Jharkhand State Electricity Regulatory Commission

MYT Order
on
Business Plan
and
Annual Revenue Requirement
and
Determination of Generation Tariff
for the
First control period
of
FY 2012-13 to 2015-16
for
Tenughat Vidyut Nigam Limited
(TVNL)

Ranchi

May 2012

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List of Abbreviations

Abbreviation	Description
A&G	Administrative and General
AAD	Advance Against Depreciation
ARR	Aggregate Revenue Requirement
CISF	Central Industrial Security Forces
COD	Commercial Operation Date
CWIP	Capital Work in Progress
DM	De-mineralised
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
Kcal	Kilocalorie
Kg	Kilogram
kWh	Kilowatt-hour
MGR	Merry-Go-Round
Ml	Millilitre
MT	Million Tonnes
MUs	Million Units
MW	Megawatt
O&M	Operations and Maintenance
PLF	Plant Load Factor
PPA	Power Purchase Agreement
R&M	Repair and Maintenance
RoE	Return on Equity
SERC	State Electricity Regulatory Commission
SLM	Straight Line Method

A1: INTRODUCTION

Jharkhand State Electricity Regulatory Commission (JSERC)

1.1 The Jharkhand State Electricity Regulatory Commission (herein after 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 w.e.f. April 24, 2003. The Electricity Act, 2003 (hereinafter referred to as "the Act" or "EA, 2003") came into force w.e.f. June 10, 2003; and the Commission is now deemed to have been constituted and functioning under the provisions of the Act.

1.2 The Government of Jharkhand vide its notification dated 22.08.2002 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 With the Electricity Act, 2003 being brought into force, the earlier Electricity Regulatory Commission Act of 1998 stands repealed and the functions of JSERC are now defined as per Section 86 of the Act.

1.4 In accordance with 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;

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;

(b) 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;

(c) facilitate intra-state transmission and wheeling of electricity;

(d) issue licences to persons seeking to act as transmission licensees, distribution licensees and electricity traders with respect to their operations within the State;

(e) 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;

(f) adjudicate upon the disputes between the licensees and generating companies; and to refer any dispute for arbitration;

(g) levy fee for the purposes of this Act;

(h) specify State Grid Code consistent with the Grid Code specified under Clause (h) of sub-section (1) of Section 79;

(i) specify or enforce standards with respect to quality, continuity and reliability of service by licensees;

(j) fix the trading margin in the intra-state trading of electricity, if considered, necessary;

(k) discharge such other functions as may be assigned to it under this Act.

1.5 The Commission advises the State Government 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) reorganisation 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 guided by the National Tariff Policy as brought out by GoI in compliance to Section 3 of the Act. The objectives of the National 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 (TVNL)

1.8 The Tenughat Vidyut Nigam Limited (TVNL) (hereinafter referred to as 'the Petitioner') is a wholly owned Generating Company of Government of Jharkhand and was constituted in 1987 under the Indian Company's Act, 1956.

1.9 The Petitioner operates two Units (Units I and II) of Tenughat Thermal Power Station that are the subject of tariff determination in the petition filed by it. Each unit has an installed power generation capacity of 210 MW. Unit I commenced its operations in September, 1996 and Unit II in September, 1997. With the creation of State of Jharkhand on November 15, 2000, the Petitioner is an undertaking of Government of Jharkhand.

1.10 The Petitioner has submitted that all the papers relating to Tenughat Thermal Power Station (TTPS) are still lying at the erstwhile office of the Petitioner located in Patna and in spite of the orders of the Jharkhand High Court; the Petitioner has not been able to access these documents. As such the details of the estimated costs of various items related to the project are not available to the Petitioner.

1.11 However, based on the expenditure details available with TTPS and discussions with the Petitioner, the total cost of the project at the time of CoD, including interest during construction (IDC), was approved as Rs 1247.04 Cr by the Commission in its previous Tariff Orders.

Status of PPA

1.12 The Petitioner entered into a Power Purchase Agreement (PPA) with JSEB on July 19, 2005. The PPA was executed on September 1, 2005 and was valid till August 1, 2010. However, Clause 10 of the general terms and conditions of the said PPA states that in case JSEB continues to receive power from TVNL even after expiry of the agreement without further renewal of formal extension thereof, then all the provisions of the said agreement shall continue to operate till the said agreement is formally extended, reviewed and replaced.

1.13 As per the PPA, the applicable rate for sale of energy by the Petitioner to JSEB will be the rate decided by the Commission at delivery point. The Commission in its previous Tariff Orders for FY 2010-11 and FY 2011-12 had directed the Petitioner to renegotiate its PPA with JSEB at the earliest and also to get the same ratified by the Commission.

1.14 The Petitioner has submitted that as per the directive of the Commission, it has already sent a draft PPA to JSEB for approval vide letters dated October 11, 2010 and June 3, 2011 but even after repeated reminders, JSEB has not responded to the matter.

1.15 It has further stated that the total outstanding dues on JSEB as on October 31, 2011 is approximately Rs.2663 Cr and JSEB is neither making regular payment for running both Units nor it is entering into fresh Power Purchase Agreement (PPA) based on two part tariff, as such it has no option but to restrict the power supply equal to LC amount only.

1.16 The Commission also directed the Petitioner and JSEB to execute the PPA within one month of the issue of the Tariff Order for FY 2011-12. The Commission stated that if JSEB does not comply with the directive within one month of the issue of the Order, then the Petitioner, after getting the PPA ratified by the Commission, can treat it as final.

1.17 The Petitioner has submitted that JSEB has not complied with the repeated directives of the Commission and the revised PPA is still pending before the JSEB.

Scope of the present order

1.18 This Order relates to the Business Plan and MYT petition filed by the Petitioner before the Commission for:

(a) True-up of ARR for FY 2010-11 based on audited data submitted by the Petitioner;

(b) Revision of ARR for FY 2011-12 based on latest actual data for seven months and estimated data for remaining five months;

(c) Approval of Business Plan for the first MYT Control Period (FY 2012-13 to FY 2015-16); and

(d) Determination of ARR and tariff for the first MYT Control Period (FY 2012-13 to FY 2015-16)

in accordance with Sections 61, 62, 64 and 86 of the Act and provisions of the JSERC (Terms and Conditions for Thermal Generation Tariff) Regulation, 2004 (hereinafter referred to as 'Generation Tariff Regulations, 2004') and provisions of the JSERC, (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010 (hereinafter referred to as 'Generation Tariff Regulations, 2010').

1.19 While conducting the true up for FY 2010-11, the Commission has taken into consideration the following:

(a) Provisions of the Electricity Act, 2003;

(b) Provisions of the National Electricity Policy;

(c) Provisions of the National Tariff Policy;

(d) Power Purchase agreement between the Petitioner and JSEB; and

(e) Principles laid down in the 'Generation Tariff Regulations, 2004'.

1.20 For revision of tariff for FY 2011-12, approval of Business Plan and determination of tariff for the first MYT Control Period, the Commission has taken into consideration the following:

(a) Provisions of the Electricity Act, 2003;

(b) Provisions of the National Electricity Policy;

(c) Provisions of the National Tariff Policy;

(d) Power Purchase agreement between the Petitioner and JSEB; and

(e) Principles laid down in the 'Generation Tariff Regulations, 2004'; and

(f) Principles laid down in the 'Generation Tariff Regulations, 2010'.

A2: PROCEDURAL HISTORY

Background

2.1 The Generation Tariff Regulations, 2010 require the Petitioner to file before the Commission a Business Plan for the MYT Control Period by June 1, 2011 and the subsequent MYT Petition by November 1, 2011. However, in view of the delay in filing of the petition and subsequent passing of the Tariff Order for FY 2011-12 for the Petitioner, the Commission, directed the Petitioner to file the MYT Petition along-with the Business Plan for the first Control Period as per the MYT Framework by December 7, 2011.

2.2 The Petitioner vide his letter no. 823/11-12 dated December 03, 2011 requested the Commission to grant more time as the petition will be placed before their Board of Directors for approval and sought time till December 25, 2011.

2.3 Subsequently, the Petitioner submitted the petition for approval of true up of ARR for FY 2010-11, revision of ARR for FY 2011-12, Business Plan for the Control Period (FY 2012-13 to FY 2015-16), and for determination of ARR and Generation tariff for the Control Period (FY 2012-13 to FY 2015-16) on December 23, 2011.

Information Gaps in the MYT Petition

2.4 As part of the tariff determination exercise for the true up for FY 2010-11, revised estimated for FY 2011-12 and ARR & Tariff determination for the Control Period, on scrutiny by the Commission, several deficiencies/information gaps were observed in the tariff petition submitted by the Petitioner.

2.5 The information gaps observed in the petition were communicated to the Petitioner through written communication vide–

(a) Letter No. JSERC/34/2011/781 dated February 10, 2012;

(b) Letter No. JSERC/legal/34/2011/86 dated April 30, 2012;

(c) Letter No. JSERC/legal/34/2011/108 dated May 03, 2012;

(d) Letter No. JSERC/legal/34/2011/159 dated May 17, 2012; and

(e) Letter No. JSERC/legal/34/2011/178 dated May 22, 2012.

2.6 The Petitioner subsequently submitted its response and provided the requisite data vide –

(a) Letter No. 1048/11-12 dated February 24, 2012;

(b) Letter No. 1126/11-12 dated March 26, 2012;

(c) Letter No. 1145/11-12 dated March 31, 2012;

(d) Letter No. 119/12-13 dated May 11, 2012;

(e) Letter No. 136/12-13 dated May 17, 2012; and

(f) Letter No. 148/12-13 dated May 23, 2012.

2.7 The Commission scrutinized the additional data/information and on its validation, has passed this Order on the Business Plan and MYT Petition filed by the Petitioner.

Inviting Comments/Suggestions from the Public

2.8 After the acceptance of the Business Plan and MYT Petition filed by the Petitioner, the Commission directed the Petitioner to make available copies of the same to the members of general public on request, and also issue a public notice inviting comments/ suggestions on the Business Plan and the MYT Petition.

2.9 The aforesaid public notice was issued by the Petitioner in various newspapers and a period of thirty (30) days was given to the members of the general public for submitting their comments/suggestions.

Table 1: List of newspapers and dates on which the public notice by TVNL appeared

Newspaper	Date
Prabhat Khabar (Hindi)	01.03.2012 & 02.03.2012
The Hindustan Times (English)	01.03.2012 & 02.03.2012
The Pioneer (English)	01.03.2012 & 02.03.2012
Dainik Jagran (Hindi)	01.03.2012 & 02.03.2012

2.10 Subsequently, the Commission also issued a notice on its website www.jserc.org and in various newspapers for conducting the public hearing on the Business Plan and the MYT Petition filed by TVNL. The details of the newspapers wherein the notice was issued by the Commission are as under:

Table 2: List of newspapers and dates on which the public notice was issued by JSERC

Newspaper	Date
Hindustan	14.04.2012
Prabhat Khabar	14.04.2012
Sanmarg	14.04.2012
The Pioneer	14.04.2012
Quami Tanzeem (Urdu Daily)	14.04.2012
Dainik Jagran	15.04.2012
AAJ	15.04.2012
Ranchi Express	15.04.2012
The Hindustan Times (English)	15.04.2012

Submission of Comments/Suggestions and Conduct of Public Hearing

2.11 No comments/suggestions were received on the petition. A public hearing was held on April 16, 2012 at the Commission's office in Ranchi wherein the Petitioner presented a summary of the Petition filed by it to the Commission. The list of participants is attached as **Annexure-I.**

A3: SUMMARY OF THE BUSINESS PLAN AND MYT PETITION FILED BY THE PETITIONER

Overview of the Thermal Stations

3.1 The Petitioner operates two Units (Units I and II) of Tenughat Thermal Power Station (TTPS) that are the subject of tariff determination in the petition filed by it. Each unit has an installed power generation capacity of 210 MW. Unit I commenced its operations in September, 1996 and Unit II in September, 1997. With the creation of State of Jharkhand on November 15, 2000, the Petitioner is an undertaking of Government of Jharkhand.

Summary of the Business Plan for MYT Control Period (FY 2012-13 to FY 2015-16)

3.2 The Petitioner has submitted Trajectory for Performance Parameters, Investment Plan and Operation and Maintenance Expenses Plan in its MYT Business plan.

Trajectory for Performance Parameters

3.3 The Petitioner in its Business Plan has submitted the trajectory for achievable station heat rate and improvements in auxiliary consumption and performance parameters during the Control Period. The same are summarized in the table below:

Table 3: Performance Trajectory for the Control Period as submitted by the Petitioner

Performance Plan	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
SHR (Kcal/kWh)	2980	2950	2900	2850
Aux. consumption	10.00%	9.75%	9.50%	9.50%
PAF	85%	85%	85%	85%
Specific oil consumption (ml/kWh)	2.50	2.25	2.00	2.00

Investment Plan and O&M Expenses Plan

3.4 The Petitioner submitted that it has capitalized assets worth Rs. 21.19 Cr in FY 2010-11 and has proposed revised estimates for capital investment of Rs. 31.19 Cr during FY 2011-12.

3.5 The Petitioner has further proposed capital investment of Rs. 60.53 Cr in FY 2012-13, Rs. 54.92 Cr in FY 2013-14, Rs. 49.90 Cr in FY 2014-15, Rs. 40.80 Cr in FY 2015-16.

3.6 The Petitioner has projected O&M expenses for each year of the Control Period i.e. from FY 2012-13 to FY 2015-16 in its MYT Business Plan. The submission of the Petitioner regarding O&M expenses is summarized in the table below.

Table 4: Submitted O&M expenses for Control Period (Rs Cr)

	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Estimated O&M Expenses	139.87	151.36	164.39	179.16

Summary of the MYT Petition for the Control Period (FY 2012-13 to FY 2015-16)

True up of FY 2010-11

3.7 The Petitioner has requested for true up of FY 2010-11 and has submitted the actual performance of the Units for FY 2010-11 on various operational and financial related parameters.

