

JHARKHAND STATE ELECTRICITY BOARD



PETITION FOR FILING OF TRUE-UP FOR FY 2011-12
AND
REVIEW OF OPERATIONAL PARAMETERS FOR FY 2012-13
FOR
GENERATION FUNCTION

Submitted to



JHARKHAND STATE ELECTRICITY REGULATORY COMMISSION,
Ranchi

Submitted By

**State Transmission Utility and Licensee
Jharkhand State Electricity Board
Dhurwa, HEC, Ranchi**



BEFORE THE JHARKHAND STATE ELECTRICITY REGULATORY COMMISSION, RANCHI

Filing No.....

Case No.....

IN THE MATTER OF: Filing of the Petition for True-up for FY 2011-12 and Review of operational performance for FY 2012-13 for JSEB under JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010 issued by the Honourable Jharkhand State Electricity Regulatory Commission (JSERC), hereinafter referred to as Honourable Commission.

AND

IN THE MATTER OF: JHARKHAND STATE ELECTRICITY BOARD (hereinafter referred to as "JSEB" or "THE BOARD" which shall mean for the purpose of this petition the "Licensee"), having its registered office at DHURWA, HEC, RANCHI

The Petitioner respectfully submits as under: -

1. Jharkhand State Electricity Board (hereinafter referred to as the "Petitioner" or "JSEB" or "Board" was constituted on March 10, 2001 under Section 5 of the Electricity (Supply) Act, 1948 as a result of the bifurcation from the erstwhile State of Bihar. Before that, the Bihar State Electricity Board (BSEB) was the predominant entity entrusted with the task of generating, transmitting and supplying power in the State. The Board has been engaged in electricity generation, transmission, distribution and related activities in the state of Jharkhand. Presently, the Board is functioning as State Transmission Utility (STU) and a Distribution Licensee.
 2. Pursuant to the enactment of the Electricity Act, 2003, JSEB is required to submit its Aggregate Revenue Requirement (ARR) for control period and Tariff Petitions as per procedures outlined in section 61, 62 and 64, of Electricity Act 2003, and the governing Regulations thereof.
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3. The present petition is filed with the Hon'ble Commission for truing-up of Aggregate Revenue Requirement (ARR) for the FY 2011-12 and Review of the operational performance for FY 2012-13 as per the Electricity Act, 2003, as per the provisions of the Regulations issued by the Hon'ble Jharkhand State Electricity Regulatory Commission (JSERC) (Terms and Conditions for Generation Tariff) Regulations, 2010, for the area under its operation.
4. JSEB along with this petition is submitting the regulatory formats with data & information to an extent applicable and would make available any further information/ additional data required by the Hon'ble Commission during the course of MYT & tariff determination process.

Prayers to the Commission:

The petitioner respectfully prays that the Hon'ble Commission may:

- Examine the proposal submitted by the petitioner in the enclosed petition for justified dispensation.
 - Pass suitable orders with respect to the ARR for PTPS for FY 2011-12 at Rs. **238.65 Crs** and ARR for SHPS for FY 2011-12 at Rs. **22.27 Crs** along with the relevant financial parameters in the petition by JSEB.
 - Be permitted to propose suitable changes to the respective ARR, prior to the final approval by the Hon'ble Commission. JSEB believes that such an approach would go a long way towards providing a fair treatment to all the stakeholders and may eliminate the need for a review or clarification.
 - Condone the delay in filing of the True-up Petition, if any and requests Hon'ble Commission to accept the petition for processing;
 - Condone any inadvertent omissions/errors/shortcomings and permit JSEB to add/change/modify/alter this filing and make further submissions as may be required at a future date.
 - Pass such orders, as the Hon'ble Commission may deem fit and appropriate keeping in view the facts and circumstances of the case, grant relief in the operational norms related to Plant Load Factor, Station Heat Rate, Auxiliary Consumption, Specific oil consumption for PTPS
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Jharkhand State Electricity Board
Petitioner

Ranchi

Dated: _____ 2013





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Chapter 1. Introduction

1.1 Background

1.1.1 Jharkhand State Electricity Board (hereinafter referred to as the “Petitioner” or “JSEB” or “Board” was constituted on March 10, 2001 under Section 5 of the Electricity (Supply) Act, 1948 as a result of the bifurcation from the erstwhile State of Bihar. Before that, the Bihar State Electricity Board (BSEB) was the predominant entity entrusted with the task of generating, transmitting and supplying power in the State. The Board has been engaged in electricity generation, transmission, distribution and related activities in the state of Jharkhand. Presently, the Board is functioning as State Transmission Utility (STU) and a Distribution Licensee.

1.1.2 Apart from the distribution and transmission functions, the Board also owns two power plants; Patratu Thermal Power Station (PTPS) having a capacity of 840 MW (de-rated capacity of 640 MW) and Sikidiri Hydel Power Station (SHPS) having a capacity of 130 MW. This petition is being submitted by the Board for approval of Annual Revenue Requirement for Generation function of the Board consisting of Patratu Thermal Power Station (PTPS) and Sikidiri Hydel Power Station (SHPS).

