# Jharkhand State Electricity Regulatory Commission

Tariff Order
on
Annual Revenue Requirement
and
Determination of Generation Tariff
for
FY2008-09 &2009-10
for
**Tenughat Vidyut Nigam Limited**
**(TVNL)**

Ranchi

March 2010

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## List of Abbreviations

| Abbreviation | Description |
|---|---|
| A&G | Administrative and General |
| AAD | Advance Against Depreciation |
| ARR | Aggregate Revenue Requirement |
| COD | Commercial Operation Date |
| CWIP | Capital Work in Progress |
| FY | Financial Year |
| GCV | Gross Calorific Value |
| GFA | Gross Fixed Assets |
| GoI | Government of India |
| GoJ | Government of Jharkhand |
| JSEB | Jharkhand State Electricity Board |
| JSERC | Jharkhand State Electricity Regulatory Commission |
| kcal | Kilocalorie |
| kg | Kilogram |
| kWh | Kilowatt-hour |
| 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 (hereinafter referred to as the "JSERC" or "the Commission") was established by the Government of Jharkhand under Section 17 of the Electricity Regulatory Commission Act, 1998 on August 22, 2002. The Commission became operational 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; ie.

(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'), a wholly owned Generating Company of Government of Jharkhand was constituted in 1987 under the Indian Company's Act, 1956.

1.9 The petitioner owns and operates an installed power generation capacity of 420 MW with two units of 210 MW each that are the subject of tariff determination in this Tariff Order. Unit I commenced its operations in September, 1996 and Unit II in September, 1997.

## Scope of the present order

1.10 This Order relates to the ARR and Tariff petitions filed by the Petitioner before the JSERC for approval of its

(a) ARR and determination of tariff for FY 2008-09 and

(b) ARR and determination of tariff for FY 2009-10 and provisional truing up of ARR for FY 2007-08 & FY 2008-09 as per provisional annual accounts for these years

in accordance with Sections 61, 62 and 64 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')

1.11 While determining tariff for FY 2007-08, 2008-09 & FY 2009-10, the Commission has taken into consideration the following:

(a) Provisions of section 86 of the Act,

(b) Provisions of the National Electricity Policy,

(c) Provisions of the National Tariff Policy;

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

(e) Power Purchase agreement between the Petitioner & JSEB.

# A2: PROCEDURAL HISTORY

## Background

2.1 The Petitioner has filed the following petitions for Unit I and Unit II of Tenughat Thermal Power Station:

(a) ARR and tariff petition for FY 2008-09 on June 25, 2009

(b) ARR and tariff petition for FY 2009-10 on June 25, 2009

2.2 In accordance with Section 64(3) of the Electricity Act 2003, the State Electricity Regulatory Commission, within one hundred and twenty days from receipt of the application under section 64(1), is required to either accept it and issue a tariff order or reject the application for reasons to be recorded in writing if the application is not in accordance with the provisions of the Electricity Act, 2003.

2.3 The petitions for FY 2008-09 and FY 2009-10 were not submitted within the time limits specified in the regulations and hence the process of determination of the tariff got delayed.

## Information Gaps in the petition

2.4 As part of the exercise of tariff determination for FY 2007-08, 2008-09 and FY 2009-10, several deficiencies were observed in the tariff petition received from the petitioner. These information gaps were communicated to the petitioner in a note sent to the Petitioner vide JSERC/09/2009/208 dated August 19, 2009.

2.5 The petitioner subsequently submitted its response and provided the requisite data vide letter dated 30 November, 2009.

## Inviting Public Response

2.6 After acceptance of the petitions, the Commission directed the petitioner to make available the copies of the ARR and tariff petition to the general public, and issue a public notice inviting comments/ suggestions thereon. Accordingly, the public notice was published in the following newspapers.

**Table 1- Names of newspapers and dates on which the public notice appeared therein**

| Newspaper | Date |
|---|---|
| Hindustan Times ( English) | 16.01.10 & 17.01.10 |
| Telegraph ( English) | 16.01.10 & 17.01.10 |
| Prabhat Khabar ( Hindi) | 16.01.10 & 17.01.10 |
| Hindustan ( Hindi) | 16.01.10 & 17.01.10 |

2.7 A period of thirty days was mentioned in the publication for submitting the comments/suggestions from the public.

2.8 The Commission subsequently issued advertisement on the website www.jserc.org and various newspapers for conducting public hearing on the ARR and Tariff filing of the petitioner for FY 2008-09 and FY 2009-10. The details of the newspapers wherein the advertisements were issued by the Commission are detailed hereunder:

**Table 2- Names of newspapers and dates on which the public notice appeared therein**

| Newspaper | Date |
|---|---|
| **Prabhat Khabar (Hindi)** | 17.02.10 |
| **Hindustan (Hindi)** | 17.02.10 |
| **Aaj ( Hindi)** | 17.02.10 |
| **Dainik Jagran (Hindi)** | 17.02.10 |
| **Ranchi Express (Hindi)** | 17.02.10 |
| **Hindustan Times ( English)** | 17.02.10 |
| **The Pioneer (English)** | 17.02.10 |
| **Quami Tanzeem (Urdu edition)** | 17.02.10 |

## Submission of comments/suggestions and conduct of public hearing

2.9 No comments were received from the public in writing within the time frame on the ARR filings filed by the Petitioner.

2.10 The public hearing was held on 21.02.2010 in the office premises of the Commission

2.11 The Commission decided to finalize the generation tariff for FY 2008-09 and FY 2009-10 as per the petitions of these years and also provisionally true up FY 2007-08 & FY 2008-09 as per the provisional accounts available for these years for the two Units of Tenughat Thermal Power Station.

# A3: SUMMARY OF THE PETITIONS FILED BY THE PETITIONER

## Overview of the Thermal Stations

3.1 The petitioner has submitted that it operates two Units (Units I and II) of Tenughat Thermal Power Plant that are the subject of tariff determination in the petitions filed by it. With the creation of Jharkhand State on November 15, 2000, the Petitioner is an undertaking of Government of Jharkhand. 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 is not in a position 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. However, based on the expenditure details available with TTPS, the total cost of the project including Interest during construction (IDC) is estimated at Rs.1355.58 Cr. This has been audited by Chartered Accountants.

3.2 The following table summarizes the information pertaining to the two Units of the power plant operated by the petitioner.

**Table 3- Summary of power plants owned by the Petitioner**

| Name of thermal plant | Installed Capacity (MW) | Status of Operation | Commercial Operation Date |
|---|---|---|---|
| Unit I, Tenughat Power Plant | 210 | Operational | September, 1996 |
| Unit II, Tenughat Power Plant | 210 | Operational | September, 1997 |

## Status of PPA

3.3 The petitioner entered into a Power Purchase Agreement (PPA) with JSEB on July 19, 2005. The PPA was executed on September 1, 2005 and remains valid and operative till August 1, 2010. As per the PPA, the applicable rate for sale of energy by the Petitioner to JSEB will be the rate decided by JSERC at delivery point.

## ARR & Tariff Determination

3.4 The tariff for sale of electricity from a thermal power generating station comprises of two parts, namely, the recovery of annual capacity (fixed) charges and energy (variable) charges.

3.5 The annual capacity (fixed) charges consist of:

(a) Return on equity
(b) Interest on loan capital
(c) Operation & Maintenance (O&M) expenses
(d) Depreciation
(e) Interest on working capital

3.6 The energy (variable) charges cover fuel cost comprising:

(a) The cost of primary fuel (coal), and
(b) The cost of secondary fuel (oil)

## Tariff petition for FY 2008-09

3.7 The table below summarizes the variable cost components as proposed by the petitioner in the petition of FY 2008-09 for the tariff period of that year:

**Table 4- Proposed Energy (variable) charges for FY 2008-09**

| Energy Charge Components | Units | Unit I&II |
|---|---|---|
| Installed capacity | MW | 420 |
| Plant Load Factor | % | 60.43 |
| Gross Generation | MUs | 2223 |
| Auxiliary Consumption | % | 8.37 |
| Net Generation | MUs | 2037 |
| Specific Coal Consumption | Kg/Kwh | 0.715 |
| Total Coal Consumption | MT | 1589745.3 |
| Total Coal Consumption including transit losses @ 0.30% | MT | 1594515 |
| Delivered coal price | Rs./MT | 1295.50 |
| Total Coal cost | Rs. Lakhs | 20656.94 |
| Specific Oil Consumption | ml / kWh | 2.78 |
| Total Oil consumption | Kl | 6181 |
| Delivered Oil price | Rs./Kl | 39045 |
| Total oil cost | Rs. Lakhs | 2413.41 |
| Coal cost per unit | Rs./kwh | 1.014 |
| Oil cost per unit | Rs./Kwh | 0.118 |
| Total Fuel Cost per unit ( energy charges) | Rs./kwh | 1.132 |
| Total Fuel Cost | **Rs. Cr.** | **230.70** |

3.8 The table below summarizes the net ARR as proposed by the petitioner in the petition of FY 2008-09 for the tariff of that year:

**Table 5- Proposed ARR for FY 2008-09 (Rs. Cr.)**

| | Unit I&II |
|---|---|
| O&M expenses | 84.12 |
| Depreciation | 45.28 |
| Interest on Loan | 83.06 |
| Interest on Working Capital | 15.70 |
| Return on Equity | 19.32 |
| Total Fixed Charges | **247.48** |
| Less: NTI | **4.20** |
| Energy Charges | **230.70** |
| Net ARR | **473.99** |

## Tariff petition for FY 2009-10

3.9 The table below summarizes the variable cost components as proposed by the petitioner in the petition of FY 2009-10 for the tariff of that year:

