Jharkhand State Electricity Regulatory Commission

Provisional Order

on

Petition for

approval of Capital Cost,

Business Plan and

MYT Petition for FY 2012-13 to FY 2015-16

for

Adhunik Power and Natural Resources Limited

(APNRL)

Ranchi

May 2014

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List of Abbreviations

Abbreviation	Description
A&G	Administrative and General
ARR	Aggregate Revenue Requirement
COD	Commercial Operation Date
IDC	Interest during Construction
FY	Financial Year
GCV	Gross Calorific Value
GFA	Gross Fixed Assets
GoI	Government of India
JSERC	Jharkhand State Electricity Regulatory Commission
Kcal	Kilocalorie
Kg	Kilogram
kWh	Kilowatt-hour
MAT	Minimum Alternative Tax
Ml	Millilitre
MT	Million Tonnes
MUs	Million Units
MW	Megawatt
NAPAF	Normative Annual Plant Availability Factor
O&M	Operations and Maintenance
PLF	Plant Load Factor
PPA	Power Purchase Agreement
R&M	Repair and Maintenance
RoE	Return on Equity
Rs	Rupees
SBI	State Bank of India
SERC	State Electricity Regulatory Commission
SLM	Straight Line Method
CERC	Central Electricity Regulatory Commission
DTS	Dedicated Transmission System

A1: INTRODUCTION

Jharkhand State Electricity Regulatory Commission

1.1 The Jharkhand State Electricity Regulatory Commission (hereinafter referred to as the "JSERC" or "the Commission") was established by the Government of Jharkhand under Section 17 of the Electricity Regulatory Commission Act, 1998 on August 22, 2002. The Commission became operational with effect from April 24, 2003. The Electricity Act, 2003 (hereinafter referred to as "the Act" or "EA, 2003") came into force with effect from 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 August 22, 2002 defined the functions of JSERC as per Section 22 of the Electricity Regulatory Commission Act, 1998 to be the following, namely:-

(a) to determine the tariff for electricity, wholesale, bulk, grid or retail, as the case may be, in the manner provided in section 29;

(b) to determine the tariff payable for the use of the transmission facilities in the manner provided in section 29;

(c) to regulate power purchase and procurement process of the transmission utilities and distribution utilities including the price at which the power shall be procured from the generating companies, generating stations or from other sources for transmission, sale, distribution and supply in the State;

(d) to promote competition, efficiency and economy in the activities of the electricity industry to achieve the objects and purposes of this Act.

1.3 With the Electricity Act, 2003 being brought into force, the earlier Electricity Regulatory Commission Act of 1998 stands repealed and the functions of JSERC are now defined as per Section 86 of the Act.

1.4 In accordance with the Act, the JSERC discharges the following functions: -

(a) determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State:

Provided that where open access has been permitted to a category of consumers under section 42, the State Commission shall determine only the wheeling charges and surcharge thereon, if any, for the said category of consumers;

(b) regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State;

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

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

(e) promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee;

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

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

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

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

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

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

1.5 The Commission advises the State Government on all or any of the following matters, namely :-

(a) promotion of competition, efficiency and economy in activities of the electricity industry;

(b) promotion of investment in electricity industry;

(c) reorganisation and restructuring of electricity industry in the State;

(d) matters concerning generation, transmission, distribution and trading of electricity or any other matter referred to the State Commission by that Government.

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

1.7 In discharge of its functions, the State Commission is guided by the National Tariff Policy as brought out by GoI in compliance to Section 3 of the Act. The objectives of the National Tariff Policy are to:

(a) ensure availability of electricity to consumers at reasonable and competitive rates;

(b) ensure financial viability of the sector and attract investments;

(c) promote transparency, consistency and predictability in regulatory approaches across jurisdictions and minimize perceptions of regulatory risks;

(d) promote competition, efficiency in operations and improvement in quality of supply.

Adhunik Power and Natural Resources Limited

1.8 Adhunik Power and Natural Resources Limited (hereinafter referred to as "the Petitioner" or "APNRL" is a company incorporated under the provisions of the Indian Companies Act, 1956.