1.2 MYT Order FY12-13 to FY15-16

1.2.1 The Hon’ble Commission in 2010 had issued JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010 (hereinafter referred as JSERC Tariff Regulations 2010) which are applicable for Transition Period (FY 2011-12) and Control Period (FY 2012-13 to FY 2015-16).

1.2.2 JSEB filed its MYT petition in February 2012 for approval of the Annual Revenue Requirement (ARR) for the control period (FY 2012-13 to FY 2015-16). The Hon’ble Commission had issued a Tariff Order on the same in August 2012, approving the Truing up for FY 2010-11, APR of FY 2011-12 and ARR of (FY 2012-13 to FY 2015-16).



1.3 Present Petition

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

1.3.2 The sub-clause (2) of Clause 16 under JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010 require

“generating company, to make an application for True-up for the transition period (FY 2011-12) and Performance Review of (FY 2012-13) for getting the same approved by the Honourable Commission.”

1.3.3 In compliance to the above mentioned provisions, the petitioner herewith submits the ARR for FY 2011-12 based on provisional accounts and the actual operational performance for 6 months for FY 2012-13 (Apr 12- Sep 12) based on the actual generation data under the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010.



Chapter 2. Overall approach for present filing

2.1 Present Approach:

2.1.1 The Hon'ble Commission on Oct 27th 2010 had notified the JSERC Generation Tariff Regulations 2010 which are also applicable for transition period from 1st April 2011 to 31st March 2012 for elements of ARR such as Plant Load Factor, Auxiliary consumption, Transit loss, Station Heat Rate, RoE and Interest rate etc.

2.1.2 In line with the same, JSEB is filing its ARR and Tariff Petition for consideration of the Hon'ble Commission in the formats laid down for providing information relating to past, current and future performance. The key aspects of the approach to the filing are discussed below:

2.2 Data/Information for ARR

2.2.1 This petition contains the truing-up of the ARR of FY 2011-12, figures of which are based upon the provisional annual accounts. Further, the petition contains review of operational performance of Generating Plants of JSEB for FY 2012-13.

2.3 Element wise broad approach for True-up for FY 2011-12

Parameters	Thermal	Hydel
A&G Expense	i) The actual expense as evident from Trial Balance of provisional accounts for FY 2011-12. <i>Add-</i> ii) Common costs which have been allocated based on the %age of actual A&G expense for Generation (Thermal) function over the total A&G for all functions	i) The actual expense as evident from Trial Balance of provisional accounts for FY 2011-12. <i>Add-</i> ii) Common costs which have been allocated based on the %age of actual A&G expense for Generation (Hydel) function over the total A&G for all functions
R&M Expense	i) The actual expense as evident from Trial Balance of provisional accounts for FY 2011-12. <i>Add-</i> ii) Common costs which have been allocated based on the %age of actual R&M expense for Generation (Thermal) function over the total R&M for all functions	i) The actual expense as evident from Trial Balance of provisional accounts for FY 2011-12. <i>Add-</i> ii) Common costs which have been allocated based on the %age of actual R&M expense for Generation (Hydel) function over the total R&M for all functions



Employee Expense	<p>i) The actual expense as evident from Trial Balance of provisional accounts for FY 2011-12. <i>Add-</i></p> <p>ii) Common costs which have been allocated based on the %age of actual Employee expense for Generation (Thermal) function over the total Employee Expenses for all functions</p>	<p>i) The actual expense as evident from Trial Balance of provisional accounts for FY 2011-12. <i>Add-</i></p> <p>ii) Common costs which have been allocated based on the %age of actual Employee expense for Generation (Hydel) function over the total Employee Expenses for all functions</p>
Interest on Loan	<p>i) The actual expense as evident from Trial Balance of provisional accounts for FY 2011-12. <i>Add-</i></p> <p>ii) Common costs which have been allocated based on the %age of actual Interest & Finance Charges for Generation (Thermal) function over the total Interest & Finance Charges for all functions</p>	<p>i) The actual expense as evident from Trial Balance of provisional accounts for FY 2011-12. <i>Add-</i></p> <p>ii) Common costs which have been allocated based on the %age of actual Interest & Finance Charges for Generation (Hydel) function over the total Interest & Finance Charges for all functions</p>
ROE	As per Clause 7.13, 7.14, 7.15, 7.16 of Generation Tariff Regulations 2010	As per Clause 7.13, 7.14, 7.15, 7.16 of Generation Tariff Regulations 2010
IWC	As per Clause 7.34, 7.38 & 7.39 of Generation Tariff Regulations 2010	As per Clause 7.36, 7.38 & 7.39 of Generation Tariff Regulations 2010



Chapter 3. Truing up for FY 2011-12

- For the purpose of True Up, JSEB has compared the actual cost for FY 2011-12 with the cost approved by the Hon'ble Commission in MYT Tariff Order dated August, 2012 in which Hon'ble Commission has determined ARR for FY 2011-12 and formulated the tariff for FY 2012-13. The various parameters for the process of True-up have been discussed below:

3.1 Gross generation

3.1.1 It is submitted by the petitioner that the actual gross generation for PTPS and SHPS is at **433.55 MUs** and **270.07 MUs** for FY 2011 -12.

