of Accounts,TVNL
12	Nurul Hoda	ESE TVNL
13	PR Raman	PS TVNL
14	Shipra Sinni	JBVNL