**Table 6 - Proposed Energy (Variable) Charges for FY 2009-10**

| Energy Charge Components | Units | Unit I&II |
|---|---|---|
| Installed capacity | MW | 420 |
| Plant Load Factor | % | 67.68 |
| Gross Generation | MUs | 2490 |
| Auxiliary Consumption | % | 9 |
| Net Generation | MUs | 2266 |
| Specific Coal Consumption | Kg/Kwh | 0.720 |
| Total Coal Consumption | MT | 1792859 |
| Total Coal Consumption including transit losses | MT | 1798238 |
| Delivered coal price | Rs./MT | 1300.00 |
| Total Coal cost | Rs. Lakhs | 23377.09 |
| Specific Oil Consumption | ml / kWh | 2.50 |
| Total Oil consumption | Kl | 6225 |
| Delivered Oil price | Rs./Kl | 39045.20 |
| Total oil cost | Rs. Lakhs | 2430.64 |
| Coal cost per unit | Rs./kwh | 1.032 |
| Oil cost per unit | Rs./Kwh | 0.107 |
| Total Fuel Cost per unit (energy charges) | Rs/ Kwh | 1.139 |
| Total Fuel Cost | **Rs. Cr.** | **258.08** |

3.10 The table below summarizes the annual revenue requirement as proposed by the petitioner in the petition for FY 2009-10 :

**Table 7- Proposed ARR for FY 2009-10 (Rs. Cr.)**

| | Unit I&II |
|---|---|
| O&M expenses | 124.10 |
| Depreciation | 45.55 |
| Interest on Loan | 83.15 |
| Interest on Working Capital | 18.05 |
| Return on Equity | 19.43 |
| Income Tax | Nil |
| Total Fixed Charges | **290.28** |
| Less: NTI | **2.00** |
| Energy Charges | **258.08** |
| Net ARR | **546.36** |

3.11 Apart from the petitions filed for FY 2008-09 & FY 2009-10, the petitioner has submitted the provisional accounts for FY 2007-08 & FY 2008-09 on the basis of which the Commission has decided to provisionally true up the ARR for FY 2007-08 & FY 2008-09.

# A4: COMMISSION'S ANALYSIS OF THE PETITION FOR FY 2008-09

4.1 The Commission has scrutinized the petition filed by the petitioner for FY 2008-09. Component-wise details of the petitioner's submission and the Commission's analysis and approvals applicable for FY2008-09 have been discussed in this section.

## Basis of Fuel Cost & Fixed Cost Determination

*Petitioner's submission*

4.2 The petitioner has submitted its proposal of energy and fixed charges as per the terms and conditions of the PPA signed between the petitioner and JSEB in 2005.

*Commission's analysis*

4.3 The PPA states that the applicable rate of sale of energy by the Petitioner to JSEB will be the rate as decided by JSERC at delivery point. The Commission has determined the tariff for FY 2008-09 in accordance with the 'Generation Tariff Regulations, 2004'.

## Plant Load Factor (PLF)

*Petitioner's submission*

4.4 The petitioner has submitted a PLF of 60.43%. The petitioner stated that historically the generating units have operated at much below their potential because of transmission constraints like frequent tripping of transmission lines and in addition JSEB has not been in a position to consume the power generated from both the units and station was asked to back down. Apart from this, there were unit outages due to tube leakages etc.

4.5 The petitioner has also stated that there were managerial crisis in TVNL during the period in which breakdown of Unit-I took place. There was no Chairman for a period from Oct'2006 to November'2007 and also the post of MD was vacant for two and half months i.e. from Oct'2007 to December'2007. The new Board was formed in the month of Dec'2007. On the formation of new board, the managerial actions were taken and Unit-I was revived in June'2008. Since then Unit-I is running at a PLF of over 70%.

*Commission's analysis*

4.6 During determination of tariff for FY 2007-08, the petitioner had submitted a PLF of 48% caused due to the break down of Unit-I in May'2007. The Commission had directed the petitioner to take suitable measures to put the unit back in to operation as soon as possible.

4.7 The petitioner has been able to restore Unit-I back in to operation in June'2008 and hence been able to achieve a PLF of 60.43% in FY 2008-09, which is still less than the benchmark PLF of 80%, but better than the PLF in FY 2007-08. The Commission, given the past trend, would like to give some more time to these units to achieve the benchmark norms as fixed by JSERC.

4.8 Accordingly, the Commission considers the PLF of 60.43% submitted by the petitioner. However, the Commission directs the petitioner to take adequate and sustainable measures to further improve the PLF & availability of both the Units to bring it at par with the benchmark level by the end of FY 2011-12. Henceforth, the Commission will not consider PLF & availability lower than the benchmark value as prescribed in the 'Generation Tariff Regulations 2004' and amendments thereto.

## Gross Generation

*Petitioner's submission*

4.9 The petitioner has submitted gross generation of 2223 MUs for the both the Units for FY 2008-09.

*Commission's analysis*

4.10 For determining gross generation, the Commission has taken into consideration the proposed values of PLF for both the Units and hence approves the gross generation of 2233 MUs for both the Units of TTPS for FY 2008-09.

## Auxiliary Consumption

*Petitioner's submission*

4.11 The petitioner has stated that the auxiliary consumption is required for different equipments like feed pumps, cooling water pumps, air fans, coal grinding mills, ash handling equipments, common auxiliaries etc. of the generating station. The petitioner has taken many steps to keep auxiliary consumption at minimum levels like testing and calibrating defective meters and installing digital energy meters in the colony substation. As a result of these measures, the auxiliary consumption has come down to 8.37% in FY 2008-09 from 9.95% in FY 2007-08

*Commission's analysis*

4.12 Auxiliary consumption refers to the quantum of energy generated that is used up within the plant during power generation process. More the auxiliary consumption lower will be the net generation. Since the auxiliary consumption specified in the petition for Unit I and Unit II is lower than that specified in the Regulations, the Commission approves the auxiliary consumption proposed by the petitioner which is 8.37% for both the Units of the petitioner.

## Net Generation

*Petitioner's submission*

4.13 The petitioner has projected its net generation for FY 2008-09 to be 2037 MUs for both the Units, after taking into account the projections for gross generation and auxiliary consumption.

*Commission's analysis*

4.14 Since the Commission has approved the gross generation and auxiliary consumption proposed by the petitioner, the Commission also approves the net generation of 2037 MU for the two Units of Tenughat Power station.

## Station Heat Rate (SHR)

*Petitioner's submission*

4.15 The petitioner has submitted a SHR of 3075 Kcal/Kwh. The petitioner stated that all-India average SHR for plants as per Central Electricity Authority's (CEA) 'Review of Performance of Thermal Power Stations (2007-08)' has been 2703 Kcal/Kwh and as complete report for the year 2007-08 is still not available, the average rate for Eastern region is not known.

*Commission's analysis*

4.16 The 'Generation Tariff Regulations, 2004' specifies the station heat rate of 2500 kcal/kWh during the post-stabilization period of coal-based generation stations with capacity between 200 MW and 500 MW. The station heat rate proposed by the petitioner is very high. In the previous tariff order for FY 2007-08 also, the Commission had approved a SHR of 2500 Kcal/Kwh. The Commission is not in agreement with the submissions of the petitioner for approving a higher SHR for FY 2009-10. The Commission approves a SHR as per the 'Generation Tariff Regulations, 2004' at 2500kcal/kWh for FY 2008-09 for both the Units.

## Specific oil consumption

*Petitioner's submission*

4.17 The petitioner has submitted specific oil consumption of 2.78 ml/kWh for both the Units. The petitioner states that the norm of 2 ml/Kwh may be workable for a station working efficiently and it may be difficult to limit the oil consumption to 2.0 for a station like Tenughat TPS with numerous outages due to tripping of transmission lines, backing down of units, etc.

*Commission's analysis*

4.18 The specific oil consumption is the amount of secondary fuel (in ml) consumed in the process of generation of one unit 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.

4.19 The 'Generation Tariff Regulations, 2004' specify a maximum secondary fuel consumption of 2.0 ml/kWh and the Commission does not find any suitable justification to approve the specific oil consumption at a level higher than the norms. The Commission thereby approves a specific oil consumption of 2ml/Kwh for FY 2008-09 for both the units.

## Gross Calorific Value (GCV) of primary and secondary fuel

*Petitioner's submission*

4.20 The petitioner sources Grade D coal from the collieries of Central Coal Fields Limited which is having a calorific value of about 4300 Kcal/Kg. The GCV of secondary fuel is considered as 10000 kcal/kl.

*Commission's analysis*

4.21 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 requisite amount of energy.

4.22 The Petitioner uses Grade D coal and gross calorific value of grade 'D' coal ranges between 4200-4940 Kcal/Kg. Therefore, the Commission accepts the calorific value as proposed by the Petitioner at 4300 Kcal/Kg.

4.23 The proposed GCV of secondary fuel (10,000 kcal/kl) is accepted by the Commission.

## Price of primary and secondary fuel

*Petitioner's submission*

4.24 The petitioner has taken the delivered cost of coal to be Rs. 1295.50 per MT and the delivered cost of secondary fuel as Rs. 39045/kilolitre.

*Commission's analysis*

4.25 Fuel price is an uncontrollable cost for the petitioner and thus the Commission is of the view that the actual rate of fuel paid by the petitioner should be accepted. Hence, the Commission approves the rates of coal and secondary fuel proposed by the petitioner for FY 2008-09 subject, however, to a subsequent true-up when the actual prices of coal and secondary oil for FY 2008-09 would be available.