3.1.2 The commission had approved gross generation for PTPS, on the basis of Usable capacity of 640 MW and approved PLF of 67.4% at **2094.95 MUs** for FY 2011-12. For SHPS, the Commission had approved the gross generation at **287.55 MUs** for FY 2011-12.

3.1.3 It is submitted to the Hon'ble Commission that the installed capacity of the Patratu Thermal Power Station is **840 MW**. However, the Board would like to bring to the notice of the Hon'ble Commission that out of the ten (10) Units of the Patratu Thermal Power Station (PTPS), Units 1- 6 of the station are around 40 years old (installed during 1966 -1972) and have run beyond normal economic life of these stations. Units 7 to 10 were installed during 1977- 1986 and have also become reasonably old.

3.1.4 Further, Units **1, 2, 5** and **7** did not generate power during FY 2011-12. The reasons are as mentioned below:

3.1.4.1 **Unit 1:** Under shut down since Oct'10 due to problem in turbine, the upper portion of the turbine has been opened and necessary assessment is being done;

3.1.4.2 **Unit 2:** Under shut down since Mar'10 due to boiler explosion;

3.1.4.3 **Unit 5:** Shut down since May'04 (Under consideration for Phasing out as per CEA Recommendations)



3.1.4.4 **Unit 7:** Under shut down since Oct'10 due to earth fault in Generator stator. The necessary assessment has been done. The Board is also planning for restoration and R&M of Unit 7.

3.1.5 Also, Units **3, 8, 9** and **10** did not generate power during FY 2011-12. The reasons are as mentioned below:

3.1.5.1 **Unit 3:** Shut down since Aug'03 (Under consideration for Phasing out as per CEA Recommendations)

3.1.5.2 **Unit 8:** Under shut down since Oct'05. The Board is also planning for R,M & U of Unit 8 from 110 MW to 120 MW.

3.1.5.3 Units **9 & 10:** Damaged in fire incident on Aug'06. Restoration was going for Unit 9 & Unit 10.

3.1.6 Thus, JSEB requests the Hon'ble Commission to approve the gross generation of **433.55 MUs** for PTPS and **270.07 MUs** for SHPS for FY 2011–12.

3.2 Auxiliary Consumption

3.2.1 JSEB requests the Hon'ble Commission to approve the auxiliary consumption for PTPS at **15.78%** for FY 2011-12 as against **12%** the approved by the Hon'ble Commission.

3.2.2 JSEB requests the Hon'ble Commission to approve the auxiliary consumption for SHPS at **0.09%** for FY 2011-12 as against **0.70%** approved by the Hon'ble Commission for FY 2011-12.

3.3 Net Generation

3.3.1 It is submitted that actual net generation for JSEB is at **365.12 MUs** for PTPS and **269.83 MU** for SHPS MU's for FY 2011-12.

3.3.2 The commission had approved net generation from generating stations to be **1843.56 MU** and **285.54 MU** for PTPS and SHPS, respectively for FY 2011-12.

3.3.3 The petitioner has computed net generation from the generating stations of the Petitioner on the basis of actual gross generation and actual auxiliary consumption.



3.4 Station Heat Rate

- 3.4.1 It is submitted that actual station heat rate for JSEB for PTPS is at **4,062 kcal/kWh** for FY 2011-12.
- 3.4.2 The petitioner would like to mention that the Hon'ble Commission had approved SHR at **3150 kcal/kWh** for FY 2011-12.
- 3.4.3 Thus, JSEB requests the Hon'ble Commission to approve the SHR for PTPS at **4,062 kcal/kWh** for FY 2011-12.

3.5 Specific Oil Consumption

- 3.5.1 It is submitted that actual specific oil consumption of Furnace Oil for FY 2011-12 is **4.36** (ml/kWh) and for light diesel oil is **3.67** (ml/kWh).
- 3.5.2 The Hon'ble Commission had approved normative secondary oil consumption for PTPS for FY 2011- 12 at **3.50** ml/kWh as per the Generation Tariff Regulations 2010.
- 3.5.3 JSEB would like to submit to the Hon'ble Commission that it has been carrying quality repair and maintenance works and thus has been able to reduce specific oil consumption of Light diesel Oil at **3.67** (ml/kWh) which is in line with normative secondary oil consumption for PTPS for FY 2011- 12 at **3.50** ml/kWh as per the Generation Tariff Regulations 2010.
- 3.5.4 Therefore, petitioner requests the Hon'ble Commission to approve the same.

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

- 3.6.1 JSEB requests the Hon'ble Commission to approve the GCV of Primary Fuel at **4,299** kcal/kg and GCV of Secondary Fuel at **10500** (kcal/L) respectively which are in line with approved figures for FY 2011-12 in the previous Tariff order.