3.8 The energy charges and fixed cost as proposed by the Petitioner for FY 2010-11, are summarised in the following table:

Table 5: Submitted Plant parameters and Fuel cost determinants for FY 2010-11

Parameters	Actual as per Finalized Accounts for FY 2010-11
Capacity in M W	420
PLF (Overall in %) Unit-I & Unit-II	66.69%
Gross Generation (MUs) - Unit-I & Unit-II	2,454
Auxiliary Consumption (%)	10.06%
Net Generation (MUs) -Overall	2,207
Station Heat Rate (kCal/kW h)	2,985
Gross Calorific Value of Coal (Kcal/Kg)	4,080
Specific Oil Consumption (ml/kWh)	4.42
Gross Calorific Value of Oil (Kcal/KL)	9,359
Total Heat Required (Kcal)	7,324,608
Oil Consumption (KL)	10,855
Heat From Oil (Kcal)	101,593
Heat from Coal (Kcal)	7,223,015
Transit Loss (%)	0.30%
Total Coal Consumption including transit losses (MT)	1,775,643
Cost of Oil (Rs/Kl)	46,080
Cost of Coal (Rs/MT)	1,426
Total Cost of Oil (Rs Cr)	50.02
Total Cost of Coal (Rs Cr)	253.29
Total Fuel Cost (Rs Cr)	303.31
Per Unit Fuel Cost (Rs/Kwh)	1.37

Table 6: Submitted Fixed Charges for FY 2010-11 (Rs Cr)

Parameters	Actual as per Finalized Accounts for FY 2010-11
O&M Expenses	119.27
Depreciation	46.14
Interest on Loan	83.06
Return on Equity	21.10
Interest on Working Capital	15.58
Income Tax	0.00
Fixed Cost	285.15
Inefficient fixed cost disallowed	0.00
Total Fixed Cost	285.15

Revised estimation for FY 2011-12

3.9 In its ARR and tariff petition, the Petitioner has requested for revision of ARR of FY 2011-12 based on the actual performance from April 2011 to October 2011 and estimated performance for the remaining part of the year, based on the principles enshrined in Generation Tariff Regulations, 2010. The energy charges and fixed cost as submitted by the Petitioner for tariff period of FY 2011-12, are summarised in the following tables:

Table 7: Submitted Plant parameters and Fuel cost determinants for FY 2011-12*

Parameters	Revised Estimates for FY 2011-12
Normative Availability (%)	85%
PLF (Overall in %)	61.74%
Gross Generation (MUs) -Overall	2,278
Auxiliary Consumption (%)	10.29%
Net Generation (M us) -Overall	2,043
Station Heat Rate (kCal/kWh)	2,930
Gross Calorific Value of Coal (Kcal/Kg)	3,850
Specific Oil Consumption (ml/kWh)	2.87
Gross Calorific Value of Oil (Kcal/L)	9,359
Total Heat Required (Kcal)	6,674,193
Oil Consumption (KL)	6,528
Heat From Oil (Kcal)	61,096

Heat from Coal (Kcal)	6,613,097
Transit Loss (%)	0.30%
Total Coal Consumption including transit losses (MT)	1,722,928
Cost of Coal (Rs/M T)	1,612
Total Cost of Coal (Rs Cr)	277.69
Energy Charges (Rs/Kwh)	1.36

*As submitted in the ARR Petition

Table 8: Submitted Fixed Charges for FY 2011-12 (Rs. Cr)*

Parameters	Revised Estimates for FY 2011-12
O&M Expenses	120.73
Depreciation	70.91
Interest on Loan	79.87
Return on Equity	28.19
Interest on Working Capital	21.46
Income Tax	0.00
Cost of Secondary fuel oil	47.18
Total Fixed Cost	368.35

*As submitted in the ARR Petition

Annual Revenue Requirement and Generation Tariff for the first Control Period

3.10 The Petitioner has submitted that it has filed the MYT petition for the first Control Period in line with Generation Tariff Regulation, 2010. The energy charge rate and the fixed cost as submitted by the Petitioner for each year of the Control Period is shown in the following tables:

Table 9: Submitted Energy Charges for Control Period*

Details	Units	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Installed Capacity	MW	420	420	420	420
PLF	%	75%	76%	77%	78%
Gross Generation	MU	2759	2796	2833	2878
Auxiliary Consumption	%	10.00%	9.75%	9.50%	9.50%
Net Generation	MU	2483	2524	2564	2604
Heat Rate	kCal/kWh	2980	2950	2900	2850
Specific Oil Consumption	ml/kWh	2.5	2.25	2	2

Details	Units	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Total Coal cost	Rs. Cr	329.72	349.92	368.7	389.07
Energy Charge Rate	Rs./kWh	1.33	1.39	1.44	1.49

* As submitted in the ARR Petition

Table 10: Submitted Fixed Charges for Control Period *

Details	Units	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Cost of secondary fuel oil	Rs Cr	41.05	39.06	36.70	38.91
Depreciation	Rs. Cr	74.76	73.28	80.20	82.99
Interest on Loan	Rs. Cr	74.57	70.20	65.00	58.52
Return on Equity	Rs. Cr	32.22	34.34	37.34	40.25
Interest on Working Capital	Rs. Cr	27.27	28.65	30.20	31.94
O&M Expenses	Rs. Cr	139.73	152.14	165.26	179.29
Total Fixed Charges	Rs. Cr	389.60	397.67	414.69	431.90
Other income	Rs. Cr	10.21	10.21	10.21	10.21
Annual Fixed Charges	Rs. Cr	379.39	387.46	404.48	421.69

* As submitted in the ARR Petition

A4: APPROVAL OF THE BUSINESS PLAN FOR THE CONTROL PERIOD

4.1 The section deals with the MYT Business Plan comprising of Investment Plan, trajectory for Performance Parameters and Operation & Maintenance Expenses plan as submitted by the Petitioner and analysis done by the Commission for approval.

Investment plan

Petitioner's Submission

4.2 As part of the Business Plan, the Petitioner submitted a capital investment plan of Rs. 60.53 Cr in FY 2012-13, Rs. 54.92 Cr in FY 2013-14, Rs. 49.90 Cr in FY 2014-15 and Rs. 40.80 Cr in FY 2015-16. The break-up of capital Investment plan submitted by the Petitioner is given in the table below:

Table 11: Submitted Capital Investment Plan for the Control Period (Rs Cr)

Capital investment	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Control & Instrumentation	8.75	12.50	2.00	0.00
Chemistry (OPN)	0.00	0.00	0.00	0.00
Civil Works	0.00	5.00	6.00	5.00
MGR System	10.00	5.00	15.00	15.00
Electrical Deptt. (EMD) Works	20.38	18.30	1.65	0.25
Turbine Deptt. (TMD) Works	2.19	0.90	0.44	1.44
Boiler Deptt. (BMD) Works	4.91	5.97	5.36	5.36
Coal handling plant (CHP)	4.30	2.25	14.45	13.75
Land & Building for Guest House	10.00	5.00	5.00	0.00
Total	**60.53**	**54.92**	**49.90**	**40.80**

4.3 The proposed capitalization schedule corresponding to the capital investment submitted by the Petitioner is given in table below:

Table 12: Submitted Capitalization for the Control Period (Rs Cr)

Capitalization	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Control & Instrumentation	6.75	0.00	16.50	0.00
Chemistry (OPN)	0.00	0.00	0.00	0.00
Civil Works	0.00	5.00	1.00	15.00
MGR System	10.00	5.00	15.00	15.00
Electrical Dept. (EMD) Works	7.88	40.80	1.65	0.25
Turbine Dept. (TMD) Works	2.19	0.90	0.44	1.44
Boiler Dept. (BMD) Works	4.91	5.97	5.36	5.36

Capitalization	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Coal handling plant (CHP)	4.30	2.25	14.45	13.75
Land & Building for Guest House	0.00	0.00	20.00	0.00
Total	**36.03**	**54.92**	**74.40**	**50.80**

4.4 The Petitioner has proposed to fund the given capital investment with 70:30 debt-equity ratio with equity infusion expected from internal accruals and/or external equity support and loans from Govt. of Jharkhand.

Commission's Analysis

4.5 Upon scrutiny of the Business Plan submitted by the Petitioner, the Commission identified certain information gaps, which were communicated to the Petitioner. The information gaps identified are listed below:

(a) The Commission asked the Petitioner to submit a detailed (a) Cost Benefit Analysis (CBA) and (b) Detailed Project Report for each capital investment schemes proposed by the Petitioner, which is more in value than Rs 1 Cr. The Commission asked the Petitioner to submit the cost-benefit analysis clearly highlighting the expected increase in technical/operational performance of the plant due to implementation of the scheme and expected savings in cost. Further, any reduction in O&M expenses, savings due to reduction in machine breakdown etc should be mentioned in quantifiable terms.

(b) The Commission directed the Petitioner to submit a proper financing plan for funding the capital investment proposed for the control period.

(c) Clause 6.6 of the Generation Tariff Regulations, 2010 requires the Business Plan submitted by the generation company to be approved by the Board of Directors (BoD). The Commission asked the Petitioner to submit the certification that the Business Plan has been approved by the BoD.

(d) The Commission asked the Petitioner to submit the justification of the capital works-in-progress.

4.6 Further, the Commission observed that some of the schemes proposed by the Petitioner appeared to be O&M works and not capital works. The Commission highlighted those schemes to the Petitioner and asked it to provide justification for inclusion of such schemes in the capital investment plan.

4.7 However, the Commission did not receive required information from the Petitioner in response to its queries. In the absence of detailed project reports and cost benefit analysis, and other information/clarifications sought from the Petitioner, the Commission does not find it appropriate to approve the capital investment plan as per the Petitioner's submission.

4.8 The Commission analyzed the achievement of the Petitioner on capital expenditure incurred as well as assets capitalised in previous years as follows:

Table 13: Actual Capital investment and Capitalization in previous years (Rs Cr)

	FY 2007-08	FY 2008-09	FY 2009-10	FY 2010-11
Actual Capital Investment	40.50	3.76	15.35	35.78
Actual Capitalization	32.48	1.65	5.97	21.19
Average Capitalization	15.32			
Average % Capitalization	56%			

4.9 Based on the above past performance, the Commission has decided to allow the capital investment for each year of the Control Period at 50% of the proposed capital investment while capitalization has been allowed at 50% of the approved capital investment. The Proposed and approved capital investment and capitalization is given in table below:

Table 14: Approved Capital investment and Capitalization for the Control Period (Rs Cr)

	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Approved Capital Investment	30.27	27.46	24.95	20.40
Approved Capitalization	15.13	13.73	12.48	10.20

4.10 As stated in Clause 6.8 of the ‘Generation Tariff Regulations, 2010’, the Commission shall review the actual capital investment at the end of each year of the Control Period as a part of the Annual Performance Review of the Generating Company. The Generating Company shall submit the actual capital expenditure incurred along with the Annual Performance Review Filing.

4.11 The Commission also directs the Petitioner to submit the Detailed Project Report (DPR) and other related documents and take prior approval of the Commission for any capital scheme of value greater than or equal to Rs One Cr at least one month prior to commencement of proposed work.

4.12 Meanwhile, as stated in Clause 6.9 of the ‘Generation Tariff Regulations, 2010’, the Commission shall not revisit the approved Capital Investment Plan during the Control Period and any adjustment to depreciation, interest on working capital and return on equity for the actual capital investment undertaken vis-à-vis approved capital investment shall be done at the end of the Control Period.

4.13 Also as per Clause 6.10 of the 'Generation Tariff Regulations, 2010', the Commission shall also conduct a midterm review at the end of second year of the Control Period. In case, the cumulative incurred capital expenditure and/or capitalisation deviates from the approved capital expenditure / capitalisation by more than 20% (cumulative), the Commission will make necessary changes to capital investment plan for the Control Period after consultation with Petitioner and adjust depreciation and financing cost, which includes cost of debt (interest), working capital interest, cost of equity (return) based on the actual capital expenditure and/or capitalisation vis-à-vis approved capital expenditure / capitalisation.

Trajectory for Performance Parameters

Petitioner's Submission

4.14 The Petitioner submitted that it is going to undertake suitable investments and carry out suitable analysis by internal/external agencies to improve its operational performance. The achievable station heat rate and improvements in auxiliary consumption and performance parameters during the Control period are as tabulated below:

Table 15: Performance Trajectory for the Control Period as submitted by the Petitioner

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
SHR (Kcal/Kwh)	2980	2950	2900	2850
Aux. consumption (%)	10.00%	9.75%	9.50%	9.50%
PAF (%)	85%	85%	85%	85%
Specific oil consumption (ml/kWh)	2.50	2.25	2.00	2.00

Commission's Analysis

4.15 The Commission has dealt with operational parameters of the station in the section 7 of this Order.

Operation and Maintenance Expenses Plan

Petitioner's Submission

4.16 The Petitioner submitted that it has used three pronged approach to determine O&M expenses:

(a) Increase due to inflation: Weighted average of annual increase in WPI & CPI (60% weight age for WPI and 40% for CPI).

(b) Increase due to additional capitalization of assets & manpower additions on employee costs in the year

(c) Decrease due to efficiency measures undertaken by TVNL @ 2% for A&G expenses and R&M expenses

4.17 The projected O&M expenses submitted by the Petitioner are given in table below:

Table 16: Submitted O&M expenses for Control Period (Rs Cr)

Performance Plan	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Employee expenses	37.12	40.17	43.51	47.16
A&G expenses	19.75	21.17	22.69	24.32
R&M expenses	83.00	90.01	98.19	107.67
Total	**139.87**	**151.36**	**164.39**	**179.16**

Commission's Analysis

4.18 The Commission has dealt with operation and maintenance expenses in section 7 of this Order.

A5: TRUE UP FOR FY 2010-11

5.1 The Commission in its previous Tariff Order carried out provisional truing up of ARR for FY 2010-11 based on the information provided by the Petitioner. The Petitioner has now sought approval from the Commission for true up of variation in certain items of the ARR for FY 2010-11 on the basis of the audited accounts.

5.2 The Commission has analysed the submission of the Petitioner with respect to the ARR for FY 2010-11 and has undertaken the true up exercise of various components in accordance with the applicable regulations and methodology adopted by the Commission in previous Tariff orders, as the case may be. The component-wise description of the Petitioner's submission and the Commission's analysis thereof is provided hereunder.

Plant Load Factor (PLF)

Petitioner's submission

5.3 The Petitioner in its Tariff Petition submitted that the PLF for FY 2010-11 as per actual data now available for FY 2010-11 was 66.69% against the PLF of 74.88% approved by the Commission in its previous Tariff Order of FY 2011-12.

5.4 The Petitioner requested the Commission to allow the deemed PLF/PAF as the plant was unavailable due to the Back-down in operations forced by JSEB in FY 2010-11 causing a loss of 110 MUs.

Commission's analysis

5.5 The Commission scrutinized the submissions of the Petitioner and also asked for the details of the shutdown and Back-down in operations during FY 2010-11. The Commission observed that the submissions of the Petitioner were correct and there were indeed Back-downs being enforced by JSEB. The Commission takes a serious note of the Back-down leading to loss in generation of about 110 MUs in a Power deficit state like Jharkhand and would take up the matter with JSEB separately.

5.6 However, the Commission in the previous tariff Order had already allowed the Petitioner a lower PLF at 75% vis-à-vis PLF achieved by plants of similar nature and age across the country; and the loss of generation at 110 MU due to Back-down would also not have made a huge impact on the PLF. Therefore, the Commission approves PLF at the rate approved during Tariff Order of FY 2010-11 i.e.74.88%.

Gross Generation

Petitioner's submission

5.7 The Petitioner in its ARR & Tariff Petition submitted that the actual gross generation for both units was 2454 MUs based on the PLF of 66.69% for FY 2010-11.

Commission's analysis

5.8 The Commission approves gross generation of 2755 MUs for FY 2010-11 based on the approved PLF of 74.88%.

Auxiliary Consumption

Petitioner's submission

5.9 The Petitioner submitted the actual auxiliary consumption for both units for FY 2010-11 was 10.06%.

Commission's analysis

5.10 The Commission approved the auxiliary consumption at 9% for both units for FY 2010-11 which is the same as that approved in the Tariff Order for FY 2011-12.