## Transit Loss

*Petitioner's submission*

4.26 The petitioner has proposed 0.3% transit loss of coal. The transportation of coal on a bumpy road results in loss of coal by spilling from the trucks. In addition, there is loss due to wind, evaporation of moisture etc.

*Commission's analysis*

4.27 The normative transit and handling losses as a percentage of quantity of coal dispatched by the coal supply company as prescribed by JSERC is 0.3% for pithead generating stations. The Commission approves the figure given by the petitioner as 0.3% for FY 2008-09

## Summary of Plant parameters & fuel cost determinants

4.28 The summary of plant parameters and fuel cost determinants for the two Units of Tenughat plant of the Petitioner submitted by the petitioner and approved by the Commission is given below:

**Table 8- Plant parameters & Fuel cost determinants for FY 2008-09**

| Parameters | Unit | Unit I&II | |
|---|---|---|---|
| | | Submitted by the Petitioner | Approved by JSERC |
| Capacity | MW | 420 | 420 |
| Plant Load Factor | % | 60.43% | 60.43% |
| Auxiliary Consumption | % | 8.37% | 8.37% |
| Station Heat Rate | Kcal/Kwh | 3075 | 2500 |
| GCV of Coal | Kcal/Kg | 4300 | 4300 |
| GCV of oil | Kcal/Kg | 10,000 | 10,000 |
| Specific oil consumption | ml/Kwh | 2.78 | 2.0 |
| Coal consumption including transit loss | MT | 1594515 | 1286157 |

| | | | |
|---|---|---|---|
| Oil consumption | Kl | 6178.6 | 4446.7 |
| Price of Coal | Rs/MT | 1295.50 | 1295.50 |
| Price of Oil | Rs/KL | 39045.2 | 39045.2 |
| Total Coal Cost | Rs. Cr | 206.57 | 166.62 |
| Total Oil cost | Rs. Cr | 24.12 | 17.36 |
| Net Fuel Cost | **Rs. Cr** | **230.70** | **183.98** |
| Energy Charges | **Rs/Unit** | **1.132** | **0.90** |

## Project Cost structure

*Petitioner's submission*

4.29 On being directed by the Commission to present additional information, the petitioner has submitted its annual accounts since from FY 1996-97.

*Commission's analysis*

4.30 On the perusal of annual accounts as submitted by the petitioner, the initial project cost of both the Units is derived at as Rs.1304.91 Cr. and taking into consideration the additional capitalisation during the intervening period the project cost during FY 2008-09 is presented in the table given below:

**Table 9- Project cost structure for FY 2008-09**

| Item | Amount (Rs. Cr) |
|---|---|
| Project cost at start of 2008-09 | 1350.26 |
| Additional capitalization in 2008-09 | 1.64 |
| Total Project Cost | 1351.90 |

## Operation & Maintenance (O&M) Expenses

*Petitioner's submission*

4.31 The petitioner has submitted that the O&M expenses of the generating station include employee cost, repairs and maintenance, consumption of stores & spares, water charges, ash disposal, pollution control cess, insurance and other administrative and general expenses of the corporate office at Ranchi. The maintenance expenditure has increased substantially due to the age of the plant and numerous outages experienced.

4.32 The table below details the expenditure incurred by the petitioner on O&M Expenses:

**Table 10-O & M Expenses for FY 2008-09**

| Particulars | Cost (Rs. Cr) |
|---|---|
| **Employee Cost** | 15.32 |
| **A&G Expenses** | 10.59 |
| **R&M** | 11.26 |
| **O&M including Capital expenditure** | 46.85 |
| **Total** | **84.12** |

*Commission's analysis*

4.33 The Commission observes that the O&M expenses claimed by the petitioner are very high. The Commission has computed the O&M expenses as per the 'Generation Tariff Regulations, 2004' for plants set up before 01.04.2004, which states that the O&M should be 2.50% of the capital cost with an escalation @ 6% p.a.

4.34 The initial capital cost of both the units is as Rs.1304.91Cr. and additional capitalisation of Rs. 46.99 Cr. upto 31.3.2009.

4.35 Therefore, the Commission approves the aggregate O&M expenses of Rs.64.76 Cr. for FY 2008-09.

## Depreciation

*Petitioner's submission*

4.36 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 JSERC (terms and conditions for determination of thermal generation tariff) Regulation, 2004. The residual life of an asset is considered as 10% and depreciation is allowed upto a maximum of 90% of the historical capital cost of the asset. Therefore, the depreciation has not been calculated on the assets where the cumulative depreciation has reached 90% of the historical cost of the assets.

4.37 The depreciation expenses for the utility, submitted by the petitioner are as follows:

**Table 11- Depreciation Expenses for FY 2008-09**

| Item | Depreciation Amount (Rs. Cr) |
|---|---|
| Depreciation for Plant | 45.17 |
| Depreciation for HO | 0.11 |
| Depreciation for Additional Capitalization | 0.00 |
| Total | **45.28** |

4.38 The depreciation submitted by the petitioner for FY 2008-09 is Rs. 45.28 Cr for both the Units.

*Commission's analysis*

4.39 Depreciation is calculated on the historical cost of the asset at 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.

4.40 The Commission has reviewed the depreciation costs proposed by the petitioner and found it in accordance with the 'Generation Tariff Regulations, 2004'. The Commission thereby approves the depreciation charges of Rs. 45.28 Cr for the two Units of Tenughat Power station for FY 2008-09.

## Interest on Loan

*Petitioner's submission*

4.41 The petitioner has submitted that the loan outstanding as on 31.03.2009 is Rs. 638.90 Cr. This comprises of Rs 608.90 Cr loan from Bihar Government and Rs. 30 Crore loan from Jharkhand Government. As per the terms and conditions, the State Government loan is repayable in 15 equal instalments. As per the petitioner, it is not able to repay loan due to non-recovery of dues from JSEB. Therefore the petitioner requests the Commission to approve the interest charges of Rs. 83.06 Cr for FY 2008-09.

4.42 The table below summarises the outstanding loan and interest charge status for FY 2008-09:

**Table 12- Details of the outstanding loan and interest payable**

| Name of the Institution | Balance at the beginning of the year | Loan received during the year | Repayment during the year | Balance outstanding at the end of the year | Rate of Interest (%) | Interest for the year |
|---|---|---|---|---|---|---|
| Bihar Govt. Loan | 608.90 | - | - | 608.90 | 13 | 79.16 |
| Jharkhand Govt. Loan | 30.00 | - | - | 30.00 | 13 | 3.90 |
| Total | **638.90** | | | **638.90** | | **83.06** |

*Commission's analysis*

4.43 The Commission allows the aggregate interest of Rs. 83.06 Cr for the existing debt components from long term loans.

4.44 Meanwhile, the Commission observes that the Petitioner is not repaying the loan due to their inability to collect dues from JSEB and had there been timely repayment of loans, the interest on account of the loan would have come down. The Commission further observes that the Petitioner has invested a large amount in fixed deposits and directs the Petitioner to explain why it is holding such huge amount in deposits and not repaying the loans to the lenders. **The Commission has given directives to the petitioner in this regard in directive section of this order.**

## Interest on Working Capital

*Petitioner's submission*

4.45 In the tariff petition, petitioner has computed the Interest on Working Capital on the following basis:

**Table 13- Interest on Working Capital**

| Particulars | Proposed for 2008-09 Rs. Cr |
|---|---|
| Cost of Coal for 1½ months | 25.82 |
| Secondary Fuel Oil for 1 month | 2.01 |
| Operation & Maintenance expenses for 1 month | 7.01 |
| Maintenance expenses @ 1% of Plant & Equipment | 11.72 |
| Receivables equivalent to 2 months of fixed and variable Charges | 78.99 |
| Total Working Capital | 125.56 |
| Interest on Working Capital @ 12.50% | 15.70 |

4.46 The petitioner has considered the interest on Working Capital as 12.50%.

*Commission's analysis*

4.47 The rate of interest on working capital is taken 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 determined.

4.48 The Working Capital requirement as per the 'Generation Regulations, 2004' includes:

(a) Cost of coal for one month corresponding to target availability.

(b) Cost of coal for ½ months for pit-head generating stations and one month for non-pithead generating stations, corresponding to the, "target availability".

(c) One month stock for secondary fuel oil, corresponding to "target availability".

(d) Operation & Maintenance expenses for one month.

(e) Maintenance spares @ 1% of plant & equipment cost as on 01.04.2004 or the date of commercial operation, whichever is later, and

(f) Receivables equivalent to two months of fixed and variable charges below the level of target availability shall be on pro-rata basis.

4.49 The calculation of interest on working capital is summarised below:

**Table 14- Calculation of Working Capital as approved by the Commission**

| Particulars | Proposed for 2008-09 Rs. Cr |
|---|---|
| Cost of Coal for 1½ month | 20.83 |
| Secondary Fuel Oil for 1 month | 1.45 |
| Operation & Maintenance expenses for 1 month | 5.40 |
| Maintenance expenses @ 1% of Plant & Equipment | 11.72 |
| Receivables equivalent to 2 months of fixed and variable Charges | 67.44 |
| Total Working Capital | 106.82 |
| Interest on Working Capital @ 12.25% | 13.09 |

4.50 The Commission has considered the interest on Working Capital as 12.25%, which is the short-term Prime Lending Rate of State Bank of India as on 1st April 2008. Accordingly, the Commission has computed and approved the interest on working capital to be Rs.13.09 Cr. for both the Units of the petitioner for FY 2008-09.