1.9 Originally incorporated as "Adhunik Thermal Energy Ltd." (ATEL), in the year 2007, ATEL was renamed to "Neepaz Thermal Energy Limited" (NTEL) and subsequently renamed as "Adhunik Power & Natural Resources Ltd." (APNRL) in the year 2008 after complying with the applicable provisions of the Companies Act, 1956.

1.10 ATEL signed a Memorandum of Understanding (hereinafter referred to as "the MoU") with Government of Jharkhand in October 2005 to develop a 1,000 MW coal based thermal power plant in October 2005. Further in January 2007, the Petitioner and Government of Jharkhand agreed to extend the validity period of the MOU further for a period of 12 months. In February 2008, the Petitioner and Government of Jharkhand agreed to extend the validity period of the MOU further for a period of three years upto October 31, 2010. Subsequently in May 2011, the validity of the MOU was again extended for a period of three years from November 1, 2010 to October 31, 2013.

1.11 Accordingly, APNRL is setting up a 540 MW coal based power plant in Stage-1 (consisting of Unit 1 and Unit 2 of 270 MW each) and is planning to develop an additional 540 MW coal based power plant in Stage-2. Unit 1 of the power plant was synchronized on November 13, 2012 and COD for the same was declared on January 21, 2013. Unit 2 of the power plant was synchronized on March 29, 2013 and COD for the same was declared on May 19, 2013.

1.12 Further, as per the provisions of the MOU, the Government of Jharkhand or Distribution Licensees authorized by it will have the first right of claim on purchase upto 25% of power delivered to the system by the proposed power station.

1.13 Further, the extension of the MoU stipulates that the Government of Jharkhand moved to Government of India for the policy decision through suitable arrangements for making available to the State 12% of the total power generated at variable cost by APNRL. Hence, as stated above, as per MoU and its extension's conditions, JSEB will have first right of claim on purchase upto 25% of power delivered to the system, out of which 12% power will be made available to the state at variable cost only.

1.14 Pursuant to the MoU signed between Government of Jharkhand and APNRL, APNRL signed a Power Purchase Agreement (hereinafter also referred to as "the PPA") with Jharkhand State Electricity Board (now Jharkhand Urja Vikash Nigam Limited or "JUVNL") on September 28, 2012 for supplying contracted capacity of 122.85 MW (25% of 491.4 MW, i.e., Gross Capacity of 2 Units of 270 MW each, totaling to 540 MW less Normative Auxiliary Consumption) from Stage 1 of the Project on long term basis.

1.15 As per the terms of the PPA 63.882 MW capacity, i.e., 13% of Net Capacity of Stage 1 shall be supplied to JSEB (now JUVNL) at total tariff and the balance 58.968 MW capacity, i.e., 12% of total Net Capacity of Stage 1 shall be supplied at variable cost only.

1.16 As per clause 3.1 (ii) and (iii) of the PPA entered into by the Petitioner quoted below and JSEB (now JUVNL) the tariff payable shall be determined by the State Commission :

3.1(ii)"The tariff for sale of power by seller to procurer for the contracted capacity of 63.882 MW shall be payable by the procurer as determined by JSERC in accordance with the "Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2010 as amended from time to time or any other competent authority authorized from time to time. The annual fixed charges determined in accordance with the "Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2010 shall be recoverable from the net saleable capacity of 432.432 MW (i.e. Gross capacity minus auxiliary consumption minus 12% power to be supplied to procurer at energy charge)".

3.1(iii) The energy charge for sale of power by seller to procurer for the contracted capacity of 59.968 MW shall be payable by the procurer as determined by the JSERC in accordance with the "Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2010", as amended from time to time."

Overview of the Thermal Station

1.17 The Petitioner currently has achieved COD of its two units of 270 MW each. Both these units are subject to ARR and Tariff determination. The following table summarizes the information pertaining to both the units:

S. No.	Unit	Installed Capacity(MW)	Status of Operation	Actual Date of Commercial Operation
1	Unit 1	270	Operational	January 21, 2013
2	Unit 2	270	Operational	May 19, 2013

Scope of the Present Order

1.18 The Petitioner in its tariff petition dated November 1, 2012 has prayed before the Commission for the following:

a) Approve the tariff from 540 MW (2 x 270) Stage-1 coal based thermal power plant in Jharkhand, for supplying the regulated Contracted Capacity of 122.85 MW to Jharkhand State Electricity Board (now JUVNL) for the Control Period from FY 2012-13 to FY 2015-16 , the Business Plan and Multi Year Tariff.