5.11 Meanwhile, as stated in the previous tariff Order, the Commission reiterates that the Petitioner should take various measures to improve the auxiliary consumption of its power station. Some of the measures which can be taken are highlighted below:

(a) Conduct a plant based system-wise auxiliary consumption study (CHP, CW system, CHP, Milling System, Feedwater System, Ash Handling System) substantiated by Energy Meter data for principal load bearing equipment (BFP, CW Pump, ARCW Pumps, Mills, PA, FD & ID Fans etc, ESP System, Cooling Towers)

(b) Map the above against the design efficiency levels with ageing curves as provided by the manufacturer.

(c) Benchmark the system-wise auxiliary consumption with other 210 MW series machines of similar make and vintage and

(d) Provide a causal analysis of the observed gaps along with a roadmap to migrate to the best in class level through process interventions or equipment retrofits.

(e) Comprehensive energy audit of the plant may also be conducted by a certified EA agency.

Net Generation

Petitioner's submission

5.12 The Petitioner submitted the estimated net generation of 2207 MU on the basis of gross generation of 2454 MU and 10.06% auxiliary consumption.

Commission's analysis

5.13 The Commission approves net generation of 2507 MUs for FY 2010-11 based on the approved gross generation of 2755 MU and the auxiliary consumption of 9% for the said year.

Station Heat Rate (SHR)

Petitioner's submission

5.14 The Petitioner has submitted estimated SHR of 2985 kcal/kWh for FY 2010-11.

Commission's analysis

5.15 The Commission approved the SHR at the actual figures of 2985 Kcal/kWh for FY 2010-11 in the Tariff Order for FY 2011-12 and approves the same for final true up.

Specific Oil Consumption

Petitioner's submission

5.16 The Petitioner has submitted estimated specific oil consumption of 4.42 ml/kWh for both the Units for FY 2010-11.

Commission's analysis

5.17 The actual specific oil consumption of 4.42 ml/kWh is much higher than the norm of 2 ml/kWh specified in the 'JSERC Generation Tariff Regulations,2004'. Accordingly, the Commission approves the normative specific oil consumption of 2 ml/Kwh for FY 2010-11 as per the above regulations.

Gross Calorific Value (GCV) Of Primary and Secondary Fuel

Petitioner's submission

5.18 The Petitioner sources Grade D coal from the collieries of Central Coal Fields Limited. The gross calorific value of coal and oil were submitted as 4080 kcal/kg and 9359 kcal/kl respectively for FY 2010-11.

Commission's analysis

5.19 The Commission approved the actual GCV of coal and oil at 4080 kcal/kg and 9359 kcal/l respectively for FY 2010-11 in the Tariff Order for FY 2011-12 and since there is no change in the GCV for the two Units, the Commission approves the same for final true up.

Price of Primary and Secondary Fuel

Petitioner's submission

5.20 The Petitioner submitted the estimated landed coal price as Rs 1426/MT and landed oil price as Rs 46080/kl for FY 2010-11 on the basis of actual finalized accounts for FY 2010-11.

Commission's analysis

5.21 Based on the actual data provided in the audited accounts, the Commission approves the landed price of coal as Rs 1426 /MT and the landed price of oil as Rs 46080/kl for FY 2010-11.

Transit Loss

Petitioner's submission

5.22 The Petitioner submitted 0.3% transit loss of coal for FY 2010-11.

Commission's analysis

5.23 The norm for transition loss for FY 2010-11 is based on the 'Generation Tariff Regulations, 2004' which allows transit loss of 0.3% for pithead generating stations. Since the transit loss submitted by the Petitioner is in line with the said regulations, the Commission approved the transit loss of 0.3% for FY 2010-11.

Inefficient cost of TTPS

Petitioner's submission

5.24 The Petitioner requested the Commission to allow the Deemed PLF/PAF as the plant was unavailable due to Grid back down causing loss of 110 MUs in FY 2010-11.

Commission's analysis

5.25 The Commission asked the Petitioner to submit the detailed breakup of the loss of 110 MUs and the justification for the same. The Petitioner submitted details of shutdown/outages along with reasons for both the units for FY 2010-11 in the format specified by the Commission in its Tariff Order of FY 2011-12.

5.26 The Commission has analysed the submission made by the Petitioner. The back down was mainly due to uncontrollable reasons like very high system frequency and continuous under drawl by JSEB due to system failures and therefore is allowed by the Commission.

5.27 But the loss of generation due to the ineffieiciences of the Petitioner is considered seriously by the Commission.

5.28 The Commission has disincentivized the Petitioner for inefficiencies in meeting the target PLF and auxiliary consumption as approved in the previous Tariff Order for FY 2010-11. The computation of inefficient cost is in line with the methodology followed for the PTPS generation plant of JSEB in the JSEB Tariff Orders for FY 2006-07 and FY 2010-11. The following table summarizes the inefficient cost determined for TTPS for FY 2010-11:

Table 17: Inefficient Cost of TTPS

Months	UoM	Formula	FY 2010-11
Fuel Cost	Rs. Cr	A	311.88
Approved fuel Cost per unit	Rs/Kwh	B	1.24
Actual Net Generation	MU	C	2207.00
Targeted Net Generation	MU	D	2507.04
Loss of generation due to Grid Backing Down	MU	E	110
Shortfall in Generation	MU	F=D-C-E	190.04
Disallowed fuel cost	**Rs. Cr**	G=(F+E)*B	37.33
Approved Fuel Cost	Rs. Cr	H=A-G	274.55
Approved fixed Cost per unit	Rs./Kwh	I	0.95
Disallowed fixed cost	**Rs. Cr**	J=F*I	18.06
Total inefficient cost disallowed	**Rs. Cr**	K=G+J	55.39

Summary of Plant Parameters & Fuel Cost Determinants

5.29 The summary of plant parameters and fuel cost determinants for the two Units of Tenughat Thermal Power Station as approved by the Commission in the previous Tariff Order of FY 2011-12, as submitted by the Petitioner in its present Tariff Petition and now approved by the Commission for FY 2010-11 is given in the below table.

Table 18: Approved Plant parameters & Fuel Cost Determinants for FY 2010-11

Parameters	Formula	Unit	Unit 1 and 2		
			Approved by the Commission in the TO of FY 2011-12	Submitted by TVNL in the Petition	Now Approved by the Commission
Capacity	A	MW	420	420	420
PLF	B	%	74.88%	66.69%	74.88%
Gross Generation	C=Ax1000 x8760 x B/10^6	MU	2755	2454	2755
Heat Rate	D	kcal/kWh	2985	2985	2985
Specific oil consumption	E	ml/kWh	2.0	4.42	2.00
Calorific value of oil	F	kcal/kl	9359	9359	9359
Auxiliary Consumption	G	%	9.00%	10.06%	9.00%
Net Generation	H=C x (1-G)	MU	2507	2207	2507
Calorific value of coal	I	kcal/kg	4080	4080	4080
Overall heat	J=C x D	kcal	8224024	7324608	8224024
Oil consumption	K=C x E	kl	5510	10855	5510
Heat from Oil	L=K x F/1000	kcal	51568	101593	51568
Heat from coal	M=J-L	kcal	8172456	7223015	8172456
Transit Loss	N	%	0.30%	0.30%	0.30%
Consumption of Coal	O= M/I* 1000 /(1-N)	MT	2009045	1775643	2009045
Cost of oil per kl	P	Rs/kl	48300	46080	46080
Cost of coal per MT without transit loss	Q	Rs/MT	1424.05	1426	1426
Total cost of oil	R=P x K /10^7	Rs Cr	26.61	50.02	25.39
Cost of coal	S=OxQ/10^7	Rs Cr	286.10	253.29	286.49
Total Fuel Cost	T=R+S	Rs Cr	**312.71**	**303.31**	**311.88**
Per unit fuel cost	**U**	Rs/Kwh	**1.25**	**1.37**	**1.24**
Inefficient cost disallowed	**V**	Rs. Cr	**37.44**	**-**	**37.33**
Net Fuel cost allowed	**W**	Rs. Cr	**275.27**	**303.31**	**274.55**

Operation & Maintenance (O&M) Expenses

Petitioner's submission

5.30 The Petitioner submitted that actual O&M expenses for FY 2010-11 were Rs.119.27 Cr.

Commission's analysis

5.31 The Commission approves the O&M expenses for FY 2010-11 in line with the Generation Tariff Regulations, 2004. The O&M expenses approved for FY 2010-11 amounts to Rs 75.32 Cr, which is based on 2.50% of initial project cost of Rs 1247.04 Cr and average capitalisation in each year, escalated at the rate of 6% per annum till the FY 2010-11.

5.32 Further, the Commission has also approved an amount of Rs 7.84 Cr on account of sixth pay Commission for FY 2010-11.

5.33 Also an amount of Rs. 5.70 Cr has been approved on account of CISF cost for FY 2010-11 according to the data submission made by the Petitioner.

5.34 Total amount of O&M expenses approved for FY 2010-11 is Rs.88.87 Cr.

Depreciation

Petitioner's submission

5.35 The Petitioner has calculated the depreciation on historical capital cost of the assets. Depreciation is calculated annually as per the straight line method at the rates prescribed in the schedule attached in Appendix-II of the 'Generation Tariff Regulation, 2004'.

5.36 The depreciation expense submitted by the Petitioner for FY 2010-11 was Rs.46.14 Cr.

Commission's analysis

5.37 The depreciation expenses are calculated on the historical cost of the asset based on the straight-line method over the useful life of the asset. According to the 'Generation Tariff Regulations, 2004', depreciation is allowed up to a maximum of 90% of the historical cost of the asset.

5.38 The Commission computed the depreciation based on the asset classification, cost of acquisition and additional capitalisation submitted by the Petitioner and approves the depreciation charges of Rs 46.14 Cr for FY 2010-11, as was approved in the Tariff Order for FY 2011-12.

Interest on Loan

Petitioner's submission

5.39 The Petitioner submitted interest on loan for FY 2010-11 was Rs 83.06 Cr.

Commission's analysis

5.40 In view of the information submitted with the audited accounts, the submissions of the Petitioner and the interest on loans approved in previous tariff Order, the Commission approves interest on loan of Rs. 83.06 Cr for final true up of FY 2010-11.

Interest on Working Capital (IWC)

Petitioner's submission

5.41 The Petitioner has submitted the IWC for FY 2010-11 at Rs 15.58 Cr.

Commission's analysis

5.42 The working capital requirement for FY 2010-11 has been approved as per the 'Generation Tariff Regulations, 2004'. As per the Generation Tariff Regulations, 2004 the rate of interest on working capital is to be the short-term Prime Lending Rate of State Bank of India as on 1st April of the year for which the tariff is to be determined.

5.43 For FY 2010-11, the Commission approves the IWC at the rate of 11.75% which was the prevailing SBI PLR on 1st April 2010. The approved interest on working capital for FY 2010-11 is summarised below:

Table 19: Approved Interest on Working Capital (Rs Cr)

Particulars	Approved by the Commission in the TO of FY 2011-12	Submitted by TVNL in the Petition	Now Approved by the Commission
Cost of Coal for 1½ month	31.08		31.15
Secondary Fuel Oil for 1 month	2.22		2.12
Operation & Maintenance expenses for 1 month	6.28		6.28
Maintenance expenses @ 1% of Plant & Equipment	11.72		11.72
Receivables equivalent to 2 months of fixed and variable Charges	40.90		85.28
Total Working Capital	92.19		136.54
Interest on Working Capital	**10.83**	**15.58**	**16.04**

Return on Equity (RoE)

Petitioner's submission

5.44 The Petitioner submitted that the RoE during FY 2010-11 was Rs 21.10 Cr.

Commission's analysis

5.45 The Commission has allowed equity based on the approved capitalisation of Rs 21.19 Cr, in line with the methodology followed in the previous year.

5.46 Accordingly, the Commission approves return on equity at the rate of 14% on the average equity for the FY 2010-11 at Rs.21.10 Cr. The below table summarizes the return on equity approved for FY 2010-11:

Table 20: Approved Return on Equity (Rs. Cr.)

Particulars	Approved by the Commission in the TO of FY 2011-12	Submitted by TVNL in the Petition	Now Approved by the Commission
Initial Equity at the start of FY	140.09		140.09
Equity Infusion during FY	19.25		21.19
Equity at the end of FY	159.34		161.28
Average Equity considered for the year	149.715		150.69
Return on Equity (%)	14%		14%
Return on Equity (Rs Cr)	**20.96**	**21.10**	**21.10**

Non tariff Income

Petitioner's submission

5.47 The Petitioner submitted that actual non-tariff income for FY 2010-11 at Rs.16.91 Cr as summarized below:

Table 21: Actual Non tariff Income (Rs. Cr.)

Particulars	Submitted by TVNL in the Petition
Interest on fixed deposits	16.74
Income/Fee/Collection against staff welfare activities	0.03
Others	0.14
Total	16.91

Commission's analysis

5.48 Based on the actual data provided in the audited accounts, the Commission approves the Non Tariff Income at Rs.16.91 Cr for FY 2010-11.

Income Tax

Petitioner's submission

5.49 The Petitioner submitted that there was no assessable income for income tax and hence no tax on income has been estimated for the year FY 2010-11.

Commission's analysis

5.50 The Commission accepts the submission made by the Petitioner.

Summary of Fixed Cost Determinants

5.51 The summary of fixed cost determinants for the two Units of Tenughat Thermal Power Station as approved by the Commission in the previous Tariff Order, as submitted by the Petitioner in the present MYT Petition and now approved by the Commission for FY 2010-11 is given in the table below:

Table 22: Approved fixed cost determinants for FY 2010-11

Parameters	Unit	Unit 1 and 2		
		Approved by the Commission in the TO of FY 2011-12	Submitted by TVNL in the Petition	Now Approved by the Commission
O&M charges	Rs. Cr	84.41	119.27	88.87
Depreciation	Rs. Cr	46.15	46.14	46.14
Interest on Loan	Rs. Cr	83.06	83.06	83.06
Return on Equity	Rs. Cr	20.96	21.10	21.10
Interest on Working Capital	Rs. Cr	10.83	15.58	16.04
Total Fixed cost	Rs. Cr	245.41	285.15	255.21
Energy Cost	Rs. Cr	275.27	303.31	274.55
Total Expenses	Rs. Cr	**520.68**	**588.46**	**529.76**
Less Non-tariff Income	Rs. Cr	14.29	16.91	16.91
Less Inefficient Fixed cost of TTPS*	Rs. Cr	27.67		18.06
Net Total Expenses	Rs. Cr	**478.71**	**571.55**	**494.79**
Revenue at existing tariff	Rs Cr	457.74	450.70	452.44
(Gap)/Surplus for the year	Rs Cr	(20.97)	(120.85)	(42.35)

A6: REVISED ESTIMATES FOR FY 2011-12

6.1 The Petitioner has submitted the revised estimates for the transition period i.e. FY 2011-12 based on the actual generation and plant parameters for April 2011 to October 2011 and estimates for remaining 5 months.