## Return on Equity (RoE)

*Petitioner's submission*

4.51 The petitioner has submitted that for past so many years, it has been asking for return on its initial equity contribution of Rs.100 Cr. In FY 2007-08, the petitioner made a contract settlement and paid Rs. 38 Cr to M/s BHEL Limited. This amount was a part of the project cost but as it was not settled, the petitioner in the larger interest of consumers did not include the amount in project cost. Now, the petitioner has closed this contract and paid the required amount. It requests the Commission to accept the total amount as equity contribution as complete payment has been made through its reserves and no return or interest has been charged earlier.

4.52 The petitioner has also stated that its equity contribution is much lower than the capped percentage of 30% as investments made through its reserves has not been added in equity component.

**Table 15-Calculation of Return on Equity (FY 2008-09)**

| Particulars | Proposed for 2008-09 Rs. Cr |
|---|---|
| Initial Equity at the time of CoD | 100 |
| Additional Capitalisation during FY 2008-09 | 38.036 |
| Total equity | 138.036 |
| Return on Equity (%) | 14% |
| Return on Equity | 19.32 |

*Commission's analysis*

4.53 The Commission has calculated the return on initial equity based on the figure submitted by the petitioner and has considered a rate of 14% for calculating return on equity in accordance the "Generation Tariff Regulations,2004'.

4.54 The Commission has also considered the additional capitalisation of Rs.32.48 Cr. during FY 2007-08 and an additional capitalisation during FY2008-09 amounting to Rs.1.64 Cr., which is taken on pro-rata basis assuming mid-year as reference point.

4.55 Accordingly, the Commission has calculated and approved Rs.18.66 Cr as the RoE for the two Units for FY 2008-09.

**Table 16-Calculation of return on equity by the Commission(Rs. Cr.)**

| Particulars | Proposed for 2008-09 |
|---|---|
| Initial Equity at the start of FY 2008-09 | 132.48 |
| Additional Capitalisation during FY 2008-09 | 1.64 |
| Equity at the end of FY 2008-09 | 134.12 |
| Return on Equity (%) | 14% |
| Return on Equity | 18.66 |

## Non tariff Income

*Petitioner's submission*

4.56 The petitioner has estimated the non-tariff income as Rs.4.20 Cr. The petitioner has stated that the non tariff income includes miscellaneous receipts such as penalties, rent received, interest on investment, sale of scrap etc.

*Commission's analysis*

4.57 The Commission has accepted and approved the non-tariff income of Rs.4.20 Cr. as submitted by the petitioner.

## Income Tax

*Petitioner's submission*

4.58 The petitioner has stated that there is no assessable income for Income tax purpose and hence no tax on income is proposed for the year 2008-09.

*Commission's analysis*

4.59 The Commission agrees with the petitioner. .

## Summary of Fixed Cost determinants and Generation Tariff

4.60 The summary of Fixed cost determinants and Generation Tariff for the two Units of Tenughat thermal power plant as submitted by the petitioner and as approved by the Commission for FY 2008-09 is given below:

**Table 17- Fixed cost determinants and Generation Tariff (FY2008-09) (Rs. Cr)**

| Parameters | Unit | Unit I&II | |
|---|---|---|---|
| | | Submitted by the Petitioner | Approved by JSERC |
| O&M charges | Rs. Cr | 84.12 | 64.76 |
| Depreciation | Rs. Cr | 45.28 | 45.28 |
| Interest on Loan | Rs. Cr | 83.06 | 83.06 |
| Return on Equity | Rs. Cr | 19.32 | 18.66 |
| Interest on Working Capital | Rs. Cr | 15.70 | 13.09 |
| Total Fixed cost | Rs. Cr | 247.48 | 224.84 |
| Energy Cost | Rs. Cr | 230.70 | 183.98 |
| Total Expenses | Rs. Cr | 478.18 | 408.82 |
| Non-tariff Income | Rs. Cr | 4.20 | 4.20 |
| Net Total Expenses | Rs. Cr | 473.99 | 404.63 |

# A5: PROVISIONAL TRUE UP OF FY 2007-08 AS PER PROVISIONAL ANNUAL ACCOUNTS FOR THAT YEAR

5.1 As part of the tariff determination process, the Commission acquired the provisional accounts for FY 2007-08 from the petitioner.

5.2 The Commission scrutinized the provisional accounts submitted by the petitioner for FY 2007-08 and observed variations on the cost and operational parameters between the figures approved by the Commission in tariff order FY 2007-08 and the provisional accounts for that year.

5.3 Accordingly, the Commission decided to conduct the provisional truing up for FY 2007-08 based on the actual data from the provisional annual accounts and as per the 'Generation Tariff Regulations, 2004'.

5.4 The component-wise description of Commission's analysis on the same is given below.

## Plant Load Factor (PLF)

*Petitioner's submission*

5.5 The petitioner has submitted the actual PLF of 47.78% for FY 2007-08 for the two Units of the Tenughat Power Plant.

*Commission's analysis*

5.6 The Commission has approved the PLF of 47.78% for the two units but restates that the petitioner needs to take suitable measures to improve the PLF and availability by FY 2011-12 as per the norms of the Commission.

## Gross Generation

*Petitioner's submission*

5.7 The petitioner has submitted the actual gross generation on the basis of proposed PLF of the two Units. The Gross generation has been calculated by the petitioner at 1795 MUs for the two Units.

*Commission's analysis*

5.8 The Commission approves the Gross Generation at 1795 MUs for the two Units of Tenughat TPS.

## Auxiliary Consumption

*Petitioner's submission*

5.9 The petitioner has submitted that the auxiliary consumption for FY 2008-09 at 9.95% for both the Units of Tenughat plant.

*Commission's analysis*

5.10 The 'Generation Tariff Regulations, 2004' states that the auxiliary consumption allowed for such plants will be 9%. Accordingly the Commission has approved the auxiliary consumption at 9%.

## Net Generation

*Petitioner's submission*

5.11 The actual Net Generation submitted by the petitioner is at 1616.14 MUs for the two Units of Tenughat Plan for FY 2007-08.

*Commission's analysis*

5.12 The Commission has computed the net generation at 1633.19 MUs for the two units of Tenughat TPS for FY 2007-08, on the basis of the gross generation and auxiliary consumption calculated and approved by the Commission.

## Station Heat Rate (SHR)

*Petitioner's submission*

5.13 The petitioner has submitted the actual SHR at 2945 kcal/kWh for FY 2007-08.

*Commission's analysis*

5.14 The 'Generation Tariff Regulations, 2004' specifies the station heat rate of 2500 kcal/kWh during the post-stabilization period of coal-based generation stations with capacity between 200 MW and 500 MW. The station heat rate proposed by the petitioner is very high. In the previous tariff order for FY 2007-08 also the Commission had approved a SHR of 2500 Kcal/Kwh.

5.15 The Commission is not in agreement with the submissions of the petitioner for approving a higher SHR for truing up of FY 2007-08. The Commission approves a SHR as per the 'Generation Tariff Regulations, 2004' at 2500 kcal/kWh for the two Units of Tenughat power station.

## Specific oil consumption

*Petitioner's submission*

5.16 The petitioner has submitted 1.96 ml/kWh as the actual specific oil consumption in FY 2007-08 for the two Units of Tenughat TPS.

*Commission's analysis*

5.17 The 'Generation Tariff Regulations, 2004' specify a maximum secondary fuel consumption of 2.0 ml/kWh and since the utility has proposed a specific oil consumption of less than the normative value, the Commission approves the same for FY 2007-08.

## Gross Calorific Value (GCV) of primary and secondary fuel

*Petitioner's submission*

5.18 The petitioner has submitted the actual GCV of 4274.31 Kcal/Kg .It has submitted the GCV of secondary fuel at 10000 kcal/kl.

*Commission's analysis*

5.19 The Commission has approved the figures submitted by the petitioner.

## Price of primary and secondary fuel

*Petitioner's submission*

5.20 The petitioner has submitted the price of coal at Rs. 1314.84 /MT.

*Commission's analysis*

5.21 The Commission has verified the coal process from the bills of coal and approves the price of coal at Rs. 1314.84 /MT.

## Transit Loss

*Petitioner's submission*

5.22 The petitioner has submitted the transit loss at 0.3%.

*Commission's analysis*

5.23 Since the petitioner has submitted the transit loss of 0.3%, which is in accordance with the 'Generation Tariff Regulations 2004', the Commission has also considered the same for the true up of FY 2007-08.

## Summary of Plant parameters & fuel cost determinants

5.24 The summary of Plant parameters and fuel cost determinants for the two Units of Tenughat plant of the Petitioner and trued-up by the Commission for FY 2007-08 is given below

**Table 18-Plant parameters & Fuel cost determinants (True up for FY 2007-08)**

| Parameters | Unit | Unit I & II | |
|---|---|---|---|
| | | Submitted by the Petitioner | True up by JSERC |
| Capacity | MW | 420 | 420 |
| Plant Load Factor | % | 48.78% | 48.78% |
| Auxiliary Consumption | % | 9.75% | 9.00% |
| Station Heat Rate | Kcal/Kwh | 2945 | 2500 |
| GCV of Coal | Kcal/Kg | 4274.31 | 4274.31 |
| GCV of oil | Kcal/Kg | 10000 | 10000 |
| Specific oil consumption | ml/Kwh | 1.96 | 1.96 |
| Coal consumption | MT | 1232041 | 1044630 |
| Oil consumption | Kl | 3510.46 | 3510.46 |
| Price of Coal | Rs/MT | 1314.84 | 1314.84 |
| Price of Oil | Rs/KL | 22390.23 | 22390.23 |
| Total Coal Cost | Rs. Cr | 161.99 | 137.35 |
| Total Oil cost | Rs. Cr | 7.86 | 7.86 |
| Net Fuel Cost | Rs. Cr | 169.85 | 145.21 |
| Energy Charges | Rs/Unit | **1.05** | **0.89** |

## Provisional true up for fixed cost determinants

5.25 The true up of depreciation has been taken from the annual accounts for FY 2007-08 submitted by the petitioner. The Interest on loan has been calculated as per the project cost structure now submitted by the petitioner.