b) Approve the Business Plan and Multi Year Generation Tariff for supplying the regulated Contracted Capacity of 122.85 MW for both the Units 1 and 2 to Jharkhand State Electricity Board (now JUVNL) for the Control Period from FY 2012-13 to FY 2015-16

c) Grant an interim approval for Provisional Tariff to be charged from the COD of stage 1 for supplying the regulated Contracted Capacity to JSEB (now JUVNL).

d) Approve the recovery of upward and downward variation in fuel prices and calorific value including fuel mix through Fuel Price Adjustment as part of monthly Energy Charges.

1.19 The Commission in this tariff order has approved the provisional capital cost and provisional tariff for FY 2012-13 to FY 2015-16 for Unit 1 and Unit 2 of the Petitioner. While approving the capital cost and tariff for the Petitioner the Commission has taken into consideration the following:

a) Provisions of the Electricity Act, 2003,

b) Provisions of the National Electricity Policy,

c) Provisions of the Tariff Policy;

d) Principles laid down in the JSERC (Terms and Conditions for Determination of Generation Tariff) Regulations, 2010 (hereinafter referred to as 'Generation Tariff Regulations, 2010').

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A2: PROCEDURAL HISTORY

Petition for approval of Capital Cost, Business Plan and MYT tariff for FY 2012-13 to FY 2015-16

2.1 The Petitioner filed a petition with the Commission for approval of the Capital Cost Business Plan and provisional tariff for the MYT control period (FY 2012-13 to FY 2015-16) on November 1, 2012.

2.2 However, the Commission was unable to conduct the public hearing for the aforementioned Petition as the Hon'ble Chairperson of the Commission retired on December 15, 2012 and the Commission was functioning with only one Member i.e. Member (Technical). The Member (Finance) post was vacant since 2008.

2.3 As per JSERC (Conduct of Business) Regulations, 2011 the quorum should be two members among the three members for issue of any effective orders, such as issue of tariff orders, issue of judgments for the cases filled in the Commission and for any important policy matters. The extract of the Regulation is as follows:

"Quorum:

For all initial procedural issues, the quorum may be one Member.

Except for initial procedural issues like notices, filing of copies and documents, the quorum of the Commission shall be two among the three Members."

2.4 As there was only one member in the Commission, even though the ARR and Tariff Petition pertaining to all the Distribution licensees and Generators existing in the State of Jharkhand were received, the tariff orders could not be finalized due to lack of quorum.

2.5 Subsequently, the Member (Finance) was appointed in January 2014. Also, as per the directions of the APTEL in this regard the Commission has amended the JSERC (Conduct of Business Regulations), 2011 and has modified the quorum to one member which shall facilitate the working of the Commission in the future even in the presence of only a single member.

Information Gaps in the ARR Petition

2.6 In accordance with Section 64(3) of the Act, the State Electricity Regulatory Commission, within one hundred and twenty days of the filing of application for determination of tariff, is required to either accept it and issue a tariff order or reject the application for reasons to be recorded in writing. The Commission accepted the application submitted by the Petitioner for determination of tariff. As part of tariff determination exercise for the Control Period, several deficiencies/information gaps were observed in the tariff petition submitted by the Petitioner.

2.7 These information gaps were communicated to the Petitioner vide letter no.

(a) JSERC/Legal/27/2012 /756 dt. 06.12.2012,

(b) JSERC/Legal/27 of 2012/55 dt. 05.05.2014

2.8 The Commission also communicated the requisite clarifications required vide e-mail to the Petitioner.

2.9 The Petitioner subsequently submitted its response to the aforesaid letters and e-mails and provided the requisite additional data/information vide letter no.

(a) APNRL/JSERC/27 of 2012/2012-13/119 dt. 29.01.2013,

(b) APNRL/JSERC/2014-15/316 dt. 09.05.2014

(c) APNRL/JSERC/2014-15/322 dt. 17.05.2014

(d) APNRL/JSERC/2014-15/323 dt. 20.05.2014

2.10 The Commission scrutinized the additional data/information and on its validation, has passed this Order on the petition filed by the Petitioner.