6.2 The component-wise details of the Petitioner's submission and the Commission's analysis have been discussed in this Section.

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

Petitioner's submission

6.3 The Petitioner has projected the plant availability factor of 85% and PLF of 61.74% for FY 2011-12 against the approved plant availability factor of 85% and PLF of 75%.

6.4 The Petitioner has submitted that the plant has been unavailable for the following reasons during FY 2011-12:

(a) Non Availability due to Force Majeure: Collapse of Transmission towers in FY 2011-12 due to cyclone have resulted in loss of around 482 MUs.

(b) Non Availability of Coal as the Petitioner has been unable to pay CCL on regular basis due to its precarious financial situation caused due to continuing default by JSEB.

(c) Back-down in Operations forced by JSEB resulting in loss of generation.

Commission's analysis

6.5 As per 'Generation Tariff Regulations, 2010', the normative availability allowable for TTPS for FY 2011-12 is 85%, as was also approved by the Commission in the previous Tariff Order.

6.6 The Commission scrutinized the submissions of the Petitioner and also asked for the details of the shutdown and back-down in operations during FY 2011-12. The Commission observed that the submissions of the Petitioner were correct and there were indeed back-downs as well as unavailability of plant on account of collapse of transmission towers due to cyclone resulting in loss in generation. The Commission takes a serious note of the back-down by JSEB leading to loss in generation in a power deficit state like Jharkhand and would take up the matter with JSEB separately.

6.7 The Commission has observed that after taking in to account the non-availability of plant due to back down and cyclone, still there have been many shutdowns in the plant due to poor performance of the Petitioner. The Commission asked the Petitioner to submit a certificate from the SLDC on the actual average availability during the year FY 2011-12. However, the Petitioner has not been able to submit any details to verify the actual availability.

6.8 For the time being, the Commission has decided to consider the availability for FY 2011-12 at 85% subject to the fact that Petitioner needs to provide sufficient details on the actual availability for FY 2011-12 during the final true up. In case the Petitioner fails to provided details on the actual availability with the next petition, the Commission would make an assessment of the availability for FY 2011-12 and reduce the capacity charges in accordance with the Clause 8.11 of the ‘Generation Tariff Regulation, 2010’.

6.9 Meanwhile for the computation of gross generation, the Commission has considered the PLF for the year at 61.74%, as submitted by the Petitioner.

Gross Generation

Petitioner’s submission

6.10 The Petitioner has projected a gross generation of 2278 MUs for both the units based on the projected PLF for FY 2011-12.

Commission’s analysis

6.11 The Commission approves the gross generation of 2278 MUs for FY 2011-12 based on the approved PLF for the said year.

Auxiliary Consumption

Petitioner’s submission

6.12 The Petitioner has projected auxiliary consumption of 10.29% for FY 2011-12.

Commission’s analysis

6.13 Auxiliary consumption refers to the quantum of energy consumed by the auxiliary equipment of the generating station. Higher auxiliary consumption reduces the net generation of a generating station.

6.14 As per ‘Generation Tariff Regulations, 2010’, the auxiliary consumption specified for TTPS for FY 2011-12 is 9.50%. The Commission has considered the same for calculation of energy charge rate for the year.

6.15 For computation of net generation for the year, the Commission has considered the Auxiliary Consumption for FY 2011-12 at 10.29% as submitted by the Petitioner.

Net Generation

Petitioner's submission

6.16 The Petitioner has projected the net generation for the FY 2011-12 at 2043 MU.

Commission's analysis

6.17 The Commission has computed and approves the net generation at 2043 MU for FY 2011-12 considering the approved values of PLF and auxiliary consumption.

Station Heat Rate (SHR)

Petitioner's submission

6.18 The Petitioner has projected a SHR of 2930 kcal/kWh for FY 2011-12.

Commission's analysis

6.19 'Generation Tariff Regulations, 2010' specify SHR of 3043 kcal/kWh for TTPS station for FY 2011-12. The Commission has observed that the projected SHR for FY 2011-12 at 2930 kcal/kWh is better than the approved norms for FY 2011-12.

6.20 'Generation Tariff Regulations, 2010' clarifies that the norms of operation specified under the regulations are the threshold norms and this shall not preclude the generating company and the beneficiaries from agreeing to improved norms of operation and in such case improved norms shall be applicable for the determination of tariff. The Commission thus approves the SHR of 2930 kcal/kWh for FY 2011-12 as proposed by the Petitioner.

Specific Oil Consumption

Petitioner's submission

6.21 The Petitioner in its Tariff Petition has submitted that as per the 'Generation Tariff Regulations, 2010', the normative specific oil consumption for TTPS has been specified as 1 ml/kWh whereas historically the actual specific oil consumption has been in the range of 2.5-3.5 ml/kWh. Additionally, the Petitioner has projected the specific oil consumption for TTPS for FY 2011-12 at 2.87 ml/kWh.

Commission's analysis

6.22 The specific oil consumption is the amount of secondary fuel (in ml) consumed in the process of generation of one unit of power produced (in kWh). A lower specific oil consumption lowers the consumption of the secondary fuel in the generation process, and hence lowers the secondary fuel cost.

6.23 The Petitioner has claimed a specific oil consumption of 2.87 ml/Kwh. The Commission has notified the 'Generation Tariff Regulations, 2010', in consultation with all stakeholders including the Petitioner. As per these regulations, the norm for specific oil consumption has been fixed at 1ml/kWh for TTPS station for FY 2011-12.

6.24 Therefore, the Commission approved the specific oil consumption of 1 ml/kWh for FY 2011-12.

Gross Calorific Value (GCV) Of Primary and Secondary Fuel

Petitioner's submission

6.25 The projected gross calorific value of coal and oil submitted by the Petitioner is 3850 kcal/kg and 9359 kcal/kl respectively for FY 2011-12. The Petitioner sources Grade D coal from the collieries of Central Coal Fields Limited.

Commission's analysis

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

6.27 The Commission asked the Petitioner to submit the consumption and GCV of coal and oil for complete year of FY 2011-12. The Commission has analyzed the additional information submitted by the Petitioner and accordingly approve the GCV of coal as 4305.40 kcal/kg and GCV of oil as 9359 kcal/kl respectively for FY 2011-12.

Price of Primary Fuel

Petitioner's submission

6.28 The Petitioner has submitted the delivered coal price as Rs 1612/MT on the basis of 7 months of FY 2011-12.

Commission's analysis

6.29 The Commission asked the Petitioner to submit the consumption and price of coal for complete year of FY 2011-12. The Commission has analyzed the additional information submitted by the Petitioner and has accordingly considered the price of coal as Rs 1617.8/MT for FY 2011-12.

Summary of Plant Parameters & Fuel Cost Determinants

6.30 The summary of plant parameters and fuel cost determinants for the two Units of Tenughat Thermal Power Station as submitted by the Petitioner and approved by the Commission for FY 2011-12 is given in

Table 23: Plant parameters & Fuel Cost Determinants for FY 2011-12

Parameters	Unit I&II			
	Units	Approved by JSERC in TO for FY 2011-12	Submitted by TVNL	Approved by the Commission
Capacity	MW	420	420	420
Availability	%	85%		85%
PLF	%	75%	61.74%	61.74%
Gross generation	MU	2759.4	2278	2277.76
Auxiliary Consumption	%	9.50%	10.29%	9.50%
Actual auxiliary consumption				10.29%
Net units sent out	MU	2497.26	2043	2043.38
Gross station heat rate	Kcal/kWh	3043	2930	2930
Specific oil consumption	ml/kWh	1	2.87	1.00
Calorific value of secondary fuel	Kcal/ml	9.359	9.359	9.359
Weighted average landed price of coal	Rs/kg	1.505	1.612	1.62
Calorific value of Coal	Kcal/kg	4132.43	3850	4305.40
Energy charge rate	Rs/kWh	1.2205	1.36	1.2127

Operation & Maintenance (O&M) Expenses

Petitioner's submission

6.31 The Petitioner submitted revised O&M expenses for FY 2011-12 based on actual data for the period April to October 2011 and estimates for the rest five months. The Petitioner submitted that O&M expenses for FY 2011-12 should be revised to Rs.120.73 Cr.

Commission's analysis

6.32 The Commission observed that the O&M expenses claimed by the Petitioner are very high and not based on the 'Generation Tariff Regulations, 2010', according to which, during the transition period of FY 2011-12, the Generation Tariff Regulations, 2004 would be followed which states that, for plants set up before 01.04.2004, the O&M should be considered at 2.50% of the capital cost, escalated @ 6% p.a.

6.33 The Commission approved the O&M expenses at Rs. 80.20 Cr for FY 2011-12 in line with the said regulations. The O&M expenses of Rs 80.20 Cr is based on 2.50% of initial project cost of Rs 1247.04 Cr, average capitalisation each year till FY 2010-11 and approved average capitalisation of Rs 7.90 Cr for FY 2011-12, escalated at the rate of 6% per annum till the end of FY 2011-12.

Depreciation

Petitioner's submission

6.34 The Petitioner revised the depreciation expense for FY 2010-11 to Rs.70.91 Cr.

Commission's analysis

6.35 'Generation Tariff Regulation, 2010' has specified the following methodology for the calculation of depreciation expense

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

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

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

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

6.36 The Commission has adopted the methodology specified in the 'Generation Tariff Regulations, 2010' and accordingly approved the depreciation for FY 2011-12 at Rs. 69.06 Cr. The below table details the depreciation approved by the Commission for FY 2011-12.

Table 24: Approved Depreciation Expenses for FY 2011-12 (Rs Cr)

Item	Approved by JSERC in TO for FY 2011-12	Submitted by TVNL	Approved by the Commission
Depreciation for Plant			68.73
Depreciation for HO			0.12
Depreciation on the assets added during the year			0.20
Total	**69.28**	**70.91**	**69.06**

Interest on Loan

Petitioner's submission

6.37 The Petitioner revised interest on loan as Rs 79.87 Cr for FY 2011-12.

Commission's analysis

6.38 As per the 'Generation Tariff Regulations, 2010' as follows:

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

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

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

6.39 Accordingly the normative loan and interest on loan is calculated by the Commission.

6.40 The below table details the interest on loan approved by the Commission for FY 2011-12.

Table 25: Approved Interest on Loan (Rs Cr)

Particulars	Approved by JSERC in TO for FY 2011-12	Submitted by TVNL	Approved by the Commission
Normative Opening Loan *			604.17
Repayment (Equal to depreciation)			69.06
Additions (Debt component of Addl. Capitalisation)			0.00
Normative Closing Loan			535.11
Normative Average Loan			535.11

Rate of Interest			13.00%
Interest on loan	**81.20**	**79.87**	**69.56**

* The normative loan has been worked out as per the 'Generation Regulations, 2010.

Interest on Working Capital (IWC)

Petitioner's submission

6.41 The Petitioner submitted that interest on working capital should be revised at Rs.21.46 Cr for FY 2011-12.

Commission's analysis

6.42 The working capital requirement for FY 2011-12 has been approved as per the JSERC 'Generation Tariff Regulations, 2010'. As per the JSERC Generation Tariff Regulations, 2010 the rate of interest on working capital is to be the short-term Prime Lending Rate of State Bank of India as on 1st April of the year for which the tariff is to be determined.

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

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

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

c) Maintenance spares @ 20% operation and maintenance expenses

d) Operation and maintenance expenses for 1 month

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

6.44 The Commission approves the interest on working capital for FY 2011-12 at the rate of 13.00% which was the prevailing SBI PLR as on 1st April 2011.

6.45 The approved interest on working capital for FY 2011-12 is summarised in the table below:

Table 26: Approved Interest on Working Capital (Rs Cr)

Particulars	Approved by JSERC in TO for FY 2011-12	Submitted by TVNL	Approved by the Commission
Cost of coal- 1.5 months	38.10		30.97
Cost of secondary oil- 2 months	2.90		2.88
O&M- 1 month	6.69		6.68
Maintenance spares @ 20% of O&M	16.06		16.04
Receivables- 2 months	98.6		86.40
Total Working Capital	162.36		143.01
Interest on Working Capital	**21.11**	**21.46**	**18.59**

Income Tax

Petitioner's submission

6.46 The Petitioner has not projected any income tax for FY 2011-12.

Commission's analysis

6.47 The Commission accepts the submission made by the Petitioner.

Return on Equity (RoE)

Petitioner's submission

6.48 The Petitioner submitted that return on equity should be revised at Rs.28.19 Cr for FY 2011-12.

Commission's analysis

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

6.50 The Commission has allowed return on equity at the base rate of 15.50% considered on the average equity for FY 2011-12 as the Petitioner has submitted that it does not have assessable income, therefore, it is not paying any taxes for FY 2011-12. The below table contains the return on equity approved for FY 2011-12.

Table 27: Approved Return on Equity (Rs. Cr.)

Particulars	Submitted by TVNL	Approved by the Commission
Opening equity at the start of FY		161.28
Additional infusion during the year		7.90
Closing Equity at the end of FY		169.18
Average Equity		165.23
Return on equity at 15.50%	28.19	25.61

Non tariff Income

Petitioner's submission

6.51 The Petitioner submitted non-tariff income of Rs. 16.91 Cr for FY 2010-11 and considered 40% reduction on it for using it in company works for estimating the non-tariff income for FY 2011-12.

Commission's analysis

6.52 The Commission has scrutinized the details of non tariff income submitted by the Petitioner. Since the Petitioner has not given justification or proper plan for utilization of the non-tariff income, the Commission rejects the basis of projection of non-tariff income of the Petitioner and approves the same at Rs. 16.91 Cr for FY 2011-12.

Cost of secondary fuel oil

Petitioner's submission

6.53 The cost of secondary fuel oil calculated by the Petitioner as Rs 47.18 Cr.

Commission's analysis

6.54 As per 'Generation Tariff Regulations, 2010', the cost of secondary fuel oil is to be considered a part of the fixed cost component.

6.55 The Commission has calculated the cost of secondary fuel oil as Rs 17.27 Cr for FY 2011-12 as per 'Generation Tariff Regulations, 2010'.