3.7 Price of Primary Fuel

3.7.1 The Hon'ble Commission in the previous Tariff Order had approved the weighted average price of coal at Rs. **1154.42**/ MT based on actual landed price of coal as submitted by the Petitioner and the normative transit loss of 0.20%

3.7.2 The petitioner would like to state that during the process of extraction from the mine up to loading to the boiler, the coal passes through various stages of stacking, reclaiming, loading, transportation, un-loading, crushing, etc. At various stages water is sprayed to prevent spontaneous combustion and minimize coal dust pollution. This results in increased moisture content in coal and corresponding deterioration in its quality and also adds to the weight of coal at the loading point. Thus, the coal when weighed at the loading point contains water whereas it is dry when weighted at the unloading point, resulting in loss of weight. Thus the loss of weight is due to the evaporation of moisture/volatile matter during transportation and due to pilferage loss. Accordingly, the key factors attributing to transit loss of coal are

- (a) Evaporation of surface moisture in transit,
- (b) Error/Deviations in Weighbridges,
- (c) Coal theft in transit,
- (d) Distances involved in coal transport also contributes to transit loss,

3.7.3 JSEB would further like to bring to the notice of the Hon'ble Commission that the actual average transit loss from 2008-09, 2009-10, 2010-11 is **3.87%**. As compared to that, the actual transit loss has been much lower at **3.27%** in 2011-12.

Table 1: Transit loss over FY 09 to FY 11

Particulars	2008-09	2009-10	2010-11
Transit Loss	2.55%	3.06%	6.01%
Average Transit Loss	3.87%		
Actual achieved in 2011-12	3.27%		



- 3.7.4 Further It may be noted that JSEB has always made concerted efforts to bring its transit loss to minimum and shall continue to do the same, however the target to reduce the transit loss from **3.27%** (existing) to 0.3% immediately seems impractical and unattainable.
- 3.7.5 The petitioner would request the Hon'ble Commission to kindly provide a transit loss reduction trajectory to be followed in following years. Such a step would reduce the immediate burden on the petitioner and would further help in streamlining of generating operations.
- 3.7.6 Further, JSEB, in its previous MYT petition had provided precedences of various generating station in various states and APTEL orders where the approved transit loss is based on the practical scenario within the State.

Table 2: Additional transit loss approved by SERCs

Utility	Allowed transit loss as per CERC	Actual transit loss	Approved transit loss
Barauni TPS (Bihar)	0.8%	4%	3.8%
Torrent Power (Gujarat)	0.8%		1.4%
PSPCL (Punjab)	0.8%	2%	2%
HPGCL(Haryana)	0.8%	4-6%	1.5%

- 3.7.7 As can be seen that the transit losses for many utilities are higher than the CERC norms. However, given the provision for allowance of different transit loss by SERCs, higher transit loss as per actuals have been allowed. Under the circumstances, Hon'ble Commission is requested to relax the norms and allow the transit loss as per actual basis.
- 3.7.8 Further, Tata Power Corporation Limited (Jojobera Plant), which happens to be another generation utility within the State of Jharkhand, has been incurring 3-4% of transit loss on coal. The year wise detail on the same is mentioned in table for kind perusal of the Hon'ble Commission.

Table 3: Transit Loss for TPCL

Year	Actual Transit Loss
FY 2009-10	3.32%
FY 2010-11	3.82%
FY 2011-12	3.73%



3.7.9 Thus, JSEB would like to submit that the actual transit loss in Jharkhand is much higher than 0.3% as allowed by JSERC. Therefore actual transit loss may please be approved in present context of the state.

3.8 Summary

3.8.1 Table below summarizes the results of True up of plant parameters and fuel cost determinants for Patratu Thermal Power Station & Sikidri Hydrel Power plant for FY 2011-12 of JSEB.

Table 4: Plant Parameters & Fuel Cost Determinants for PTPS

Parameters	Units	Submitted by the Petitioner in Previous Tariff Petition	Approved in the MYT Tariff Order	Actual as per Finalized Accounts for FY 2011-12
Installed Capacity	MW	840	840	840
De-Rated Capacity	MW	640	640	640
Transit Loss	%	3.87%	0.30%	3.27%
PLF	%	32.42%	67.40%	16.00%
Auxilliary Consumption	%	15.05%	12.00%	15.78%
SHR	(kCal/kWh)	4231	3150	4,062
CV of Coal	(Kcal/Kg)	4230	4230	4,299
CV of Oil (FO/LDO)	(Kcal/LT)	10500	10500	10500
Gross Generation	MU	369.20	2,094.95	433.55
Net Generation	MU	313.63	1,843.56	365.12
Sp Oil Consumption (FO)	ml/kWh	5.49	3.50	4.36
Sp Oil Consumption (LDO)	ml/kWh	3.74		3.67
ECR	Rs/kWh	1.56	0.96	1.31
Fuel Cost	Rs. Cr	57.82	30.28	47.75



Table 5: Plant Parameters for SHPS

Parameters	Submitted by the Petitioner in Previous Tariff Petition	Approved in the MYT Tariff Order	Actual as per Finalized Accounts for FY 2011-12
Capapcity in MW	130	130	130
Gross Generation (Mus)	287.55	287.55	270.07
Auxiliary Consumption (%)	0.09%	0.70%	0.09%
Auxiliary Consumption (MUs)	0.26	2.01	0.24
Net Generation (Mus)	287.29	285.54	269.83

3.9 Operation & Maintenance (O&M) Expenses

3.9.1 It is submitted that the actual Operation & maintenance expenses for FY 2011-12 are Rs. **102.14 Cr** for PTPS & Rs. **13.06 Cr** for SHPS for FY 2011-12. The same can be verified from Annual Accounts for FY 2011-12.