5.26 The return on equity, O&M charges and interest on working capital figures have been considered as per the 'Generation Tariff Regulations, 2004'.

## Summary of Fixed Cost determinants and Generation Tariff

5.27 The table below shows the fixed cost determinants and Generation tariff for FY 2007-08 provisionally true up by the Commission as per the actual data and Provisional accounts.

**Table 19- Fixed cost determinants and Generation Tariff (Rs. Cr) (True-up for FY 2007-08)**

| Parameters | Units | Unit II | |
|---|---|---|---|
| | | Submitted by the Petitioner | Approved by JSERC |
| O&M charges | Rs. Cr | 60.5 | 61.07 |
| Depreciation | Rs. Cr | 44.17 | 44.17 |
| Interest on Loan | Rs. Cr | 86.66 | 83.06 |
| Return on Equity | Rs. Cr | 14.00 | 16.27 |
| Interest on Working Capital | Rs. Cr | 12.70 | 7.62 |
| Total Fixed cost | Rs. Cr | **217.60** | **212.19** |
| Non-Tariff Income | Rs. Cr | 12.46 | 12.46 |
| Net Fixed cost | Rs. Cr | **205.14** | **199.73** |
| Energy Cost | Rs. Cr | 169.85 | 145.21 |
| Total Cost | Rs. Cr | **374.99** | **344.95** |
| Existing Tariff ( FY 2007-08) | (Rs/Kwh) | 2.05 | 2.05 |
| Revenue at Existing Tariff* | Rs. Cr | 331.31 | 334.80 |
| Revenue (Gap)/Surplus | Rs. Cr | **(43.69)** | **(10.14)** |

5.28 The Commission approves the revenue gap of Rs. 10.14 Cr as per provisional true up for FY 2007-08.

# A6: PROVISIONAL TRUE UP OF FY 2008-09 AS PER PROVISIONAL ANNUAL ACCOUNTS OF THAT YEAR

6.1 As part of the tariff determination process, the Commission requisitioned the provisional accounts for FY 2008-09 from the petitioner.

6.2 The Commission scrutinized the provisional accounts submitted by the petitioner for FY 2008-09 and observed variations on the cost and operational parameters between the figures approved by the Commission while reviewing the petition for FY 2008-09 and the provisional accounts for that year.

6.3 Accordingly, the Commission decided to conduct the provisional truing up for FY 2008-09 based on the actual data from the provisional annual accounts and as per the 'Generation Tariff Regulations, 2004'.

6.4 The component-wise description of Commission's analysis on the same is given below.

## Plant Load Factor (PLF)

*Petitioner's submission*

6.5 The petitioner has submitted that the actual figures of PLF for FY 2008-09 at 60.43% for the two Units of the Tenughat Plant.

*Commission's analysis*

6.6 The Commission has approved the PLF of 60.43% for both the units but restates that the petitioner needs to take suitable measures to improve the PLF and availability by FY 2011-12, as per the norms of the Commission.

## Gross Generation

*Petitioner's submission*

6.7 The petitioner has submitted the actual gross generation on the basis of actual PLF of the two Units. The Gross generation has been calculated by the petitioner at 2223 MUs for the two Units.

*Commission's analysis*

6.8 The Commission approves the Gross Generation at 2223 MUs for the two Units of Tenughat TPS on the basis of the actual information made available to the Commission.

## Auxiliary Consumption

*Petitioner's submission*

6.9 The petitioner has submitted that the auxiliary consumption of 8.82% for FY 2008-09, for both the Units of the petitioner.

*Commission's analysis*

6.10 Based on the latest figures available, the Commission approves the auxiliary consumption of 8.82%.

## Net Generation

*Petitioner's submission*

6.11 The net generation has been submitted as 2027.24 MUs for both the Units.

*Commission's analysis*

6.12 The Commission approves the net generation at 2027.24 MUs for the two Units of Tenughat TPS, on the basis of the gross generation and auxiliary consumption approved by the Commission.

## Station Heat Rate (SHR)

*Petitioner's submission*

6.13 The petitioner has submitted 3075 kcal/kWh as the revised estimate of the SHR for the two units for FY 2008-09.

*Commission's analysis*

6.14 The Commission observes that the revised estimate of SHR consumption for FY 2008-09 is same as that submitted by the petitioner with the petition of FY 2008-09.

6.15 The 'Generation Tariff Regulations, 2004' specifies the SHR of 2500 kcal/kWh during the post-stabilization period of coal-based generation stations with capacity between 200 MW and 500 MW. The station heat rate proposed by the petitioner is very high. In the previous tariff order for FY 2007-08 also the Commission had approved a SHR of 2500 Kcal/Kwh.

6.16 The Commission is not in agreement with the submissions of the petitioner for approving a higher SHR for FY 2008-09. The Commission approves a SHR as per the 'Generation Tariff Regulations, 2004' at 2500 kcal/kWh for FY 2008-09 for the two Units of Tenughat power station.

## Specific oil consumption

*Petitioner's submission*

6.17 The petitioner has submitted 2.78 ml/kWh as the revised estimate of the specific oil consumption for both the Units of Tenughat.

*Commission's analysis*

6.18 The Commission observes that the revised estimate of specific oil consumption for FY 2008-09 is the same as that submitted by the petitioner with the petition of FY 2008-09.

6.19 The 'Generation Tariff Regulations, 2004' specify a maximum secondary fuel consumption of 2.0 ml/kWh and the Commission does not find any suitable justification to approve the specific oil consumption at a level higher than the norms. The Commission thereby approves a specific oil consumption of 2ml/Kwh for FY 2008-09.

## Gross Calorific Value (GCV) of primary and secondary fuel

*Petitioner's submission*

6.20 The petitioner has submitted a figure of 4300 Kcal/Kg .It has submitted the GCV of secondary fuel at 10000 kcal/kl.

*Commission's analysis*

6.21 The Commission has approved the figures submitted by the petitioner.

## Price of primary and secondary fuel

*Petitioner's submission*

6.22 The petitioner has submitted the price of coal at Rs. 1274.07 /MT.

*Commission's analysis*

6.23 The Commission has verified the coal process from the bills of coal and approves the price of coal at Rs. 1274.07/MT.

## Transit Loss

*Petitioner's submission*

6.24 The petitioner has not submitted any data regarding the transit loss of coal separately. However, as a part of additional information requisitioned by the Commission, the petitioner has submitted that it has made an agreement with the transporter that if the transit loss of coal exceeds the normative level of 0.30% , the petitioner would deduct the amount of such excess loss of coal from the bill of the transporter.

*Commission's analysis*

6.25 Since the petitioner has submitted the transit loss of 0.3% in the petition for FY 2008-09, the Commission has also considered the same for the revised estimate of FY 2008-09.

## Summary of Plant parameters & fuel cost determinants

6.26 The summary of Plant parameters and fuel cost determinants for the two Units of Tenughat plant of the Petitioner submitted by the petitioner and approved by the Commission for FY 2008-09 is given below

**Table 20-Plant parameters & Fuel cost determinants (True-up for FY 2008-09)**

| Parameters | Unit | Unit I & II | |
|---|---|---|---|
| | | Submitted by the Petitioner | Approved by JSERC |
| Capacity | MW | 420 | 420 |
| Plant Load Factor | % | 60.43% | 60.43% |
| Auxiliary Consumption | % | 8.82% | 8.82% |
| Station Heat Rate | Kcal/Kwh | 3075 | 2500 |
| GCV of Coal | Kcal/Kg | 4300 | 4300 |
| GCV of oil | Kcal/Kg | 10000 | 10000 |
| Specific oil consumption | ml/Kwh | 2.78 | 2.00 |
| Coal consumption | MT | 1576051 | 1282684 |
| Oil consumption | Kl | 6178.7 | 4446.7 |
| Price of Coal | Rs/MT | 1273.31 | 1273.31 |
| Price of Oil | Rs/KL | 39270 | 39270 |
| Total Coal Cost | Rs. Cr | 200.68 | 163.33 |
| Total Oil cost | Rs. Cr | 24.26 | 17.46 |
| Net Fuel Cost | Rs. Cr | 224.94 | 180.79 |
| Energy Charges | Rs/Unit | **1.11** | **0.89** |

## Provisional True up for fixed cost determinants

6.27 The figure for Depreciation has been taken from the Annual accounts for FY 2008-09 submitted by the petitioner. The Interest on loan has been calculated as per the project cost structure now submitted by the petitioner.

6.28 The return on equity, O&M and interest on working capital figures have been considered as per the project cost structure approved by the Commission.

## Summary of Fixed Cost determinants and Generation Tariff

6.29 The table below shows the revised fixed cost determinants and Generation tariff for FY 2008-09, in terms of the petitioner's latest submission and the Commission's approved costs.