Summary of Fixed Cost Determinants and total expenses

6.56 The summary of fixed cost determinants for the two Units of Tenughat Thermal Power Station as approved by the Commission in the Tariff Order of FY 2011-12, submitted by the Petitioner in the current petition and approved by the Commission for FY 2011-12 is given in the table below:

Table 28 : Approved Fixed cost determinants and total expenses for FY 2011-12

Parameters	Unit I&II			
	Units	Approved by the Commission in the TO of FY 2011-12	Submitted by TVNL in the Petition	Now Approved by the Commission
Cost of secondary fuel oil	Rs. Cr	17.39	47.18	17.27
O&M charges	Rs. Cr	80.29	120.73	80.20
Depreciation	Rs. Cr	69.28	70.91	69.06
Interest on Loan	Rs. Cr	81.20	79.87	69.56
Return on Equity	Rs. Cr	17.60	28.19	25.61
Interest on Working Capital	Rs. Cr	21.11	21.46	18.59
Total Fixed cost	Rs. Cr	**286.87**	**368.34**	**280.29**
Energy Cost	Rs. Cr	**304.79**	**277.69**	**247.79**
Total Expenses	Rs. Cr	**591.66**	**646.04**	**528.09**
Less Non-tariff Income	Rs. Cr	16.07	10.21	16.91
Net Total Expenses	Rs. Cr	575.59	635.82	511.38
Revenue at existing tariff	Rs. Cr		**511.24**	**487.53**
(Gap)/Surplus for the year	Rs. Cr		**(124.58)**	**(23.65)**
Carrying Cost	Rs. Cr		**-**	**-**
Gap carried forward	Rs. Cr		**(124.58)**	**(23.65)**

6.57 The Commission has computed the revenue gap for the Petitioner for FY 2011-12 on provisional basis. The revenue gap for FY 2011-12, along with the carrying cost, shall be computed and allowed by the Commission in the tariff for the next financial year when the audited accounts for FY 2011-12 are made available by the Petitioner.

6.58 The carrying cost shall be allowed by the Commission in accordance with Regulation 6.16, 6.17 and 6.18 of 'Generation Tariff Regulations, 2010' as quoted below.

"6.16 If the Tariff already recovered is more than the Tariff determined after true up, the Generating Company shall refund to the Beneficiaries the excess amount so recovered along with simple interest at the rate equal to short term prime lending rate of State Bank of India as on 1st April of the respective Year.

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

6.18 The amount under-recovered or over-recovered, along with simple interest, shall be recovered or refunded by the Generating Company, in six equal monthly instalments starting within three months from the date of the tariff order issued by the Commission after the truing up exercise.”

A7: TARIFF DETERMINATION FOR THE FIRST CONTROL PERIOD

7.1 The Petitioner submitted the petition for determination of generation tariff for the first Control Period on the basis of the projection of operational and financial figures for the year.

7.2 The Commission has scrutinized the petition filed by TVNL for determination of Generation Tariff for the first Control Period of FY 2012-13 to FY 2015-16 in accordance with the Generation Tariff Regulations, 2010. The component-wise description of the Petitioner's submission and the Commission's analysis thereon is given below.

Norms of Operation and Fuel Cost

Plant Availability Factor (PAF)

Petitioner's submission

7.3 The Petitioner has projected to meet the normative availability of 85% for the FY 2012-13 to FY 2015-16 as per the Generation Tariff Regulations, 2010.

Commission's analysis

7.4 The Commission has considered Normative Annual Plant Availability Factor (NAPAF) of 85% as specified in the Generation Tariff Regulation, 2010 for projection of Availability during each year of the Control Period i.e. from FY 2012-13 to FY 2015-16.

Plant Load Factor (PLF)

Petitioner's submission

7.5 The Petitioner has projected the Plant Load Factor (PLF) for each year of the Control Period i.e. from FY 2012-13 to FY 2015-16 as shown in the table below.

Table 29: Projected PLF for the Control Period

Particulars	Units	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Unit I & II	%	75.00%	76.00%	77.00%	78.00%

Commission's analysis

7.6 For the purpose of computation of Energy Charge Rate, the Plant Load Factor has no relevance and the actual recovery of fuel charge will depend on actual generation by the Generation Company. However, for the Purpose of estimating the Generation, the Commission has kept the Plant Load Factor at the Normative Annual Plant Availability Factor (NAPAF) of 85%.

Auxiliary Consumption

Petitioner's submission

7.7 The Petitioner has projected to attain auxiliary consumption of 10.0% for the FY 2012-13 which it aims to further reduce to 9.50% by the FY 2015-16 as per the Generation Tariff Regulations, 2010 as follows:

Table 30: Auxiliary Consumption (%)

Particulars	Units	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Unit I & II	%	10.00%	9.75%	9.50%	9.50%

Commission's analysis

7.8 Auxiliary consumption refers to the quantum of energy consumed by the auxiliary equipment of the generating station. Higher auxiliary consumption reduces the net generation of a generating station.

7.9 The Commission has considered Auxiliary Consumption at 9.50% for both the units for each year of the Control Period i.e. from FY 2012-13 to FY 2015-16 as specified in the Generation Tariff Regulation, 2010.

Gross and Net Generation

Petitioner's submission

7.10 The Petitioner has projected the generation for each year of the Control Period i.e. from FY 2012-13 to FY 2015-16 as shown in the table below:

Table 31: Submitted Gross and Net Generation for the Control Period

	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Availability (%)	85.00%	85.00%	85.00%	85.00%
PLF (%)	75.00%	76.00%	77.00%	78.00%
Gross Generation (MU)	2759	2796	2833	2878
Auxiliary Consumption (%)	10.00%	9.75%	9.50%	9.50%

	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Net Generation (MU)	2483	2524	2564	2604

Commission's analysis

7.11 The Commission has computed and approved the gross and net generation for each year of the Control Period i.e. from FY 2012-13 to FY 2015-16 considering the approved values of PAF and auxiliary consumption as shown in the table below.

Table 32: Approved Gross and Net Generation for the Control Period

	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Normative Availability (%)	85.00%	85.00%	85.00%	85.00%
Projected PLF (%)	85.00%	85.00%	85.00%	85.00%
Gross Generation (MU)	3127	3127	3127	3136
Auxiliary Consumption (%)	9.50%	9.50%	9.50%	9.50%
Net Generation (MU)	2830	2830	2830	2838

Station Heat Rate (SHR)

Petitioner's submission

7.12 The Petitioner submitted that it expects to reduce its Station heat rate by 5% from 2980 Kcal/Kwh in FY 2012-13 to 2850 Kcal/Kwh in FY 2015-16 and has requested the Commission to approve the trajectory shown below:

Table 33: Station Heat Rate

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Station Heat Rate (Kcal/Kwh)	2980	2950	2900	2850

Commission's analysis

7.13 The Commission specified the norms of operation for the two Units of TVNL in the Clause 8.4 of the 'Generation Tariff Regulations, 2010'. As already noted by the Commission in its previous Tariff Order dated August 20, 2011, 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 finalized the Regulations.

7.14 The Regulations have been notified accordingly and the norms of operation are applicable and binding on each of the generation plants covered under the Regulations. Accordingly, the Commission does not find any merit in allowing relaxation of the norms fixed for SHR in the Generation Tariff Regulations, 2010.

7.15 Thus for the calculation of fuel cost and energy charge rate the Commission has considered the SHR for each year of the Control Period i.e. from FY 2012-13 to FY 2015-16 as specified in the Generation Tariff Regulation, 2010.

Table 34: Approved Station Heat Rate for the Control Period

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Station Heat Rate (Kcal/Kwh)	2908.00	2773.00	2638.00	2503.00

7.16 Also, Generation Tariff Regulations, 2010 clarifies that the norms of operation specified under the regulations are the threshold norms and this shall not preclude the generating company and the beneficiaries from agreeing to improved norms of operation and in such case improved norms shall be applicable for the determination of tariff. The Commission encourages the Petitioner to take necessary actions to achieve the SHR of a lesser value than the applicable norms.

Specific Oil Consumption

Petitioner's submission

7.17 The Petitioner has submitted that its average specific oil consumption for the past years has been in the range of 2.5-3.5 ml/kWh. The Petitioner has stated that as per the Terms and Conditions for Determination of Tariff 2009 regulations as issued by CERC specifies a higher specific oil consumption of 2-3 ml/kWh for plants operated by DVC which fall in the same region as of the Petitioner.

7.18 The Petitioner aims to achieve specific oil consumption of 2.50 ml/kWh during FY 2012-13 which it expects to be gradually reduced to 2.00 ml/Kwh by the end of the control period and has requested the Commission to approve the same. The projected specific fuel consumption trajectory is as follows:

Table 35: Secondary Fuel Oil Consumption (ml/Kwh)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Secondary Fuel Oil Consumption (ml/Kwh)	2.50	2.25	2.00	2.00

7.19 The Petitioner submitted that there are certain plants such as Gandhinagar (unit-5), Wanakbori 7 TPS, Kolaghat (Unit -5), Kolaghat (Unit -6), Mejia (Unit-1), Mejia (Unit-2), having similar age and profile; for whom; specific oil consumption has been approved in the range of 2.0-3.5 ml/Kwh over the years. Thus, the Petitioner has requested the Commission to approve the specific oil consumption trajectory as projected.

Commission's analysis

7.20 The specific oil consumption is the amount of secondary fuel (in ml) consumed in the process of generation of one unit of power produced (in kWh). A lower specific oil consumption lowers the consumption of the secondary fuel in the generation process, and hence lowers the secondary fuel cost.

7.21 The Petitioner has claimed a specific oil consumption of 2-3 ml/Kwh, in line with the norms specified in the CERC Generation Regulations, 2009 for DVC stations. It is also worth mentioning that most of the NTPC stations, which are much older plants than that of the Petitioner, have a specific oil consumption of even lower than 0.75 ml/Kwh.

7.22 Moreover, the Commission has notified the Generation Tariff Regulations, 2010, in consultation with all stakeholders. As per these regulations, the norm for specific oil consumption has been fixed at 1 ml/kWh for TTPS station for the control period.

7.23 Therefore, the Commission approves the specific oil consumption of 1 ml/kWh for FY 2012-13 to FY 2015-16.

Determination of Energy Charges

Gross Calorific Value (GCV) Of Primary and Secondary Fuel

Petitioner's submission

7.24 The Petitioner sources D grade coal from the collieries of Central Coal Fields Limited and expects calorific value of around 4000 kCal/kg during the control period.

7.25 The Petitioner projected the calorific value of 9359 kCal/l for secondary fuel during the control period.

Commission's analysis

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

7.27 The Generation Tariff Regulations, 2010 specifies that the GCV of coal and GCV of oil consumed by the generating company shall be taken based on the actual of the weighted average gross calorific value for three preceding months and in the absence of weighted average gross calorific value for three preceding months, latest weighted average gross calorific value for the generating station, before the start of the year.

7.28 The Commission asked the Petitioner to submit the consumption and GCV of coal and GCV of oil for the month of January 2012, February 2012 and March 2012 being the preceding three months from the start of FY 2012-13. The information was made available by the Petitioner. But for the month of March 2012, as one of the units of TTPS was shutdown, the figures for consumption and GCV of coal and GCV of oil were not in line with the average.

7.29 Accordingly, the Commission has considered the consumption and GCV of coal and GCV of oil for the months of December 2011, January 2012 and February 2012 while calculating the weighted average gross calorific value during each year of the Control Period i.e. from FY 2012-13 to FY 2015-16 as follows:

Table 36: Gross Calorific value of coal (Kcal/kg)

Months	Coal Consumption (MT)			CV of coal	CV x Consumption
	Unit-I	Unit-II	Total		
Dec. 11	89822.30	64191.00	154013.30	4463.55	687445816.81
Jan. 12	96967.60	71752.60	168720.20	4324.48	729627783.61
February .12	98264.90	44398.70	142663.60	4317.76	615986988.76
Total	285054.80	180342.30	465397.10	13105.79	2033060589.17
Weighted average Gross Calorific value of coal for FY 2012-13 to FY 2015-16					**4368.44**

Table 37: Gross Calorific value of Oil (Kcal/l)

Months	Oil Consumption			CV of coal	CV x Consumption
	Unit-I	Unit-II	Total		
Dec. 11	193.00	190.20	383.20	9359.00	3586368.80
Jan. 12	174.60	66.50	241.10	9359.00	2256454.90
February .12	8.20	168.70	176.90	9359.00	1655607.10
Total	375.80	425.40	801.20	28077.00	7498430.80
Weighted average Gross Calorific value of oil for FY 2012-13 to FY 2015-16					**9359.00**

Price of Primary Fuel

Petitioner's submission

7.30 The Petitioner had submitted that the Cost of coal for FY 2012-13 has been taken on the basis of actuals of the weighted average price of the three preceding months available data as per the Generation Tariff Regulations, 2010. The Petitioner has also submitted that for following years in the control period; cost has been escalated by 5.72% on annual basis as per the typical escalation structure of CERC's Regulations for FY 2009-14. However this should be subjected to actual cost as notified by GOI or as fixed by CCL a GOI undertaking.

Commission's analysis

7.31 The Generation Tariff Regulations, 2010 specifies that the price of coal incurred by the generating company shall be taken based on the actual of the weighted average price for three preceding months and in the absence of weighted average price for three preceding months, latest weighted average procurement price for the generating station, before the start of the year.

7.32 The Commission asked the Petitioner to submit the landed price of coal for the month of January 2012, February 2012 and March 2012 being the preceding three months from the start of FY 2012-13. The information was made available by the Petitioner. But for the month of March 2012, as one of the units of TTPS was in shutdown, the figures for price of coal were not in line with the average.

7.33 Accordingly, the Commission has considered the price of coal for the months of December 2011, January 2012 and February 2012 while calculating the weighted average landed cost of coal during each year of the Control Period i.e. from FY 2012-13 to FY 2015-16 as follows:

Table 38: Cost of coal (Rs. /MT)

Landed cost of Coal (Mar 12 data not taken due to not matching with the average)					
Months	Coal Consumption			Cost of coal	Cost x Consumption
	Unit-I	Unit-II	Total		
Dec. 11	89822.30	64191.00	154013.30	1660.84	255791495.93
Jan. 12	96967.60	71752.60	168720.20	1666.02	281091395.96
February .12	98264.90	44398.70	142663.60	1650.45	235458429.73
Total	285054.80	180342.30	465397.10	4977.31	772341321.62
Weighted average Gross Calorific value of coal for FY 2012-13 to FY 2015-16					**1659.53**

7.34 Also according to Regulations 7.37, 8.20 and 8.21 of the Generation Tariff Regulation, 2010, which states that:

"7.37 The cost of fuel in cases covered under clause 7.34 and 7.35 of these Regulations shall be based on the landed cost incurred (taking into account normative transit and handling losses) by the Generating Company and gross calorific value of the fuel as per actual for the three months preceding the first month for which tariff is to be determined and no fuel price escalation shall be provided during the tariff period.