3.9.2 The Operation and Maintenance (O&M) Expenses have been discussed in detail in the subsequent paragraphs for True-up exercise;

3.10 Employee Expenses

3.10.1 The **Employee Expenses** for FY 2011-12 in previous tariff order were approved by the Commission by increasing the actual employee cost (excluding the amount of arrears paid out on account of wage arrears and terminal benefits) for FY 2010-11 by weighted average inflation rate of 8.40% (i.e. weighted average of WPI & CPI during past 5 years in ratio of 80:20, respectively).

3.10.2 The Commission had then added the projected payment to be made on account of VI Pay Commission arrears to the projected employee cost for FY 2011-12 and the actual cost incurred towards terminal benefits during FY 2010-11 to arrive at gross employee cost for FY 2011-12 for JSEB as whole subject to final true up on the basis of audited annual accounts.

3.10.3 The total employee cost was then **disaggregated** between Generation (thermal & hydel), Transmission and Distribution functions of JSEB in the **ratio of actual number of employees** during FY 2010-11.

3.10.4 Accordingly, the Commission had approved Rs. **105.81 Cr** as employee cost for PTPS & Rs. **12.96 Cr** as employee cost for SHPS of JSEB for FY 2011-12.



3.10.5 The actual employee expense of the petitioner is divided in two parts – (i) The actual expense as evident from Provisional Annual Accounts for 2011-12; (ii) Common costs which have been distributed based on the %age of actual employee expense for generation function over the actual total employee cost for all functions.

3.10.6 Thus, the actual employee cost for **PTPS** computes at Rs. **69.31** Crs and for **SHPS** it computes at Rs. **9.44** Crs for FY 2011-12.

3.10.7 Therefore, the Hon'ble Commission is requested to approve the same.

3.11 A&G Expenses

3.11.1 The **A&G Expenses** for FY 2011-12 in previous tariff order were approved by the Commission by escalating the actual A&G cost approved for FY 2010-11 by **8.40%** p.a. (i.e. weighted average of WPI & CPI during past 5 years in ratio of 80:20, respectively) subject to final true up based on audited annual accounts.

3.11.2 Accordingly, the Commission had approved Rs. **13.25** Cr as A&G cost for PTPS and Rs. **1.62** Cr for SHPS of JSEB for FY 2011-12.

3.11.3 The actual A&G expense of the petitioner is divided in two parts – (i) The actual expense as evident from Provisional Annual Accounts for 2011-12; (ii) Common costs which have been distributed based on the %age of actual A&G expense for generation function over the actual total A&G cost for all functions.

3.11.4 Thus, the actual A&G cost for **PTPS** computes at **Rs. 20.23** Cr and for SHPS at **Rs.1.00** Cr respectively.

3.11.5 Therefore, the Hon'ble Commission is requested to approve the same.

3.12 R&M Expenses

3.12.1 The **R&M Expenses** for FY 2011-12 in previous tariff order were approved by the Commission by considering ratio of actual R&M cost incurred during FY 2010-11 to the opening GFA- (**2.22%**). This ratio was then multiplied with the approved opening GFA for FY 2011-12 to arrive at **R&M** cost for **Generation function** of JSEB for FY 2011-12;

3.12.2 Accordingly, the Commission had approved Rs. **15.94** Crs for PTPS and **Rs. 0.96 Cr** for SHPS as **R&M** cost for JSEB for FY 2011-12.



3.12.3 The actual R&M expense of the petitioner is divided in two parts – (i) The actual expense as evident from Provisional Annual Accounts for 2011-12; (ii) Common costs which have been disaggregated based on the %age of actual R&M expense for generation function over the actual total R&M cost for all functions.

3.12.4 Thus, the actual **R&M** cost for **PTPS** computes at Rs. **12.59** Crs and for SHPS it computes at Rs. **2.62** Crs for FY 2011-12.

3.12.5 It is submitted that the actual **R&M** cost for **Generation function** of JSEB for FY 2011-12 is similar to that approved by the Hon'ble Commission in previous Tariff Order.

3.12.6 Therefore, the Hon'ble Commission is requested to approve the same.

3.13 Total O&M Expenses

3.13.1 The Hon'ble Commission is requested to approve the actual **O&M** cost for PTPS at Rs. **102.14** Crs and for SHPS at Rs. **13.06** Crs for FY 2011-12 as shown in the table below:

Table 6: O&M Expenses for PTPS (Rs. Crs)

O&M Expenses	Submitted by the Petitioner in Previous Tariff Petition	Approved in the MYT Tariff Order	Actual- FY 2011-12
A&G Expenses	13.32	13.25	20.23
R&M Expenses	32.28	15.94	12.59
Employee Expenses	140.67	105.81	69.31
Total	186.27	135.00	102.14

Table 7: O&M Expenses for SHPS (Rs. Crs)

O&M Expenses	Submitted by the Petitioner in Previous Tariff Petition	Approved in the MYT Tariff Order	Actual- FY 2011-12
A&G Expenses	1.63	1.62	1.00
R&M Expenses	1.50	0.96	2.62
Employee Expenses	17.23	12.96	9.44
Total	20.36	15.54	13.06



3.14 Depreciation

3.14.1 The depreciation for FY 2011-12 has been computed by the petitioner based on the asset classification, cost of acquisition and additional capitalization of assets during FY 2011-12.