**Table 21-Fixed cost determinants and Generation Tariff (True- up for FY 2008-09)**

| Parameters | Units | Unit II | |
|---|---|---|---|
| | | Submitted by the Petitioner | Approved by JSERC |
| O&M charges | Rs. Cr | 90.08 | 64.76 |
| Depreciation | Rs. Cr | 45.24 | 45.24 |
| Interest on Loan | Rs. Cr | 86.71 | 83.06 |
| Return on Equity | Rs. Cr | 19.32 | 18.66 |
| Interest on Working Capital | Rs. Cr | 15.70 | 12.73 |
| Total Fixed cost | Rs. Cr | 257.05 | 224.45 |
| Non-Tariff Income | Rs. Cr | 15.43 | 15.43 |
| Net Fixed cost | Rs. Cr | 241.62 | 209.02 |
| Energy Cost | Rs. Cr | 224.94 | 180.79 |
| Total Cost | **Rs. Cr** | **466.56** | **389.81** |
| Existing Tariff ( FY 2007-08) | (Rs/Kwh) | 2.05 | 2.05 |
| Revenue at Existing Tariff | Rs. Cr | **415.58** | **415.58** |
| Revenue (Gap)/Surplus | **Rs. Cr** | **(50.98)** | **25.78** |

6.30 The Commission approves the revenue surplus of Rs. 25.78 Cr. as per provisional true up for FY 2008-09.

# A7: COMMISSION'S ANALYSIS OF THE PETITION FOR FY 2009-10

7.1 The Commission has scrutinized the petition filed by the petitioner for FY 2009-10. The Component-wise details of the petitioner's submission and the Commission's analysis and approvals applicable for FY 2009-10 have been discussed in this section.

## Basis of Fuel Cost & Fixed cost Determination

*Petitioner's submission*

7.2 The petitioner has submitted its proposal for determination of Energy and fixed charges as per the 'Generation Tariff Regulations, 2004' issued by JSERC.

*Commission's analysis*

7.3 The Commission has scrutinized the petition filed by the Petitioner for FY 2008-09 and has determined the generation tariff for FY 2009-10 in accordance with the 'Generation Tariff Regulations, 2004'.

## Plant Load Factor (PLF)

*Petitioner's submission*

7.4 The Petitioner has projected a PLF of 67.68% for both the Units. The petitioner has stated that the reason for this increase is largely due to availability of Unit I and better performance of Unit II. The projected PLF is lower than the normative value because Unit II is expected to be available only for 9 months.

7.5 During the public hearing process, the petitioner submitted the actual figures of generation for the first 10 months of FY 2009-10 and estimated generation for the remaining 2 months, on the basis of which the PLF has been estimated at 56.75%. According to the petitioner, the reduction in PLF is caused due to break down in Unit II.

*Commission's analysis*

7.6 During the Determination of tariff for FY 2007-08, the petitioner had submitted the PLF of 48% caused due to the break down of Unit I, in May 2007. The Commission had directed the petitioner to take suitable measures to put the unit back in to operation. The Petitioner has been able to restore the unit back in to operation and improved the PLF to 60.43% in FY 2008-09.

7.7 During FY 2009-10, the petitioner initially projected a further improvement in PLF at 67.68%. However, at the time of submission of actual generation data for FY 2009-10 for the first 10 months, the petitioner submitted that now its Unit-II has broke down because of which the estimated generation during FY 2009-10 will correspond to PLF of 56.75% during FY 2009-10.

7.8 The Commission has already given directions to the Petitioner to take adequate and sustainable measures to further improve the PLF & availability and get it to the benchmark level of 80% by the end of FY 2011-12. The Commission will not consider PLF & availability, lower than the normative value as prescribed in the Generation Tariff Regulations 2004 and amendments, if any.

7.9 In the meantime, the Commission has decided to approve the PLF as per the actual figures made available by the petitioner. Accordingly, the Commission considers the PLF of 56.75% for FY2009-10.

## Gross Generation

*Petitioner's submission*

7.10 The petitioner has initially submitted a gross generation of 2490 MUs as per the PLF of 67.68% for both the Units for FY 2009-10.

*Commission's analysis*

7.11 As detailed above, the Commission approves the gross generation at 2088 MU, based on the approved PLF of 56.75% .

## Auxiliary Consumption

*Petitioner's submission*

7.12 The petitioner has submitted that auxiliary consumption is specific to a particular power station and depends on its configuration, age and related technical parameters. The petitioner has proposed an auxiliary consumption of 9% for FY 2009-10

*Commission's analysis*

7.13 Since the auxiliary consumption specified in the petition for Unit I and Unit II is same as that specified in the 'Generation Tariff Regulations, 2004' , the Commission approves the auxiliary consumption of 9% for both the Units of the petitioner.

## Net Generation

*Petitioner's submission*

7.14 The petitioner has projected net generation for FY 2009-10 to be 2265.98 MUs for the two Units of Tenughat TPS after taking into account its projections for gross generation and auxiliary consumption.

*Commission's analysis*

7.15 The Commission has computed and approves the net generation at 1900.03 MUs for the two Units of Tenughat TPS.

## Station Heat Rate (SHR)

*Petitioner's submission*

7.16 The SHR of the two Units in FY 2009-10 has been projected by the petitioner to be 3100 kcal/kWh.

*Commission's analysis*

7.17 The 'Generation Tariff Regulations, 2004' specifies the station heat rate of 2500 kcal/kWh during the post-stabilization period of coal-based generation stations with capacity between 200 MW and 500 MW. The station heat rate proposed by the petitioner is very high. In the previous tariff order for FY 2007-08 also the Commission had approved a SHR at 2500 Kcal/Kwh.

7.18 The Commission is not in agreement with the submissions of the petitioner for approving a higher SHR for FY 2009-10. The Commission approves a SHR as per the 'Generation Tariff Regulations, 2004' at 2500 kcal/kWh for FY 2009-10 for the two Units of Tenughat power station.

## Specific oil consumption

*Petitioner's submission*

7.19 The specific oil consumption for FY 2009-10 is proposed by the petitioner to be 2.50 ml/kWh for both the Units.

*Commission's analysis*

7.20 The Specific oil consumption gives the amount of secondary fuel (in ml) consumed in the process of energy generation, per unit 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 'Generation Tariff Regulations, 2004' specify a maximum secondary fuel consumption of 2.0 ml/kWh and the Commission does not find any suitable justification to approve the specific oil consumption at a level higher than the norms. The Commission thereby approves a specific oil consumption of 2ml/Kwh for FY 2009-10.

## Gross Calorific Value (GCV) of primary and secondary fuel

*Petitioner's submission*

7.22 The petitioner has submitted the Gross Calorific Value of Coal as 4300 Kcal/Kg and GCV of secondary fuel as 10,000 kcal/kl.

*Commission's analysis*

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

7.24 Since, the actual GCV of consumed coal for FY 2009-10 is not available in the petition; the Commission allows the petitioner's submission of GCV as 4300kcal/kg subject to the condition that the same would be trued-up once the actual GCV of coal used in FY 2009-10 is made available to the Commission.

7.25 The Commission approves the proposed GCV of secondary fuel of 10,000 kcal/kl.

## Price of primary and secondary fuel

*Petitioner's submission*

7.26 The petitioner has taken the price of CCL coal to be Rs. 1300/MT .

7.27 The price of secondary fuel is taken as Rs. 39045.20/kilolitre.

*Commission's analysis*

7.28 Cost of fuel price is an uncontrollable factor for the petitioner and thus the Commission approves the rates of coal and secondary fuel proposed by the petitioner, subject to a subsequent true-up when the actual prices of coal and secondary oil for FY 2009-10 would be available.

## Transit Loss

*Petitioner's submission*

7.29 The petitioner has submitted the Transit loss to be 0.3% of the total coal transported in FY 2009-10.

*Commission's analysis*

7.30 The normative transit and handling losses as a percentage of quantity of coal dispatched by the coal supply company as prescribed by JSERC is 0.3% for pithead generating stations. The Commission approves the figure given by the petitioner as 0.3% for FY 2009-10

## Summary of Plant parameters & fuel cost determinants

7.31 The summary of Plant parameters and fuel cost determinants for the two Units of Tenughat plant of the petitioner and approved by the Commission for FY 2009-10 is given below

**Table 22- Plant parameters & Fuel cost determinants (FY 2009-10)**

| Parameters | Unit | Unit I&II | |
|---|---|---|---|
| | | Submitted by the Petitioner | Approved by JSERC |
| Capacity | MW | 420 | 420 |
| Plant Load Factor | % | 67.68% | 56.75% |
| Auxiliary Consumption | % | 9% | 9% |
| Station Heat Rate | Kcal/Kwh | 3100 | 2500 |
| GCV of Coal | Kcal/Kg | 4300 | 4300 |
| GCV of oil | Kcal/Kg | 10,000 | 10,000 |
| Specific oil consumption | ml/Kwh | 2.50 | 2.0 |
| Coal consumption (including transit loss) | MT | 1798238 | 1207834 |
| Oil consumption | Kl | 6225.21 | 4175.89 |
| Price of Coal | Rs/MT | 1300 | 1300 |
| Price of Oil | Rs/KL | 39045.2 | 39045.2 |
| Total Coal Cost | Rs. Cr | 233.77 | 157.02 |
| Total Oil cost | Rs. Cr | 24.31 | 16.30 |
| Net Fuel Cost | **Rs. Cr** | **258.08** | **173.32** |
| Energy Charges | **Rs/Unit** | **1.139** | **0.91** |

## Project Cost structure

*Petitioner's submission*

7.32 As per the directions of the Commission to submit additional information, the petitioner has submitted its annual accounts from FY 1996-97 onwards.

7.33 The petitioner also submitted vide its additional data, that it intends to capitalise the portion of the capital maintenance expenditure during FY 2009-10 incurred by it during the previous years, and which was inadvertently booked under the revenue expenditure amounting to Rs. 41.00 Cr. The petitioner further requested to consider this additional capitalisation as being funded from its internal resources.