"8.20 The Fuel Price Adjustment (FPA) applicable for calculation of Energy Charges is as follows:

(a) For coal-based generating stations, FPA = A + B

Where,

FPA – Fuel price Adjustment for a month in Paise/kWh Sent out;

A – Fuel price adjustment for Secondary Fuel oil in Paise/kWh sent out;

B – Fuel price adjustment for Coal in Paise/kWh sent out;

$$A = \frac{10}{(100 - AC_n)} * SFC_n * \{(P_{om} - P_{os})$$

$$B = \frac{10}{(100 - AC_n)} * [SHR_n * \{(P_{cm}/K_{cm}) - (P_{cs}/K_{cs})\} - SFC_n * \{(K_{om} * P_{cm} / K_{cm}) - K_{os} * P_{cs}/K_{cs})\}]$$

Where,

SFCn = Normative Specific Fuel Oil consumption in l/kWh;

SHRn = Normative Gross Station Heat Rate in Kcal/kWh;

ACn = Normative Auxiliary consumption in percentage;

Pom = Weighted average price of fuel oil on as consumed basis during the month in Rs. /KL;

Kom = Weighted average Gross Calorific Value of fuel oils fired at boiler front for the month in Kcal/Litre;

Pos = Base value of price of fuel oils as taken for determination of base energy charge in tariff order in Rs. / KL;

Kos = Base value of Gross Calorific Value of fuel oils as taken for determination of *base energy charge in tariff order in Kcal/Litre;*

Pcm = Weighted average price of coal procured and burnt during the month at the power station in Rs. / MT;

Kcm = Weighted average Gross Calorific Value of coal fired at boiler front for the month in Kcal/kg;

Pcs = Base value of price of coal as taken for determination of base energy charge in tariff order in Rs. /MT

Kcs = Base value of gross calorific value of coal as taken for determination of base energy charge in tariff order in kCal/Kg.

***8.21 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**."*

7.35 This clearly states that there is already a mechanism in place in the Generation Tariff Regulation, 2010 for taking into account the escalation of fuel price and so the base fuel price is kept constant for the control period.

Transit Loss

Petitioner's submission

7.36 The Petitioner has projected 0.3% as Transit Loss for the control period. It has further submitted that at present due to road transfer of coal; its transit loss is in the range of 0.5%; however, with capitalization of MGR system; it expects to meet 0.3% during the Control period. Thus, the Petitioner has requested the Commission to approve the Transit Loss as projected.

Commission's analysis

7.37 The Generation Tariff Regulations, 2010 allow transit loss of 0.2% for pithead generating stations and since the Petitioner is a pit head generating station therefore the Commission approves the transit loss of 0.2% for FY 2012-13 to FY 2015-16.

Energy Charge Rate (ECR) and Fuel Cost

Petitioner's submission

7.38 The Petitioner submitted that it has calculated the ECR for each year as per the formula stated in Generation Tariff Regulations, 2010 and considering the submitted values of the various fuel parameters. The table below contains the ECR as submitted by the Petitioner for each year of the Control Period i.e. from FY 2012-13 to FY 2015-16:

Table 39 : Submitted Energy Charge Rate for the Control Period

Particulars		FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Gross Generation	MU	2759	2796	2833	2878
Heat Rate	Kcal/kWh	2980.00	2950.00	2900.00	2850.00
Specific Oil Consumption	ml/kWh	2.50	2.25	2.00	2.00
Base Calorific Value of Oil	Kcal/l	9359	9359	9359	9359
Auxiliary Consumption	%	10.00%	9.75%	9.50%	9.50%
Net Generation	MU	2483	2524	2564	2604
Base Weighted Average Calorific Value of Coal	Kcal/kg	4000	4000	4000	4000
Base Weighted Average cost of Coal	Rs/Ton	1612	1704	1801	1904
Energy Charge Rate	Rs/kWh	**1.33**	**1.39**	**1.44**	**1.49**

Commission's analysis

7.39 As per the Generation Tariff Regulation, 2010, the energy (variable) charge shall cover primary fuel costs and shall be payable by every beneficiary for the total energy scheduled to be supplied to such beneficiary during a calendar month on ex-power plant basis, at the specified energy charge rate of the month (with fuel price adjustment).

7.40 The formula for calculation of energy charge and energy charge rate (ECR) payable to a Generating Company is specified in Regulation 8.17 and 8.18 of the Generation Tariff Regulation, 2010 as quoted below:

"8.17 Total Energy charge payable to the Generating Company for a month shall be: = (Energy charge rate in Rs. /kWh) x {Scheduled energy (ex-bus) for the month in kWh.}

8.18 Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the following formula:

(a) For coal based stations

$$ECR = (GHR - SFC \times CVSF) \times LPPF \times 100/\{CVPF \times (100 - AUX)\}$$

Where, AUX - Normative auxiliary energy consumption in percentage

CVPF - Gross calorific value of primary fuel as fired, in Kcal per kg, per litre or per standard cubic metre, as applicable.

CVSF - Calorific value of secondary fuel, in Kcal per ml

ECR - Energy charge rate, in Rupees per kWh sent out.

GHR - Gross station heat rate, in Kcal per 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.

SFC - Specific fuel oil consumption, in ml per kWh"

7.41 The Commission has calculated the ECR to be charged by the Petitioner as per the formula stated above and considering 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 2012-13 to FY 2015-16 as approved by the Commission.

Table 40 : Approved Energy Charge Rate for the Control Period for Unit 2

Parameters		FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Gross Generation	MU	3127.32	3127.32	3127.32	3135.88
Heat Rate	Kcal/kWh	2908.00	2773.00	2638.00	2503.00
Specific Oil Consumption	ml/kWh	1.00	1.00	1.00	1.00
Base Calorific Value of Oil	Kcal/l	9359.00	9359.00	9359.00	9359.00
Auxiliary Consumption	%	9.50%	9.50%	9.50%	9.50%
Net Generation	MU	2830.22	2830.22	2830.22	2837.98
Base Weighted Average Calorific Value of Coal	Kcal/kg	4368.44	4368.44	4368.44	4368.44
Base Weighted Average cost of Coal	Rs/Ton	1659.53	1659.53	1659.53	1659.53
Energy Charge Rate	Rs/kWh	**1.217**	**1.160**	**1.103**	**1.047**

Determination of Fixed Cost

Capital Investment & Additional Capitalization

Petitioner's submission

7.42 The Petitioner has projected capital investment and additional capitalization for each year of the Control Period i.e. from FY 2012-13 to FY 2015-16 in its MYT Business Plan as follows

Table 41: Submitted Capital Investment & Additional Capitalization for Control Period (Rs Cr)

	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Capital investment	60.53	54.92	49.90	40.80
Additional Capitalisation	36.03	54.92	74.40	50.80

Commission's analysis

7.43 The Commission has scrutinized the information provided by the Petitioner in its MYT Business Plan and in absence of requisite information, has approved capital investment plan based on their past performance as discussed earlier in Section 4 of this Tariff Order. The approved capital investment and additional capitalization for each year of the control period has also been summarized in the table below:

Table 42: Approved Capital Investment & Additional Capitalization for Control Period (Rs Cr)

	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Capital investment	30.27	27.46	24.95	20.40
Additional Capitalisation	15.13	13.73	12.48	10.20

7.44 The Commission shall review the capital expenditure and capitalization actually done by the Petitioner at the end of each year of the Control Period in accordance with Regulation 6.8 - 6.10 of the Generation Tariff Regulations, 2010.

7.45 The Petitioner shall submit the actual capital expenditure incurred along with the Annual Performance Review Filing during each year of the Control Period. The Commission shall also conduct a midterm review at the end of second year of the Control Period. In case, the cumulative incurred capital expenditure and/or capitalization deviates from the approved capital expenditure / capitalization by more than 20% (cumulative), the Commission will make necessary changes to capital investment plan for the Control Period and will adjust depreciation and financing cost, which includes cost of debt (interest), working capital interest, cost of equity (return) based on the actual capital expenditure and/or capitalization vis-à-vis approved capital expenditure/capitalization.

Operation & Maintenance Expenses

Petitioner's submission

7.46 The Petitioner has presented the O&M expenses for the Control Period under three broad categories:

(a) Salaries, wages, pension contribution and other employee costs i.e. Employee Expenses;

(b) Administrative and General costs;

(c) Repairs and maintenance expenses; and

7.47 The Petitioner has projected O&M expenses for each year of the Control Period i.e. from FY 2012-13 to FY 2015-16 in its MYT petition. The submission of the Petitioner regarding O&M expenses is summarized in the table below.

Table 43: Submitted O&M expenses for Control Period (Rs Cr)

	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Employee Expenses	37.12	40.17	43.51	47.16
A&G Expenses	19.75	21.17	22.69	24.32
R&M Expenses	83.00	90.01	98.19	107.67
Total O&M Expenses	**139.87**	**151.36**	**164.39**	**179.16**

7.48 The Petitioner submitted that the employee costs of FY 2012-13 to FY 2015-16 has been projected on the basis of general increase in manpower strength (for items like Salaries, Overtime, medical reimbursements) along with a general inflation rate of 9.37% (based on 60% weightage of WPI & 40% weightage of CPI for % increase in April 2010- April 2011) on year-on-year basis.

7.49 As per the Generation Tariff Regulations, 2010, the terminal benefits have been kept constant as these are to be approved as per actual submitted by the Generating Company or be established through actuarial studies. In this regard, the Petitioner submitted that it has given the work order of Actuarial study to the M/s Life Insurance Corporation (LIC) and its report preparation are underway and its findings may be submitted to the Commission once it get finalized.

7.50 The Petitioner submitted that the A&G costs of FY 2012-13 to FY 2015-16 have been projected on the basis of a general inflation rate of 9.37% (based on 60% weightage of WPI & 40% weightage of CPI for % increase in April 2010- April 2011). The Petitioner has also submitted that it expects savings of 2% in A&G expenses on year-on-year basis.

7.51 The Petitioner has submitted that the R&M costs of FY 2012-13 to FY 2015-16 have been projected on the basis of a general inflation rate of 9.37% (based on 60% weightage of WPI & 40% weightage of CPI for % increase in April 2010- April 2011) over FY 2010-11 figure along with an additional increase due to additional asset capitalization on year-on-year basis. An additional decrement factor of 2% on year-on-year basis has also been considered due to efficiencies and improvements in R&M activities being undertaken by the Petitioner.

Commission's analysis

7.52 As per the Regulation 7.40 of the Generation Tariff Regulation, 2010 the O&M expenses shall comprise of:

(a) Salaries, wages, pension contribution and other employee costs;

(b) Administrative and General costs;

(c) Repairs and maintenance expenses; and

(d) Other miscellaneous expenses, statutory levies and taxes (except corporate income tax).

7.53 Further, as per Regulation 7.41 of the Generation Tariff Regulation, 2010, for the Existing Thermal Generating Stations, the O&M expenses for the Control Period shall be approved considering the past O&M expenses of the generating station. The said Regulations are reproduced for reference below:

"7.41 Existing Thermal Generating Stations:

(a) The O&M expenses for the Transition Period shall be approved by the Commission as per the JSERC (Terms and condition of Determination of Generation Tariff) Regulations, 2004.

(b) The Applicant shall submit details on O&M expenses as required by the Commission. The O&M expenses excluding terminal liabilities for the Base Year shall be determined based on latest accounting statements, estimates of the Generating Company for relevant years and other factors considered relevant.

(c) The O&M expenses excluding terminal liabilities permissible towards determination of tariff for each year of the Control Period shall be determined after a prudency check by the Commission based on submissions of the Generating Company, previous years' actual expenses and any other factor considered relevant.

(d) Terminal Liabilities will be approved as per actual submitted by the Generating Company or be established through actuarial studies.

(e) Increase in O&M charges on account of war, insurgency or changes in laws, or like eventualities where the Commission is of the opinion that an increase in O&M charges is justified, may be considered by the Commission for a specified period.".

7.54 The Commission has analyzed the submissions made by the Petitioner and after proper prudence check approves the O&M expenses on the basis of following methodology explained in the following paragraphs.

7.55 In accordance with Regulation 7.41, the Commission has considered the latest available accounting statements of the Petitioner i.e. the actual unaudited expenses for FY 2011-12 for projection of O&M expenses for the Control Period.

7.56 Regulation 6.5 of the Generation Tariff Regulations further states that *"The Commission shall normally not revisit the performance targets even if the targets are fixed on the basis of base values of un-audited accounts*". However, the Commission notes that the O&M expenses for FY 2011-12 have increased significantly during the year due to the high inflation, salary adjustment given to employees and increase in cost of ash disposal and R&M activities. Keeping the interest of consumers in mind the Commission has decided that it may revise the Base Year O&M expenses in its next Tariff Order after taking into account the audited accounts (after due prudence check) for FY 2011-12.

7.57 *Employee Expenses:* In accordance with the provisions of the Generation Tariff Regulations, 2010, for the purpose of approval of O&M expenses, employee expenses have been considered in two parts –

(a) Employee Expenses excluding terminal liabilities: The base figures for employee expenses (excluding terminal liabilities) have been taken equal to the expenses submitted by the Petitioner for FY 2011-12. The escalation factor is considered according to the general inflation rate of 8.40% (based on CERC Methodology of '80% weightage to WPI & 20% weightage to CPI and the average increase in the weighted average index from FY 2008-09 to FY 2011-12) on year-on-year basis to arrive at the approved employee expenses figure for FY 2012-13 to FY 2015-16.

(b) Terminal Liabilities: The base figures for projecting terminal liabilities have been taken equal to the expenses submitted by the Petitioner for FY 2011-12. The same has been considered for projection of terminal benefits during the Control Period. However, in accordance with Regulation 7.41, the terminal liabilities for each year of the Control Period shall be trued up as per the actual terminal liabilities incurred by the Petitioner after due prudence check by the Commission.

7.58 *A&G expenses*: The base figures for A&G expenses have been taken according to the expenses submitted by the Petitioner for FY 2011-12. The escalation factor is considered according to the general inflation rate of 8.40% (based on CERC Methodology of '80% weightage to WPI & 20% weightage to CPI and the average increase in the weighted average index from FY 2008-09 to FY 2011-12) on year-on-year basis to arrive at the approved A&G expenses for FY 2012-13 to FY 2015-16.

7.59 The Petitioner submitted that there is an ongoing dispute with the Irrigation department of GoJ regarding water charges that are running to the tune of Rs. 779 Cr as of 31.03.2011. The Commission will look into the matter after the dispute is over.

7.60 *R&M expenses*: The Commission observes that the R&M expenses for a generating station vary from year to year depending upon the maintenance activities carried out during the year. As such considering the R&M expenses for a single year as the base expenses would be inaccurate. The base figures for R&M expenses have been taken by first normalizing the R&M expenses of the past four years (FY 2008-09 to FY 2011-12) at the escalation rate of 8.40% and then taking an average of past four years. The escalation factor is considered according to the general inflation rate of 8.40% (based on CERC Methodology of '80% weightage to WPI & 20% weightage to CPI and the average increase in the weighted average index from FY 2008-09 to FY 2011-12) on year-on-year basis. The same escalation factor has been considered to arrive at the approved R&M expenses figure for FY 2012-13 to FY 2015-16.

7.61 The total O&M expenses as approved by the Commission for each year of the Control Period i.e. from FY 2012-13 to FY 2015-16 are summarized in the tables below:

Table 44: Approved O&M expenses for Control Period (Rs Cr)

	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Employee Expenses	31.57	33.84	36.30	38.97
A&G Expenses	18.97	20.56	22.29	24.17
R&M Expenses	91.82	99.54	107.90	116.97
Total O&M Expenses	**142.36**	**153.94**	**166.50**	**180.11**

Depreciation

Petitioner's submission

7.62 The Petitioner has submitted depreciation on the Original Project Cost and the additional capitalization proposed for the units during the Control Period.