3.14.2 It is submitted that the actual Depreciation for PTPS computes at Rs. **8.66 Cr** and for SHPS it computes at Rs. **1.79** for FY 2011-12.

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

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

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

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

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

3.14.4 In the previous tariff order the Hon'ble Commission had followed Generation Tariff Regulations, 2010 to approve Depreciation expenses of Rs. **9.93** Crs for PTPS and Rs. **0.84** Crs for FY 2011-12.

3.14.5 Accordingly, JSEB requests the Hon'ble Commission to approve the depreciation for PTPS at Rs. **8.66** Cr and for SHPS at Rs. **1.79** Cr for FY 2011-12.



Table 8: Depreciation for PTPS (Rs. Crs)

Depreciation	Submitted by the Petitioner in Previous Tariff Petition	Approved in the MYT Tariff Order	Actual- FY 2011-12
Opening GFA	718.85		718.85
Addition during the year	425.64		14.66
Closing GFA	1144.49		733.52
Depreciation for the Year	10.96	9.93	8.66

Table 9: Depreciation for SHPS (Rs. Crs)

Depreciation	Submitted by the Petitioner in Previous Tariff Petition	Approved in the MYT Tariff Order	Actual- FY 2011-12
Opening GFA	43.13		43.13
Addition during the year	9.98		0.00
Less : Deductions			0.10
Closing GFA	53.11		43.02
Depreciation for the Year	0.88	0.84	1.79

3.15 Interest on Loan

3.15.1 As per the “Generation Tariff Regulations, 2010” it follows:

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

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

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

3.15.2 However the petitioner has taken actual loan and therefore would request the Commission to approve actual interest on Loan.

3.15.3 The actual Interest on loan expense of the petitioner is divided in two parts – (i) The actual expense as evident from Provisional Annual Accounts for 2011-12; (ii) Common costs which have been disaggregated based on the %age of actual Interest



on loan expense for generation function over the actual total Interest on loan cost for all functions.

3.15.4 JSEB requests the Hon'ble Commission to approve the interest on loan for FY 2011 – 12 to be **Rs 26.25 Crs** for PTPS and **Rs 4.60 Crs** for SHPS.

3.15.5 Accordingly, JSEB requests the Hon'ble Commission to approve the same.

Table 10: Interest on Loan for PTPS (Rs. Crs)

Particulars	Submitted by the Petitioner in Previous Tariff Petition	Approved in the MYT Tariff Order	Actual- FY 2011-12
Interest on Loan	18.75	15.93	26.25

Table 11: Interest on Loan for SHPS (Rs. Crs)

Particulars	Submitted by the Petitioner in Previous Tariff Petition	Approved in the MYT Tariff Order	Actual- FY 2011-12
Interest on Loan	0.69	1.02	4.60

3.15.6 The total actual interest and finance charges of JSEB (as a whole) are Rs. **539.09** crs. (including Common interest and finance charges). The breakup of the actual interest and finance charges can be referred from the Provisional Annual Accounts for 2011-12. The **Common** interest and finance charges have been disaggregated based on the %age of generation function interest & finance charges over the total actual interest and finance charges for JSEB.

Table 12: Break up of interest and finance charges

Particulars	G(Thermal)	G(Hydro)	T	D	JSEB	Common IFC
IFC	2.85	0.50	6.97	48.24	58.56	480.52
Allocation %	4.87%	0.85%	11.90%	82.38%	-	
IFC Allocation	26.25	4.60	64.16	444.07	539.09	



3.16 Interest on Working Capital (IWC)

3.16.1 “Generation Tariff Regulations, 2010” specify the following norms for calculation of interest on working capital for Thermal Power Station as:

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

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

iii) Maintenance spares @ 20% operation and maintenance expenses

iv) Operation and maintenance expenses for 1 month

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

3.16.2 Further “Generation Tariff Regulations, 2010” specify the following norms for calculation of interest on working capital for Hydro Power Station as:

“i) Maintenance spares @ 15% operation and maintenance expenses

ii) Operation and maintenance expenses for 1 month

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

3.16.3 Thus, Interest on Working Capital computes at **Rs 10.04 Crs** for PTPS and at **Rs 0.88 Crs** for SHPS for FY 2011-12 as shown in the table below:



Table 13: Interest on Working Capital for PTPS (Rs. Crs)