*Commission's analysis*

7.34 On the perusal of annual accounts as submitted by the petitioner, the initial project cost of both the Units is derived at as Rs.1304.91 Cr. and taking into consideration the additional capitalisation during the intervening period the project cost during FY2009-10 is presented in the table given below:

**Table 23- Project cost structure for FY 2009-10**

| Item | Amount (Rs. Cr) |
|---|---|
| Project cost at start of 2009-10 | 1351.90 |
| Additional capitalization in 2009-10 | 43.47 |
| Total Project Cost | 1395.37 |

7.35 Additional capitalisation of Rs.43.47 Cr. includes an amount of Rs.2.47 Cr., which is as of now considered as a part of equity. It will be scrutinised while truing up the FY 2009-10 in subsequent Tariff Order.

## Operation & Maintenance (O&M) Expenses

*Petitioner's submission*

7.36 The petitioner has projected Rs 124.09 Cr as O&M expense for FY 2009-10. The petitioner states that the maintenance expenditure has increased substantially due to the age of the plant and numerous outages.

7.37 The table below provides the details of O&M expenses incurred by the petitioner in the FY 2009-10:

**Table 24- O&M Expenses (FY 2009-10)**

| Particulars | Cost (Rs. Cr) |
|---|---|
| Employee Cost | 28.20 |
| R&M Expenses | 18.25 |
| A&G Expenses | 16.09 |
| O&M incl. Capital Expenditure | 61.55 |
| Total | **124.10** |

*Commission's analysis*

7.38 The Commission observes that the O&M expenses claimed by the petitioner are very high. The Commission has computed the O&M expenses as per the 'Generation Tariff Regulations, 2004' for plants set up before 01.04.2004, which states that the O&M should be 2.50% of the capital cost with an escalation @ 6% p.a.

7.39 The initial capital cost of both the units is as Rs.1304.91Cr. and estimated additional capitalisation of Rs. 90.46 Cr. upto 31.3.2010.

7.40 The Commission also approves the additional employee expenses on account of sixth pay Commission impact at Rs. 6.50 Cr, as proposed by the petitioner.

7.41 The total O&M charges approved by the Commission amounts to Rs. 75.68 Cr.

## Depreciation

*Petitioner's submission*

7.42 The petitioner has calculated the depreciation on its fixed assets based on historical capital cost of the asset. Depreciation is calculated annually as per straight line method as per the rates of depreciation prescribed in the schedule attached at Appendix-II of the JSERC (Terms and conditions for the determination of Thermal Generation Tariff) Regulations, 2004, and the depreciation costs is calculated as follows:

**Table 25-Total Depreciation proposed by petitioner FY 2009-10**

| Particulars | Amount (Rs. Cr) |
|---|---|
| Depreciation for Plant | 45.17 |
| Depreciation for HO | 0.12 |
| Depreciation for additional capitalization | 0.26 |
| Total | **45.55** |

*Commission's analysis*

7.43 Depreciation is calculated on the historical cost of the asset at 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.

7.44 The Commission has computed and approved the depreciation charges of Rs. 46.34 Cr for the two Units of Tenughat TPC for FY 2009-10.

**Table 26-Total Depreciation approved by Commission FY 2009-10**

| Particulars | Amount (Rs. Cr) |
|---|---|
| Depreciation for Plant | 45.17 |
| Depreciation for HO | 0.12 |
| Depreciation for additional capitalization | 1.06 |
| Total | **46.34** |

## Interest on Loan

*Petitioner's submission*

7.45 The petitioner has submitted that the loan outstanding as on 31.03.2009 is Rs. 638.90 Cr and the interest on outstanding loan in Rs. 83.06 Cr. The petitioner stated that it could not meet the repayment obligation due to insufficient funds on account of non-payment of electricity charges by the Jharkhand State Electricity Board (JSEB).

7.46 The table below summarises the outstanding loan and interest component for FY 2009-10:

**Table 27- Loan outstanding and interest charges (petition-FY 2009-10)**

| Name of the Institution | Balance at the beginning of the year | Loan received during the year | Repayment during the year | Balance outstanding at the end of the year | Rate of Interest (%) | Interest for the year |
|---|---|---|---|---|---|---|
| Bihar Govt. Loan | 608.90 | - | - | 608.90 | 13 | 79.16 |
| Jharkhand Govt. Loan | 30.00 | - | - | 30.00 | 13 | 3.90 |
| Normative Debt on account of additional capitalisation | 0.74 | | | 0.74 | 13 | 0.09 |
| **Total** | **639.64** | | | **639.64** | | **83.15** |

*Commission's analysis*

7.47 The Commission has calculated the annual interest of Rs. 83.06 Cr. The details are summarised as under:

**Table 28- Interest on Loan for FY 2009-10**

| Name of the Institution | Balance at the beginning of the year | Loan received during the year | Repayment during the year | Balance outstanding at the end of the year | Rate of Interest (%) | Interest for the year |
|---|---|---|---|---|---|---|
| Bihar Govt. Loan | 608.90 | - | - | 608.90 | 13 | 79.16 |
| Jharkhand Govt. Loan | 30.00 | - | - | 30.00 | 13 | 3.90 |
| **Total** | **638.90** | | | **638.90** | | **83.06** |

## Interest on Working Capital

*Petitioner's submission*

7.48 The interest on working capital as calculated by the petitioner for FY 2009-10 is summarized in the table below:

**Table 29- Interest on Working capital (petition-FY 2008-09)**

| Particulars | Proposed for 2008-09 |
|---|---|
| Cost of Coal for 1½ months | 29.22 |
| Secondary Fuel Oil for 1 month | 2.03 |
| Operation & Maintenance expenses for 1 month | 10.34 |
| Maintenance expenses @ 1% of Plant & Equipment | 11.72 |
| Receivables equivalent to 2 months | 91.06 |
| Total Working Capital | 144.37 |
| Interest on Working Capital @ 12.50% | 18.05 |

7.49 The petitioner has considered the interest on working capital as 12.50% and requests the Commission to approve Rs. 18.05 as the interest on working capital for both the Units for FY 2009-10.

*Commission's analysis*

7.50 The rate of interest on working capital is taken 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 determined.

7.51 The Commission has calculated Working capital on the following basis:

**Table 30- Interest on Working Capital as approved by the Commission for FY 2009-10**

| Particulars | Proposed for 2009-10 Rs. Cr |
|---|---|
| Cost of Coal for 1½ month | 19.63 |
| Secondary Fuel Oil for 1 month | 1.36 |
| Operation & Maintenance expenses for 1 month | 6.31 |
| Maintenance expenses @ 1% of Plant & Equipment | 11.72 |
| Receivables equivalent to 2 months of fixed and variable Charges | 66.28 |
| Total Working Capital | 105.29 |
| Interest on Working Capital @ 12.25% | 12.90 |

7.52 Accordingly, the Commission has computed and approved the interest on working capital as Rs. 12.90 Cr. for the two Units of Tenughat TPS for FY 2009-10.

## Return on Equity (RoE)

*Petitioner's submission*

7.53 The details of the Return on Equity calculated by the petitioner is provided in the table below:

**Table 31- Return on Equity (petition-FY 2009-10)**

| Particulars | Proposed for 2009-10 (Rs. Cr) |
|---|---|
| Equity at the end of 2008-09 | 138.036 |
| Additional Equity | 0.741 |
| Total Equity | 138.77 |
| Return on Equity at 14% | 19.43 |

7.54 Accordingly, the petitioner has requested the Commission to approve the Return on Equity interest of Rs. 19.43 Cr for both the units for FY 2009-10.

*Commission's analysis*

7.55 The Commission has considered the opening equity of Rs.134.12 Cr., as detailed above in this order. The Commission also considered the additional capitalisation of Rs.43.47Cr. during FY 2009-10 through equity infusion, which is taken on pro-rata basis assuming mid-year as reference point.

**Table 32- Return on Equity approved by Commission for FY 2009-10**

| Particulars | Proposed for 2009-10 Rs. Cr |
|---|---|
| Equity at the end of 2008-09 | 134.12 |
| Equity infusion during FY 2009-10 | 43.47 |
| Total Equity | 177.59 |
| Return on Equity at 14% | 21.82 |

7.56 As per the Commission's own calculation of the RoE in accordance with the Regulations, the Commission approves Rs.21.82 Cr. as the RoE for both the Units for FY 2009-10.

## Income Tax

*Petitioner's submission*

7.57 The petitioner has stated that there is no assessable income for Income tax purpose and hence no tax on income is proposed for the year 2009-10.

*Commission's analysis*

7.58 The Commission agrees with the petitioner.

## Non tariff Income

*Petitioner's submission*

7.59 The petitioner has estimated non-tariff income of Rs. 2 Cr for the FY 2009-10.

*Commission's analysis*

7.60 The Commission has considered the non-tariff income for FY 2009-10 at the same level as FY 2008-09 which is Rs.15.93 Cr. This will be trued-up as and when the actual figures are available.

## Summary of Fixed Cost determinants and Generation Tariff

7.61 The table below shows the fixed cost determinants and Generation tariff for FY 2009-10, in terms of the petitioner's submission and the Commission's approved costs.

**Table 33- Fixed cost determinants and Generation Tariff (Rs. Cr) (FY 2009-10)**

| Parameters | Units | Unit I & II | |
|---|---|---|---|
| | | **Submitted by the Petitioner** | **Approved by JSERC** |
| O&M charges | Rs. Cr | 124.10 | 75.68 |
| Depreciation | Rs. Cr | 45.55 | 46.34 |
| Interest on Loan | Rs. Cr | 83.15 | 83.06 |
| Return on Equity | Rs. Cr | 19.43 | 21.82 |
| Interest on Working Capital | Rs. Cr | 18.05 | 12.90 |
| Total Fixed cost | Rs. Cr | 290.28 | 239.80 |
| Energy Cost | Rs. Cr | 258.08 | 173.32 |
| Total Expenses | Rs. Cr | 548.36 | 413.12 |
| Non-Tariff Income | Rs. Cr | 2.00 | 15.43 |
| Net total expenses | Rs. Cr | 546.36 | 397.70 |
| Existing Tariff ( FY 2007-08) | (Rs/Kwh) | 2.05 | 2.05 |
| Revenue at Existing Tariff | Rs. Cr | **464.52** | **389.51** |
| Revenue (Gap)/Surplus | **Rs. Cr** | **(81.83)** | **(8.19)** |

7.62 The Commission approves the revenue gap of Rs.8.19 Cr. for FY 2009-10, as per the detailed analysis of the tariff petition submitted by the petitioner for next year.