7.63 The depreciation amount for the units for each year of the Control Period as submitted by the Petitioner is shown in the tables below.

Table 45: Submitted Depreciation for Control Period (Rs Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Depreciation on Original Cost of Capital on the plant	73.69	71.72	78.49	81.35
Depreciation on Original Cost of Capital on the HO	0.11	0.11	0.11	0.45
Depreciation on Additional Capitalisation	0.95	1.45	1.59	1.20
Total Depreciation	**74.76**	**73.28**	**80.20**	**82.99**

Commission's analysis

7.64 The Generation Tariff Regulation, 2010 have specified the following methodology for the calculation of depreciation expense for existing generating stations:

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

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

(c) In case of existing generating stations, during the transition period, the balance depreciable value as on April 1, 2011 shall be worked out by deducting the cumulative depreciation including AAD as admitted by the Commission upto March 31, 2011 from the gross depreciable value of the assets.

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

7.65 The Commission has observed that for both the units, the cumulative depreciation on the Original Project Cost for some assets has exceeded 70%. For these assets, following the methodology adopted by it the previous Tariff Order; the Commission has spread the balance depreciable value of the assets (as on March 31, 2011) over the balance useful life of the asset, in line with the Generation Tariff Regulations, 2010.

7.66 In case of assets where cumulative depreciation has not reached 70%, the Commission has considered the depreciation on assets as per the rates specified in the Generation Tariff Regulation, 2010.

7.67 The Commission has also allowed depreciation on the approved additional capitalization considering the depreciation rates specified in Generation Tariff Regulation, 2010.

7.68 The depreciation approved for the Control Period i.e. FY 2012-13 to FY 2015-16 on Original Project Cost and additional capitalization is given in the tables below:

Table 46: Approved Depreciation for Control Period (Rs Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Depreciation on Original Cost of Capital on the plant	68.74	68.74	68.53	68.53
Depreciation on Original Cost of Capital on the HO	0.12	0.12	0.12	0.12
Depreciation on Additional Capitalisation	0.82	1.58	2.27	2.87
Total Depreciation	**69.68**	**70.44**	**70.92**	**71.52**

Interest on Loan

Petitioner's submission

7.69 The Petitioner has submitted that it will finance the projected additional capitalization for FY 2012-13 to FY 2015-16 through raising new debt.

7.70 The Debt-Equity ratio for any project/unit or any additional capitalization incurred has been taken as 70:30 on normative basis in accordance with the Regulations 7.3, 7.13 and 7.14 of Generation Tariff Regulations 2010.

7.71 Further, for the purpose of computation of interest on loan additional capitalization has been considered at 13.00%.

Table 47: Submitted Interest on Loan for Control Period (Rs Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Opening Debt for the year	589.83	557.44	522.60	477.33
Repayment	74.76	73.28	80.20	82.99
Additions during the year	42.37	38.44	34.93	28.56
Closing Debt	557.44	522.60	477.33	422.90
Rate of Interest	13%	13%	13%	13%
Average Loan	573.63	540.02	499.97	450.12
Interest on loan	**74.57**	**70.20**	**65.00**	**58.52**

Commission's analysis

7.72 The Commission has worked out the gross normative loan for FY 2011-12 as per Regulation 7.13 and 7.14 of the Generation Tariff Regulation, 2010 as quoted below.

"7.13 In case of the generating station declared under commercial operation prior to 1.4.2011, debt-equity ratio allowed by the Commission for determination of Tariff for the period ending 31.3.2011 shall be considered for determination of tariff for the Transition period.

7.14 For the project declared under commercial operation on or after 1.04.2011, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Explanation:- Any expenditure incurred or projected to be incurred on or after 1.04.2011 as may be admitted by the Commission as additional capital investment for determination of tariff, and renovation and modernization expenditure for life extension shall be serviced in the manner specified in clause 7.14 of this Regulation."

7.73 The Commission has allowed interest on loan on the approved additional capitalization considering 70% of the approved capitalization as normative debt.

7.74 The rate of interest on the approved normative debt has been worked out in accordance with Regulation 7.23 of the Generation Tariff Regulation, 2010 as quoted below:

"7.23 The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the Project:

Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:"

7.75 The latest available weighted average rate of interest for the units is 13.00%. The same has been considered for calculation of interest on normative loan.

Table 48: Approved Interest on Loan for the Control Period (Rs. Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Opening Debt for the year	535.11	476.02	415.19	353.00
Repayment	69.68	70.44	70.92	71.52
Additions during the year	10.59	9.61	8.73	7.14
Closing Debt	476.02	415.19	353.00	288.62
Rate of Interest	13%	13%	13%	13%
Average Loan	505.57	445.61	384.10	320.81
Interest on loan	65.72	57.93	49.93	41.71

Interest on Working Capital

Petitioner's submission

7.76 For the purpose of computing Working Capital, the Petitioner has submitted the components of Coal Cost, Secondary Oil Cost and Receivables, which have been computed at Normative Plant Availability of 85% for the whole year and apportioned to the months as specified in the Generation Tariff Regulations 2010. Further, as specified in the above Regulations, projected Annual O&M Expenses apportioned to 1 month and the cost of maintenance spares at 20% of Annual O&M Expenses has been considered.

7.77 As specified in Regulation 7.38 of Generation Tariff Regulations 2010, rate of interest on working capital has been projected considering the interest rate of 13.25%.

Table 49: Submitted Working Capital for the Control Period (Rs Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Cost of coal for 1.5 months	41.21	43.74	46.09	48.63
Cost of secondary fuel for 2 months	6.84	6.51	6.12	6.48
O&M expenses for 1 month	11.66	12.61	13.70	14.93
Maintenance spares (@20% of O&M Expenses)	27.97	30.27	32.88	35.83
Receivables for 2 months	118.21	122.76	128.71	135.10
Total Working Capital	205.89	215.89	227.49	240.98
Interest rate	13.25%	13.25%	13.25%	13.25%
Interest on Working capital	**27.28**	**28.61**	**30.14**	**31.93**

Commission's analysis

7.78 The Commission has determined the working capital requirement for the Petitioner by considering the following components as per Regulation 7.34 of the Generation Tariff Regulation, 2010:

(a) Cost of Coal for 1.5 months for generation corresponding to the Normative Annual Plant Availability Factor;

(b) Cost of secondary fuel oil for two months for generation corresponding to the Normative Annual Plant Availability Factor;

(c) Maintenance spares @ 20% of operation and maintenance expenses;

(d) Operation and Maintenance expenses for 1 month; and

(e) Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the Normative Annual Plant Availability Factor.

7.79 The rate of interest on working capital has been taken as 14.75% i.e. the short-term Prime Lending Rate of State Bank of India as on April 1, 2012.

7.80 Accordingly, the Commission has computed the interest on working capital for each year of the Control Period i.e. from FY 2012-13 to FY 2015-16 as shown in the tables below.

Table 50: Approved Interest on Working Capital for the Control Period (Rs. Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Cost of coal for 1.5 months	43.05	41.04	39.04	37.13
Cost of secondary fuel for 2 months	3.12	3.12	3.12	3.13
O&M expenses for 1 month	11.86	12.83	13.88	15.01
Maintenance spares (@20% of O&M Expenses)	28.47	30.79	33.30	36.02
Receivables for 2 months	116.22	114.40	112.67	111.24
Total Working Capital	202.72	202.18	202.00	200.53
Interest rate	14.75%	14.75%	14.75%	14.75%
Interest on Working capital	**29.90**	**29.82**	**29.79**	**29.87**

Income Tax

Petitioner's submission

7.81 The Petitioner has submitted that it does foresee; pending repayment of existing dues by JSEB; that there would be no assessable income for income tax and hence no tax on income has been estimated for the year FY 2011-12 and the control period. However, if the Petitioner does pay any taxes then, it has requested the Commission to approve the same as & when accrued upon.

Commission's analysis

7.82 The Commission accepts the submission made by the Petitioner.

Return on Equity (RoE)

Petitioner's submission

7.83 A Post-tax 'return on equity' of 15.5% has been considered by the Petitioner on equity component of the Original Project Cost and Additional Capitalization for FY 2010-11. (till April 1, 2011).

7.84 The debt-equity ratio for any Project/Unit/or any additional capital investment incurred has been considered as per the Regulations 7.3, 7.13 & 7.14 of Generation Tariff Regulations 2010 i.e. 70:30.

7.85 The net equity additions during the year have been considered at 30% of the capitalized assets during the years of the control period.

Table 51: Submitted Return on Equity for the Control Period (Rs Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Equity component at the start of FY	202.48	213.29	229.76	252.08
Equity infusion during FY	10.81	16.48	22.32	15.24
Total Equity	213.29	229.76	252.08	267.32
Average Equity	207.88	221.52	240.92	259.70
Rate of return on equity	15.5%	15.5%	15.5%	15.5%
Return on equity	**32.22**	**34.34**	**37.34**	**40.25**

Commission's analysis

7.86 The Commission has allowed return on equity on the approved additional capitalization considering 30% of the approved capitalization as normative equity.

7.87 Further, the base rate of return on equity has been considered at 15.50% as per Regulation 7.16 of the Generation Tariff Regulation, 2010. Since there is no income tax envisaged to be paid by the Petitioner during the Control Period, the Commission has not considered the Post Tax Rate of Equity.

Table 52: Approved Return on Equity for the Control Period (Rs Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Equity component at the start of FY	169.18	173.72	177.84	181.58
Equity infusion during FY	4.54	4.12	3.74	3.06
Total Equity	173.72	177.84	181.58	184.64
Average Equity	171.45	175.78	179.71	183.11
Rate of return on equity	15.5%	15.5%	15.5%	15.5%
Return on equity	**26.57**	**27.25**	**27.86**	**28.38**

Cost of Secondary Fuel

Petitioner's submission

7.88 The Petitioner submitted that the secondary oil projections for control period have been done as per the trajectory on the basis of normative availability of 85% during each years of control period.

Table 53: Submitted Cost of Secondary Fuel Oil for the Control Period (Rs Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Specific oil consumption (ml/kWh)	2.5	2.25	2	2
Weighted average landed price of secondary fuel (Rs./ml)	0.053	0.056	0.059	0.062
Annual plant availability factor (%)	85.00%	85.00%	85.00%	85.00%
Number of days in a year	365	365	365	366
Installed capacity (MW)	420	420	420	420
Expenses on secondary fuel	41.05	39.06	36.70	38.91

Commission's analysis

7.89 The Commission has projected the cost of secondary fuel oil in accordance with Regulation 7.49 of the Generation Tariff Regulations, 2010 as quoted below:

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

= SFC x LPSFi x NAPAF x 24 x NDY x IC x 10

Where, SFC – Normative Specific Fuel Oil consumption in ml/kWh

LPSFi – Weighted Average Landed Price of Secondary Fuel in Rs./ml considered initially

NAPAF – Normative Annual Plant Availability Factor in percentage

NDY – Number of days in a year

IC - Installed Capacity in MW

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

7.90 Accordingly, the consumption of secondary fuel oil has been projected considering the gross generation corresponding to the NAPAF (i.e. 85%) and Specific Normative Fuel Oil Consumption (i.e. 1 ml/kWh) and the price of secondary fuel oil has been projected considering the weighted average cost of secondary fuel oil from December 2011 to March 2012.

7.91 The normative cost of secondary fuel oil approved by the Commission for the Control Period i.e. from FY 2012-13 to FY 2015-16 is shown in the tables below:

Table 54: Approved Cost of Secondary Fuel Oil for the Control Period (Rs Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Specific oil consumption (ml/kWh)	1	1	1	1
Weighted average landed price of secondary fuel (Rs./ml)	0.06	0.06	0.06	0.06
Annual plant availability factor (%)	85.00	85.00	85.00	85.00
Number of days in a year	365	365	365	366
Installed capacity (MW)	420	420	420	420
Expenses on secondary fuel	**18.71**	**18.71**	**18.71**	**18.76**

Non tariff Income

Petitioner's submission

7.92 The Petitioner submitted non-tariff income of Rs. 16.91 Cr for FY 2010-11 and considered 40% reduction on it for using it in company works for estimating the non-tariff income for the control period as follows:

Table 55: Submitted NTI for the Control Period (Rs Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Non-tariff income	10.05	10.05	10.05	10.05

Commission's analysis

7.93 The Commission has scrutinized the details of non tariff income submitted by the Petitioner. Since the Petitioner has not given justification or proper plan for utilization of the non-tariff income, the Commission rejects the basis of projection for various components of non-tariff income and approves the same at Rs. 16.91 Cr for the control period as follows:

Table 56: Approved NTI for the Control Period (Rs Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Non-tariff income	16.91	16.91	16.91	16.91

Summary of Annual Fixed Charges

Petitioner's submission

7.94 The Annual Fixed Charges as submitted by the Petitioner for each year of the Control Period are shown in the following tables:

Table 57: Submitted Annual Fixed Charges for Control Period (Rs. Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
O&M expenses	139.73	152.14	165.26	179.29
Depreciation	74.76	73.28	80.20	82.99
Interest on Loan	74.57	70.20	65.00	58.52
Return on Equity	32.22	34.34	37.34	40.25
Interest on Working Capital	27.27	28.65	30.20	31.94
Cost of Secondary fuel oil at Normative Availability	41.05	39.06	36.70	38.91
Total Fixed Charges	**389.60**	**397.67**	**414.70**	**431.90**

Commission's analysis

7.95 The annual fixed charges as approved by the Commission for each year of the Control Period are shown in the following tables –

Table 58: Approved Annual Fixed Charges for Control Period (Rs. Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
O&M expenses	142.36	153.94	166.50	180.11
Depreciation	69.68	70.44	70.92	71.52
Interest on Loan	65.72	57.93	49.93	41.71
Return on Equity	26.57	27.25	27.86	28.38
Interest on Working Capital	29.90	29.82	29.79	29.87
Cost of Secondary fuel oil at Normative Availability	18.71	18.71	18.71	18.76
Total Fixed Charges	**352.95**	**358.09**	**363.72**	**370.36**

7.96 The Petitioner would recover the capacity charges in accordance with the Clause 8.10 to Clause 8.15 of the 'Generation Regulations, 2010' on the basis of the actual monthly availability.

A8: GENERATION TARIFF FOR FY 2012-13

8.1 Based upon the analysis done by the Commission in the previous sections the approved Annual Fixed Charges and Energy Charge Rate for FY 2012-13 for TTPS is summarized in the table below.

Table 59: Approved Annual Fixed Charges for FY 2012-13 (Rs. Cr)

Particulars	FY 2012-13
O&M expenses	142.36
Depreciation	69.68
Interest on Loan	65.72
Return on Equity	26.57
Interest on Working Capital	29.90
Cost of Secondary fuel at Normative Availability	18.71
Recovery on account of FY 2010-11	42.35
AFC recoverable during the year	**395.29**
Energy Charge Rate (Rs/kWh)	**1.217**

8.2 The Commission has included the approved gap for FY 2010-11 in the total Annual Fixed Charges (AFC) for FY 2012-13.

8.3 The Commission has computed the revenue gap for the Petitioner for FY 2011-12 on provisional basis. The revenue gap for FY 2011-12, along with the carrying cost, shall be trued up and allowed by the Commission in the tariff for the next financial year when the audited accounts for FY 2011-12 are made available by the Petitioner.