Particulars	Submitted by the Petitioner in Previous Tariff Petition	Approved in the MYT Tariff Order	Actual- FY 2011-12
Cost of Coal for 1.5 months	5.48	3.79	5.97
Cost of Secondary Fuel Oil for 2 months#	2.33	0.92	2.52
O&M expenses for 1 month	15.52	11.25	8.51
Maintenance spares @ 20% of O&M	37.25	27.00	20.43
Receivables-2 months	-	40.99	39.77
Total Working Capital	60.58	83.78	77.20
Rate of Interest	13.00%	13.00%	13.00%
Interest on Working Capital	7.88	10.89	10.04

Table 14: Interest on Working Capital for SHPS (Rs. Crs)

Particulars	Submitted by the Petitioner in Previous Tariff Petition	Approved in the MYT Tariff Order	Actual- FY 2011-12
O&M for 1 Month	1.70	1.30	1.09
Maintenance spares @ 15% of O&M Expenses	3.05	2.33	1.96
Receivables-2 months	-	3.24	3.71
Total Working Capital	4.75	6.87	6.76
Rate of Interest	13%	13%	13%
Interest on Working Capital	0.62	0.89	0.88

3.17 Return on Equity (RoE)

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

3.17.2 In the previous tariff order the Hon’ble Commission had followed Generation Tariff Regulations, 2010 to approve Return on equity for PTPS at Rs. **39.40** Crs and for SHPS at Rs. **2.20** Crs for FY 2011-12.

3.17.3 It is submitted that Return on equity computes at **Rs 33.77 Crs** for PTPS and **Rs 2.00 Crs** for SHPS for FY 2011-12 as shown in the table below:



Table 15: Return on Equity for PTPS (Rs. Crs)

Return on Equity	Unit	Submitted by the Petitioner in Previous Tariff Petition	Approved in the MYT Tariff Order	Actual- FY 2011-12
Equity (Opening Balance)	Rs Cr			215.67
Net additions during the year	Rs Cr			4.40
Equity (Closing Balance)	Rs Cr			220.07
Average Equity	Rs Cr		254.17	217.87
Rate of Return on Equity	%		15.50%	15.50%
Applicable tax rate (t%)	%			
Return on Equity	Rs Cr	47.42	39.40	33.77

Table 16: Return on Equity for SHPS (Rs. Crs)

Return on Equity	Unit	Submitted by the Petitioner in Previous Tariff Petition	Approved in the MYT Tariff Order	Actual- FY 2011-12
Equity (Opening Balance)	Rs Cr			12.95
Net additions during the year	Rs Cr			(0.03)
Equity (Closing Balance)	Rs Cr			12.92
Average Equity	Rs Cr		14.17	12.93
Rate of Return on Equity	%		15.50%	15.50%
Applicable tax rate (t%)	%			
Return on Equity	Rs Cr	2.20	2.20	2.00

3.17.4 Hence, JSEB requests the Hon'ble Commission to approve the same.

3.18 Non tariff Income

3.18.1 Non Tariff Income for FY 2011-12 is at **Rs. 5.09 Crs.** for PTPS and **Rs. 0.06 Crs** SHPS respectively. The same can be verified from the Provisional Annual Accounts for 2011-12. JSEB requests the Hon'ble Commission to approve the same.

3.19 Cost of secondary fuel oil

3.19.1 The Hon'ble Commission had calculated the weighted average cost of furnace oil and light diesel oil as **Rs 5.54 Cr** for FY 2011-12 in accordance with the Generation Tariff Regulations, 2010.

3.19.2 However the actual Weighted Average Cost of secondary Fuel Oil for FY 2011-12 computes at **Rs. 15.13 Crs.**



3.19.3 Therefore the Hon'ble Commission is requested to approve the same.

Table 17: Secondary Fuel Oil Cost (Rs. Crs)

Secondary Fuel Cost	Units	Submitted by the Petitioner in Previous Tariff Petition	Approved in the MYT Tariff Order	Actual-FY 2011-12
Price of Oil (FO)	Rs/KL	32539	41449	43,452
Price of Oil (LDO)	Rs/KL	53394	59981	
Sp Oil Consumption (FO)	ml/kWh	5.49	3.50	4.36
Sp Oil Consumption (LDO)	ml/kWh	3.74		3.67
Secondary Fuel Cost	Rs. Cr	13.97	5.54	15.13

3.20 Summary of fixed Costs

3.20.1 In the previous tariff order the Hon'ble Commission had followed Generation Tariff Regulations, 2010 to approve total fixed costs for PTPS at Rs. **216.68** Cr and for SHPS at Rs. **20.49** Crs for FY 2011-12.

3.20.2 However the total fixed costs compute at **Rs 195.99 Crs** for PTPS and **Rs. 22.33 Crs** for SHPS for FY 2011-12 as shown in the table below

Table 18 : Fixed Cost for PTPS for FY 2011-12 (In Rs Crore)

Parameters	Submitted by the Petitioner in Previous Tariff Petition	Approved in the MYT Tariff Order	Actuals-FY 2011-12
O&M Expenses	186.27	135.00	102.14
Depreciation	10.96	9.93	8.66
Interest on Loan	18.75	15.93	26.25
Return on Equity	47.42	39.40	33.77
Interest on Working Capital	7.88	10.89	10.04
Cost of Secondary Fuel Oil	-	5.54	15.13
Total Fixed Cost	271.28	216.68	195.99