# A8: APPROVED TARIFF FOR TVNL FOR FY 2009-10

8.1 The Commission after the detailed analysis and provisional truing up for FY 2007-08 & FY 2008-09 based on the provisional accounts of these years as well as the analysis of FY 2009-10 on the basis of the petition filed by the petitioner for FY 2009-10, has approved the tariff of Rs. 2.053/Kwh for FY 2009-10.

8.2 The summary of treatment of revenue gap/surplus and tariff approved by the Commission is given in the table below

**Table 34-Treatment of Revenue Gap/Surplus and Approved Generation Tarff for FY 2009-10**

| Particulars | Units | Approved by JSERC |
|---|---|---|
| **Annual Revenue Requirement for FY 2009-10** | **Rs. Cr** | **397.70** |
| Revenue (Gap)/Surplus for FY 2007-08 (as per provisional true up of FY 2007-08) | Rs. Cr | (10.14) |
| Revenue (Gap)/Surplus for FY 2008-09 (as per provisional true up of FY 2008-09) | Rs. Cr | 25.78 |
| Revenue (Gap)/Surplus for FY 2009-10 (as per analysis of petition for FY 2009-10) | Rs. Cr | (8.19) |
| **Cumulative Revenue (Gap)/Surplus** | **Rs. Cr** | **7.45** |
| **Net ARR requirement ( up to FY 2009-10)** | **Rs. Cr** | **390.25** |
| **Net Generation** | **MU** | **1900.03** |
| **Approved Tariff for FY 2009-10** | **Rs/KwH** | **2.053** |

8.3 The above approved tariff shall be applicable for the year FY 2009-10 and will be applicable till 31st March 2010 or on issue of the subsequent Tariff Order, as decided by the Commission.

# A9: STATUS OF EARLIER DIRECTIVES

| Directives as per TO 2007-08 | Status | Views of the Commission |
|---|---|---|
| **Removal of Constraints** | TVNL has taken up the work of charging TTPS Biharshariff line at 400 kV which is presently operating at 200 kV. It has also awarded the work order for feasibility survey and preparation of DPR for construction of 400 kv D/c transmission line from TTPS to Ranchi. TVNL has also stated that the frequency of Boiler tube Leakage has come down. | The petitioner has partially complied with the directive. The Commission directs the petitioner to complete the feasibility survey and DPR preparation work and submit the action plan for implementation within six months of this order. |
| **Energy audit** | The work order for energy audit of Unit-II has been awarded to M/s national productivity council | The petitioner has partially complied with the directive. The Commission directs the petitioner to conduct the energy audit and submit the report within 6 months of the issue of this order. |
| **Completion of MGR** | Expected to be operational by June 2010 | The petitioner in the last tariff order mentioned that the work of MGR will be completed by the end of March 2008. There has been a continuous delay in the construction of MGR system due to which TVNL is paying high transportation cost. The cost of transporting coal will come down once the MGR system becomes operational. The Commission directs the petitioner to ensure the work is completed by June 2010 and submit a completion report to the Commission by July 2010. Any further delay would invite penal action from the Commission. |
| **Maintenance Plan** | TVNL has implemented a well documented spares inventory management system and maintenance plan for which experts | The petitioner has complied with the directive. |

| Directives as per TO 2007-08 | Status | Views of the Commission |
|---|---|---|
| | from NTPC were deployed on chargeable basis. TVNL has already invited tender for supply & Installation of equipment for workshop. | |
| **Spare codifications and computerized maintenance management system** | The implementation of ERP-SAP is under process and tender for which will be invited shortly. | The petitioner has partially complied with the directive. The Commission directs the petitioner to invite tender and award the contract to the successful bidder within 3 months of this order and subsequently submit an implementation plan within 6 months of the issue of this order. |
| **Water Chemistry** | For maintaining DM plant properly, procurement of advanced instruments is under process | The Commission directs the petitioner to comply with the directive within 6 months of the issue of this order and submit monthly information as directed in the Tariff order for FY 2007-08. |
| **Specific oil consumption** | Necessary efforts have been made to reduce oil consumption up to normative levels | The petitioner has partially complied with the directive. The Commission directs the petitioner to reduce the specific oil consumption to the normative levels specified in the Generation tariff Regulations 2004 and its amendments by the end of FY 2011-12. |
| **Ash utilization & management** | TVNL has started action for setting up dry ash collection system to ensure effective ash utilization. M/s Mecon is preparing the DPR and tender for EPC will be floated shortly. | The petitioner has partially complied with the directive. The Commission directs the petitioner to fully comply with the directive within 6 months of the issue of this order. |

| Directives as per TO 2007-08 | Status | Views of the Commission |
|---|---|---|
| **Recovery of dues from JSEB** | For timely payment of current bill Letter of Credit amounting Rs.25.00 Cr has been opened by JSEB. For recovery of dues, the petitioner has been pursuing regularly and sincerely with JSEB, as well as with GoJ. JSERC is also requested to help TVNL in this regard. | The petitioner has partially complied with the directive. The Commission shall also taken up the matter at appropriate level. |
| **Revision of PPA** | TVNL has requested JSEB several times for revision of PPA. Existing PPA is going to expire by 1st Aug'2010.Action has been started to frame out draft of new PPA inculcating the directions of Commission. | The petitioner has partially complied with the directive. The Commission expects the Petitioner to get the new PPA ratified from the Commission post August 2010. |
| **Break down of Unit** | The unit was revived in June 2008 after managerial capacity was filed and action was taken. | The petitioner has complied with the directive. However, the PLF is still around 60% only. The Commission expects the petitioner to increase the PLF to the normative levels specified in the Generation tariff Regulations 2004 and its amendments by the end of FY 2011-12. |
| **Repayment of Govt. loans** | TVNL has requested JSEB, so many times, to liquidate its dues so that it can repay the outstanding loan of the govt. | The petitioner has not complied with the directive despite that every year the Commission is allowing certain amount by way of depreciation charge for repayment of loan. The petitioner is required to submit the utilization of amount allowed by way of depreciation and ensure the repayment of loan is done. In future, the Commission will allow depreciation only to the extent of repayment of loans by the petitioner. |

# A10: NEW DIRECTIVES

## Improvement in performance of Operational parameters

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

## Issues in accounting treatment of expenses

10.2 The Commission has observed from the scrutiny of the petitions for FY 2008-09 & FY 2009-10 that the accounting treatment of various revenue and capital expenditure items is not in accordance standards and generally accepted accounting policies. The Commission directs the petitioner to henceforth prepare its accounts as per the applicable accounting standards.

10.3 The Commission also feels that the petitioner should arrange training for its accounting personnel so as to update them with the prevalent accounting standards and policies.

## Loan restructuring

10.4 The Commission observes that the interest on long term loans paid by the petitioner is very high for both the Units of the petitioner. It is pertinent to mention that many funding agencies are offering lower interest rates in the market as compared to the interest on loan paid by the petitioner. The Commission directs the petitioner to ascertain the interest rates of other Banks and conduct a cost benefit analysis for restructuring of its outstanding loans. The Commission directs the petitioner to submit a report in this regard within three months of the issue of this order.

10.5 The petitioner has informed that it has approached GoJ for conversion of loan from Bihar Government into equity. The Commission directs the petitioner to pursue its case with GoJ for conversion and fulfil all the requirement of GoJ in this regard.

## Adjustment of Bills & payments/receipt as per revised cost of power sold to JSEB

10.6 The Commission directs the petitioner to reconcile the payment due/receipts with JSEB, in lieu of the revised Generation Tariff for power sold to JSEB, as determined by the Commission in this order, within three months of the issue of this order. The Generation Company is required to generate a supplementary bill for the reconciled billed amount and submit the same to JSEB.

### Investment in Fixed Deposits

10.7 It is observed from the accounts of the petitioner that it has invested a large amount of money in fixed deposits. On one hand, the petitioner has availed funds at the high interest rate of 13% and on the other hand, it is getting a much lower interest on amount invested in fixed deposits. The petitioner is directed to explain why it is holding such a large amount in deposits and not repaying the loans to its lenders and is also directed to furnish the details of the deposits with the various banks. The directive is to be complied within 3 months of the issue of this order.

**Break-up of Repair works**

10.8 In its earlier tariff order for FY2007-08, 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.

## Data adequacy in next Tariff petition and timelines

10.9 The Commission directs TVNL to come up with the next tariff petition for FY 2010-11 removing the various data deficiencies highlighted throughout the tariff order along with the latest actual figures of FY 2009-10.

10.10 The Commission also directs the generation company to file the next tariff petition for FY 2010-11 by 30$^{th}$ April 2010 and also ensure that submission of subsequent ARR & tariff filing for the ensuing years is done by 1$^{st}$ November every year prior to the tariff period.

**This Order is signed and issued by the Jharkhand State Electricity Regulatory Commission on this the 5th day of March, 2010 at Ranchi.**

Sd/-
(MUKHTIAR SINGH)
CHAIRPERSON