Inviting Public Comments/Suggestions

2.11 The Commission directed the Petitioner to make available copies of the petition to the members of general public on request, and also issue a public notice inviting comments/ suggestions on the petition for approval of the Capital Cost Business Plan and provisional tariff for the MYT control period (FY 2012-13 to FY 2015-16).

2.12 The aforesaid public notice was issued by the Petitioner in various newspapers on February 13, 2014 and February 14, 2014.Further, a period of twenty one (21) days was given to the members of the general public for submitting their comments/suggestions.

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

Sl. No.	Newspaper (Jharkhand edition)	Date of Publication
1	The Avenue Mail	13.02.2014 & 14.02.2014
2	The Hindustan Times	13.02.2014 & 14.02.2014
3	Sanmarg	13.02.2014 & 14.02.2014
4	Uditwani	13.02.2014 & 14.02.2014

2.13 Subsequently, the Commission also issued a notice on its website www.jserc.org and various newspapers for conducting the public hearing on the Petition. The details of the newspapers where the notice was issued by the Commission are as under:

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

Sl. No.	Newspaper (Jharkhand edition)	Date of Publication
1	Ajj	23.04.2014
2	Hindustan	23.04.2014
3	The Pioneer	23.04.2014
4	Prabhat Khabar	24.04.2014
5	Ranchi Express	24.04.2014
6	The Hindustan Times	24.04.2014

Submission of Comments/Suggestions and Conduct of Public Hearing

2.14 A public hearing was held on April 28, 2014 at Ranchi and many respondents voiced their views on the petition filed by the Petitioner. The comments/suggestions voiced by the respondents and the Petitioner's response thereon along with the Commission's views on the response provided by the Petitioner are detailed in the Section A4: of this Order.

A3: SUMMARY OF THE PETITION

Capital cost of the project

3.1 In its petition dated November 1, 2012, the Petitioner submitted that the capital cost of Unit-1 and Unit-2 of the project as on COD is expected to be Rs. 3,298.41 Crore. The project is funded through a combination of debt and equity. The summary of capital cost of the project as submitted is given in the table below.

Table 3: Summary of capital cost

Particulars	Unit-1		Unit-2		Total Project Cost	
	Rs Crore	%	Rs Crore	%	Rs Crore	%
Debt	1,181.91	70.22%	1,135.51	70.29%	2,317.42	70.26%
Equity	501.14	29.78%	479.84	29.71%	980.99	29.74%
Total	1,683.05	100.00%	1,615.36	100.00%	3,298.41	100.00%

3.2 Further, the Petitioner in its petition dated November 1, 2012 submitted that an additional capitalization of amount of Rs 38 Crore is proposed to be undertaken after COD of the plant. The work will be categorized under the head of 'Works deferred for execution' and is expected to get completed in FY 2013-14 and shall be shared between Unit-1 and Unit-2 as follows:

Table 4: Summary of additional capitalization

Particulars	Unit-1	Unit-2	Total
	Rs Crore	Rs Crore	Rs Crore
Work deferred for execution (Rs. Cr.)	19.39	18.61	38.00

Revenue requirement for FY 2012-13 to FY 2015-16

3.3 The summary of operational performance, fixed cost, energy charges and annual revenue requirement for Unit-1 and Unit-2 as submitted by the Petitioner in its tariff petition dated November 1, 2012 is given below:

Table 5: Estimates for operational performance, fixed cost, energy charges and annual revenue requirement for FY 2012-13 to FY 2015-16 for Unit 1

Particulars	Units	Projections for FY 2012-13 (for 4 months)	Projections for FY 2013-14	Projections for FY 2013-14	Projections for FY 2013-14
Capacity	MW	270	270	270	270
No. of Months of Operation	Months	4	12	12	12