Table 19 : Fixed Cost for SHPS for FY 2011-12 (In Rs Crore)

Parameters	Submitted by the Petitioner in Previous Tariff Petition	Approved in the MYT Tariff Order	Actuals-FY 2011-12
O&M Expenses	20.36	15.54	13.06
Depreciation	0.88	0.84	1.79
Interest on Loan	0.69	1.02	4.60
Return on Equity	2.20	2.20	2.00
Interest on Working Capital	0.62	0.89	0.88
Total Fixed Cost	24.75	20.49	22.33



3.20.3 The Hon'ble Commission is requested to kindly approve the total fixed cost as shown in the tables above.

3.21 Revenue Gap / Surplus

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

Table 20 : Revenue Requirement for PTPS for FY 2011-12 (Rs Crore)

Parameters	Submitted by the Petitioner in Previous Tariff Petition	Approved in the MYT Tariff Order	Actuals-FY 2011-12
O&M Expenses	186.27	135.00	102.14
Depreciation	10.96	9.93	8.66
Interest on Loan	18.75	15.93	26.25
Return on Equity	47.42	39.40	33.77
Interest on Working Capital	7.88	10.89	10.04
Cost of Secondary Fuel Oil	-	5.54	15.13
Total Fixed Cost	271.28	216.68	195.99
Energy Cost	57.82	30.28	47.75
Total Expenses	329.10	246.96	243.74
Less: NTI	1.05	1.05	5.09
Net Total Expenses	328.05	245.91	238.65

Table 21 : Revenue Requirement for PTPS for FY 2011-12 (Rs Crore)

Parameters	Submitted by the Petitioner in Previous Tariff Petition	Approved in the MYT Tariff Order	Actuals-FY 2011-12
O&M Expenses	20.36	15.54	13.06
Depreciation	0.88	0.84	1.79
Interest on Loan	0.69	1.02	4.60
Return on Equity	2.20	2.20	2.00
Interest on Working Capital	0.62	0.89	0.88
Total Fixed Cost	24.75	20.49	22.33
Less: NTI	1.05	1.05	0.06
Net Total Expenses	23.70	19.44	22.27

3.21.2 Thus, Petitioner would request Honourable Commission to true up the fixed & variable costs as incurred.



Chapter 4. Review of Operational Performance of FY 2012-13

4.1 Review of Operational Performance of FY 2012-13

4.1.1 JSEB hereby submits the operational parameters for first half of the first year of the control period i.e. FY 2012-13 based on the actual generation and plant parameters from April 2012 to September 2012 as per the Terms and Conditions for (Determination of Generation Tariff) Regulations, 2010 issued by the Honourable Jharkhand State Electricity Regulatory Commission (JSERC).

4.1.2 For the purpose of Review, JSEB has showed the operational performance for first half of FY 2012-13 with the parameters and cost approved by the Hon'ble Commission in Tariff Order dated May, 2012 in which Hon'ble Commission has determined ARR for FY 2011-12.

4.1.3 The Petitioner in the first half (Apr -12 to Sep 12) of FY 2012-13 has following plant parameters and fuel Cost:

Table 22 : Plant parameters for PTPS for FY 2012-13

Parameters	Units	Actual for FY 2011-12	Submitted by the Petitioner in the MYT Tariff Petition for FY 2012-13	Approved in the MYT Tariff Order	Actuals for April 2012 - Sep 2012
Installed Capacity	MW	840	840	840	840
De-Rated Capacity	MW	640	640	640	640
PLF	%	16.00%	34.34%	82.00%	21.71%
Auxilliary Consumption	%	15.78%	14.25%	12.00%	13.65%
SHR	(kCal/kWh)	4,062.49	4,231.00	3,125.00	4,092.26
CV of Coal	(Kcal/Kg)	4,299.32	4,230.00	4,689.98	4,299.32
CV of Oil (FO/LDO)	(Kcal/LT)	10,500.00	10,500.00	10,500.00	10,500.00
Gross Generation	MU	433.55	722.05	4238.09	300.80
Net Generation	MU	365.12	619.16	3729.52	260.06
Sp Oil Consumption (FO)	ml/kWh	4.36	5.49	3.50	5.49
Sp Oil Consumption (LDO)	ml/kWh	3.67	3.74	3.50	3.67



Table 23 : Plant parameters for SHPS for FY 2012-13

Parameters	Actual for FY 2011-12	Submitted by the Petitioner in the MYT Tariff Petition for FY 2012-13	Approved in the MYT Tariff Order	Actuals for April 2012 - Sep 2012
Capacity in MW	130	130	130	130
Gross Generation (Mus)	270.07	159.00	287.55	106.44
Auxiliary Consumption (%)	0.09%	3.84%	0.70%	0.05%
Auxiliary Consumption (MUs)	0.24	6.11	2.01	0.06
Net Generation (Mus)	269.83	152.89	285.54	106.38

- 4.1.4 JSEB would like to request the Hon'ble Commission to kindly consider the same financial parameters that were submitted in previous year's petition i.e. Multi Year Tariff for control period (FY 2012-13 to FY 2015-16) as revised estimates for FY 2012-13.