A9: STATUS OF EARLIER DIRECTIVES

Directives given in Previous Tariff Orders	Status Update by Petitioner	Views of the Commission
Removal of Constraints The Commission directed the Petitioner to complete the feasibility survey and preparation of DPR for construction of 400 kV D/c transmission line from TTPS to Ranchi. The Petitioner was directed to submit a progress report on the same along with the Tariff Petition.	The Petitioner submitted that the feasibility survey and preparation of DPR for construction of 400 kV D/c transmission line from TTPS to Ranchi was carried out and submitted to Central Electricity Authority for approval. For charging of existing 220 KV line at 400 KV, tender has been floated by M/s POWERGRID for construction of 400 KV bays at Tenughat Switchyard.	The Commission directs the Petitioner to complete the work as per the directions of CEA at the earliest and submit quarterly progress report on the same to the Commission.
Energy Audit The Commission directed the Petitioner to have energy audit of its plant carried out by an accredited energy auditor as per the provisions of the Energy Conservation Act, 2001 and submit the Energy Audit findings to the Commission. The Commission has observed that the auxiliary consumption and station heat rate that has been reported by the Petitioner in its petition is quite high. The energy audit must focus on these two issues and recommend steps along with cost and time schedule for achieving values as per norms.	The Petitioner has submitted that the work for for Energy Audit and Performance Study of Unit No. II of Tenughat TPS was awarded to M/s National Productivity Council. The recommendations of M/s National Productivity Council has been partially implemented and the rest of recommendations like charging of HP Heaters, replacement of APH Basket will be implemented after getting material for which order has been placed. Recently Baseline Energy Audit under PAT Scheme was conducted by M/s Energo Engineering Projects Ltd in October 2011; whose audit report is awaited	The Commission directs the Petitioner to implement the recommendations made by NPC at the earliest and submit quarterly progress and performance reports to the Commission. The Petitioner is directed to submit the report prepared by M/s Energo Engineering Projects Ltd when it is received by the Petitioner.
Completion of MGR (Merry-Go-Round) System The Commission directed the Petitioner to ensure the work on the MGR is completed within this financial year and submit a completion report of the same to the Commission.	The Petitioner has submitted that all the works of MGR has been completed. MGR will be operational immediately after allocation of rail head collieries by CCL.	The Commission directs the Petitioner to sort out its issues with CCL and get the work started at utmost priority as this is resulting in the increased coal cost and generation tariff. The Commission directs the Petitioner to submit the status

Directives given in Previous Tariff Orders	Status Update by Petitioner	Views of the Commission
		report within one month of this issue of this Order.
Spare codifications and computerized maintenance management system The Commission directed the Petitioner to take steps for implementation of ERP-SAP and submit an implementation plan. The status report for the same was to be submitted along with the tariff petition of FY 2010-11.	The Petitioner has submitted that for Spare Codifications and Computerized Maintenance Management System it has approached TCS & SAP. These firms have made presentation before TVNL management. Based on presentation & necessity of the plant, preparation of scope of work for different modules like Stores, Accounts, HR, and O & M etc. is in the final stage. The estimated cost of the work is Rs.6 Cr.	The Commission directs the Petitioner to submit detailed progress report every three months from the issue of this Order.
Water Chemistry The Commission directed the Petitioner to maintain the DM plant properly and report to the Commission values regarding water chemistry, pH value, conductivity, oxygen content on a monthly basis.	The Petitioner has taken steps for maintaining the DM plant properly. The Petitioner had started generating report regarding water chemistry, pH value, conductivity; oxygen content has been submitted to the Commission.	The Commission directs the Petitioner to continue the submission of the reports.
Specific oil consumption The Commission directed the Petitioner to reduce the specific oil consumption to the normative levels specified in the JSERC Generation Tariff Regulations 2004 and its amendments by the end of FY 2011-12.	The Petitioner has stated that the higher specific oil Consumption (ml/Kwh) is mainly attributed due to following reasons: 1. Frequent tripping of Units due to poor quality & quantity of coal. 2. Grid backing down by JSEB. 3. Tripping of Transmission Lines: Arrangement for evacuation of power from Tenughat TPS is through the two transmission lines: ➢ Tenughat TPS to BSEB grid of Bihar Sharif Single Circuit of 400 KV line ➢ Tenughat TPS to Patratu TPS grid of 400 KV. Both lines are operating at 220 KV due	The Commission has noticed that the actual specific oil consumption for FY 2010-11 works out to 4.42 ml/kwh which clearly shows that the Petitioner has not taken adequate steps to reduce the specific oil consumption to the normative levels and instead given only reasons for non reduction of the same. The Commission directs the Petitioner to prepare an improvement plan for the reduction in specific oil consumption and submit the same to the Commission within two months of the issue of this Order.

Directives given in Previous Tariff Orders	Status Update by Petitioner	Views of the Commission
	to non readiness of 400 KV S/S at terminating ends. Due to constraints in existing two transmission lines, load on the units has to be regulated frequently.	
Ash Utilization & Management As per the MOEF Notification dtd Sept 14, 1999 all existing thermal power plants as on September 1999 have to achieve ash utilization level of 100% in a phased manner by 2013-14 in accordance with 15-year action plan. In the T.O. for FY 2007-08, the directive was given by the Commission to this effect which the Petitioner has not complied with, hence is directed to take necessary initiatives to sell the ash.	The Petitioner has submitted that in compliance of the MOEF Notification dated September 14, 1999 to achieve ash utilization level of 100% in a phased manner by 2013-14 in accordance with 15-year action plan; the Petitioner has approached to cement manufacturers like Ultratech Cement Co. & Burnpur Cement Co. for setting up Cement Plant nearby Tenughat TPS. Both cement manufacturers had visited site for setting up Cement Plants in the nearby areas of Tenughat TPS. But nothing has materialized till date.	The Commission views that the Petitioner has not taken the directive of the Commission seriously and directs the Petition to comply with the directive and submit the status report of the same within two months of the issue of this Tariff Order.
Repayment of Govt. loans The Commission is allowing certain amount by way of depreciation charge for repayment of loan every year but repayment of loan has not been undertaken. The Petitioner was required to submit the utilization of amount allowed by way of depreciation and to ensure the repayment of loan is done. The Commission observed that the interest on long term loans paid by the Petitioner is very high. The Commission directed the Petitioner to ascertain the interest rates of other banks and conduct a cost benefit analysis for restructuring of its outstanding loans. The Commission also directed the Petitioner to submit a report in this regard along with the tariff petition for FY2010-11. The Petitioner was also asked to pursue the matter of conversion of loan taken from Government into equity.	The Petitioner has submitted that due to non recovery of energy dues from JSEB, repayment of loan has not been undertaken. The amount allowed by way of depreciation is piled up with JSEB as energy dues and the repayment of loan is not done. The Petitioner is continuously pursuing the matter of conversion of loan taken from Government into equity. The Commission may like to consider this aspect and issue suitable guidelines to ensure cheap power availability.	The Commission views that the Petitioner should not link the Repayment of Loan with the recovery of dues from JSEB and work out a mechanism to liquidate the Govt Loan either through repayment or conversion of equity.
Improvement in performance of Operational parameters		

Directives given in Previous Tariff Orders	Status Update by Petitioner	Views of the Commission
The Commission notes that the operational performance of the Petitioner is very low. In particular, the SHR and PLF can be improved further. The Commission directed the Petitioner to implement the action plan proposed by it in the previous petition at the earliest and submit quarterly progress and performance reports to the Commission.	The Petitioner submitted that for improvement in SHR, they have started implementing following activities: a. Combustion Optimization. b. Proper Mill Maintenance & Replacement of Liners c. Classifier Replacement d. Timely Boiler Maintenance e. Scheduled Replacement of Burners & Orifices Some of the above have been implemented and some have to be implemented as purchase orders have placed and materials are awaited. The PLF during FY 2011-12 remained low due to collapse of Transmission Line and it will be better in FY 2012-13.	The Commission directs the Petitioner to implement these activities and the action plan at the earliest and submit quarterly progress and performance reports to the Commission.
Issues in Accounting Treatment of Expenses The Commission directed the Petitioner to submit a report on the end result of the same.	The Petitioner submitted that the work of preparation of Account Manual has been completed & same will be implemented after due approval of BoD.	The Commission directs the Petitioner to get the report approved by BoD and submit it to the Commission at the earliest.
Break-Up of Repair Works In its Tariff Order for FY 2007-08, Commission had allowed a sum of Rs.9.23 Cr., being the half of the estimated sum required for repair of Unit-I by BHEL. The Commission directs the Petitioner to provide the detailed break-up of repair works done by BHEL for Unit-1 within 3 months of the issue of this order. The Petitioner was directed to provide the break-up of the repair works to the Commission.	The Petitioner has submitted the details of breakup of repair work of Unit-I by BHEL during FY 2007-08.	The Commission accepts the submission made by the Petitioner.
Fixed Asset Registers The Commission had observed that the Petitioner is not maintaining a proper record of	The Petitioner has submitted that it is under process of maintaining a proper	The Commission directs the Petitioner to submit the

Directives given in Previous Tariff Orders	Status Update by Petitioner	Views of the Commission
its fixed assets in the form of a fixed assets register. Maintenance of a FAR helps the company in monitoring of impairment of assets and its impact on the financial situation of the company, overall control and monitoring of assets and also for deriving information for costing purposes and/or statutory proceedings including a statutory audit. The Petitioner was thus directed to create and maintain a FAR and to submit a compliance report of the same to the Commission within six months of issue of the Tariff Order of FY 2010-11.	record of its fixed assets in the form of a fixed assets register and compliance report of the same will be submitted to the Commission shortly.	compliance report within one month of the issuance of this Order.
Details of Outages The Petitioner was directed to give the details of outages of the station as per the format prescribed in Annexure 2 of the Tariff Order and furnish information to the Commission on the quarterly basis.	The details of outages of the station as per the format prescribed in Annexure-2 of the Tariff Order have been furnished for information to the Commission.	The Commission accepts the submission made by the Petitioner and directs the Petitioner to continue the submission of report in future also.
Details of CISF Cost The Commission directed the Petitioner to provide the following details of the expenses projected under CISF security cost along with the next tariff petition : a) Name & designation of the CISF personnel involved with their respective salaries; and **b)** Deployment against each CISF personnel.	The Petitioner submitted the details of CISF cost & its deployment during FY 2010-11.	The Commission accepts the submission made by the Petitioner and has allowed the CISF cost of Rs 5.70 Cr as submitted by the Petitioner in the True-up of FY 2010-11 in this Order.
Revision of PPA The Commission has observed that the PPA between the Petitioner and JSEB expired in August 2010. The Petitioner was directed to renegotiate the PPA at the earliest and submit the same for approval to the Commission.	The Petitioner submitted that as per directive of Commission, draft of PPA between the Petitioner and JSEB has been sent to JSEB on June 3, 2011. Even after several reminders to JSEB on revision of PPA, it hasn't responded and hence the PPA has not been executed till date.	The Commission shall take up the matter with JSEB.

A10: DIRECTIVES

10.1 The Commission throughout the Tariff Petition has observed that some areas of the operational and financial performance of the Petitioner need immediate attention. Therefore, the Commission in addition to the earlier directives given in Section 8 of this Order is issuing the following new directives.

Revision of PPA & Recovery of Dues

10.2 The Commission has observed that the Power Purchase Agreement (PPA) between the Petitioner and the purchaser-JSEB has already expired in August 2010. The Commission in its previous Tariff Order had directed the Petitioner to renegotiate its PPA and get the same ratified by the Commission.

10.3 The Petitioner has submitted that as per the directive of the Commission, it has already sent a draft PPA to JSEB for approval vide letters dated October 11, 2010 and June 3, 2011 but even after repeated reminders, JSEB has not responded to the matter.

10.4 The Commission is displeased with the events and views that it is a matter of grave concern that the Petitioner and JSEB have not executed the PPA even after almost two year of expiry of the earlier PPA.

10.5 In view of this, the Commission allows the Petitioner to sell upto 50 MW of power to other licensees/consumers and also directs the Petitioner to discuss the above mentioned issues with JSEB and may include the above issues in the PPA to be executed with JSEB.

10.6 The Commission directs the Petitioner and JSEB to execute the PPA within one month of the issue of this Tariff Order. The Commission also directs the Petitioner that if JSEB doesn't comply within one month of the issue of this Order, then the Petitioner, after getting the PPA ratified by the Commission, can treat it as final.

Investment Plan

10.7 The Commission directs the Petitioner to submit the Detailed Project Report (DPR) and other related documents and take prior approval of the Commission for any capital scheme of value greater than or equal to Rs One Cr at least one month prior to commencement of proposed work.

Competitive Procurement

10.8 The Commission directs the Petitioner to procure equipment and services through competitive bidding process. The Commission shall also review the competitive processes followed by the Petitioner while reviewing the capital expenditure and capitalization at the end of each year of the Control Period.

Quality of coal

10.9 The Petitioner has submitted that the coal quality is very poor because of which it unable to maintain the SHR at the normative levels. JSEB has enhanced the LC amount by 15 Cr from Apr'12 as submitted by the Petitioner and TVNL is in position to enter into FSA with CCL. The Petitioner is directed to negotiate with CCL for procurement of good quality coal and inform the Commission in three months.

Auxiliary consumption

10.10 The Petitioner should submit the steps taken to reduce the auxiliary consumption and an action plan for further reduction in auxiliary consumption within three months of the issuance of this Order.

Loan details and repayment

10.11 The Petitioner should submit the loans details along with the repayment made against each of them within one month of the issuance of this Order.

Data adequacy in next Tariff petition and timelines

10.12 The Commission directs the Petitioner to come up with the next tariff petition for Annual Performance Review of FY 2013-14 removing the various data deficiencies highlighted throughout the Tariff Order along with the audited accounts for FY 2011-12 and latest actual figures of FY 2012-13.

This Order is signed and issued by the Jharkhand State Electricity Regulatory Commission on this the 30th day of May, 2012.

Date: 30th May, 2012

Place: Ranchi

Sd/-	Sd/-
(T.MUNIKRISHNAIAH)	(MUKHTIAR SINGH)
MEMBER (E)	CHAIRPERSON

A11: ANNEXURE-I

Table 60: List of participating persons in the public hearing

Name	Address / Organisation if any
Anil Kumar	MD, TVNL
S.R. Singh	EEE, TVNL
S.K. Choudhary	EEE, TVNL
Atul A. Singh	Feedback Infra, Consultant of TVNL
Nikhil Gambhir	Feedback Infra, Consultant of TVNL
M.K. Prasad	Dir. Accounts, TVNL
N.K. Saha	F&A, TVNL