Particulars	**Units**	**Projections for FY 2012-13 (for 4 months)**	**Projections for FY 2013-14**	**Projections for FY 2013-14**	**Projections for FY 2013-14**
Gross Generation	MUs	670	2010	2010	2016
Aux Power Consumption	%	9.00%	9.00%	9.00%	9.00%
Ex-Bus Generation	MUs	610	1829	1829	1834
NAPAF	%	85%	85%	85%	85%
Gross heat Rate	Kcal/kWh	2450	2450	2450	2450
Normative Sp. LDO Consumption	ml/kWh	1.00	1.00	1.00	1.00
Depreciation	Rs Crore	26.90	81.01	81.34	81.34
Interest on Loan	Rs Crore	53.55	154.18	143.96	132.77
O&M Expenses	Rs Crore	19.36	61.40	64.91	68.63
Return on Equity (Pre-Tax)	Rs Crore	32.37	97.67	98.22	98.22
Interest on working Capital	Rs Crore	8.67	28.03	26.64	24.79
LDO Expenses at Normative Availability	Rs Crore	4.23	12.68	12.68	12.72
Annual Fixed Charges	Rs Crore	**145.07**	**434.97**	**427.75**	**418.47**
Rate of Energy Charges	Rs/kWh	1.91	2.03	1.85	1.62
Energy charges	Rs Crore	**116.60**	**370.80**	**339.33**	**298.09**
Total Annual Revenue Requirement	Rs Crore	**261.67**	**805.77**	**767.08**	**716.56**

Table 6: Estimates for operational performance, fixed cost, energy charges and annual revenue requirement for FY 2013-14 to FY 2015-16 for Unit 2

Particulars	**Units**	**Projections for FY 2013-14**	**Projections for FY 2013-14**	**Projections for FY 2013-14**
Capacity	MW	270	270	270
No. of Months of Operation	Months	12	12	12
Gross Generation	MUs	2010	2010	2016
Aux Power Consumption	%	9.00%	9.00%	9.00%
Ex-Bus Generation	MUs	1829	1829	1834
NAPAF	%	85%	85%	85%
Gross heat Rate	Kcal/kWh	2450	2450	2450
Normative Sp. LDO Consumption	ml/kWh	1.00	1.00	1.00
Depreciation	Rs Crore	76.99	77.30	77.30
Interest on Loan	Rs Crore	154.50	144.61	133.79
O&M Expenses	Rs Crore	61.40	64.91	68.63
Return on Equity (Pre-Tax)	Rs Crore	93.51	94.05	94.05
Interest on working Capital	Rs Crore	27.85	26.47	24.63

Particulars	Units	Projections for FY 2013-14	Projections for FY 2013-14	Projections for FY 2013-14
LDO Expenses at Normative Availability	Rs Crore	12.68	12.68	12.72
Annual Fixed Charges	Rs Crore	**426.94**	**420.03**	**411.12**
Rate of Energy Charges	Rs/kWh	2.03	1.85	1.62
Energy charges	Rs Crore	**370.80**	**339.33**	**298.09**
Total Annual Revenue Requirement	Rs Crore	**797.74**	**759.36**	**709.21**

Tariff for supply of energy to JUVNL

3.4 The tariff for supply of Regulated Capacity to JUVNL (erstwhile JSEB) for the first Control Period at Normative Availability submitted by the Petitioner in it petition is summarised in the tables below:

Table 7: Fixed Charges and rate of Energy Charges for JUVNL for Unit 1

Particulars	Units	FY 2012-13 (for 4 months)	FY 2013-14	FY 2014-15	FY 2015-16
Capacity Charges for 13% of Capacity at 85% Plant Availability Factor	Rs Crore	21.43	64.26	63.19	61.82
Rate of Energy Charges	Rs/kWh	1.91	2.03	1.85	1.62

Table 8: Fixed Charges and rate of Energy Charges for JUVNL for Unit 2

Particulars	Units	FY 2013-14	FY 2014-15	FY 2015-16
Capacity Charges for 13% of Capacity at 85% Plant Availability Factor	Rs Crore	63.07	62.05	60.73
Rate of Energy Charges	Rs/kWh	2.03	1.85	1.62

3.5 The Petitioner has submitted additional information in subsequent submissions as mentioned in paragraph 2.9 which have also been considered by the Commission while passing this Order

A4: PUBLIC CONSULTATION PROCESS

Energy Charge

Public Comments/Suggestions

4.1 The objector has submitted that Energy Charge Rate computed as per the parameters submitted by the Petitioner in its Petition works out to be Rs 1.894/kWh, Rs 2.01/kWh, 1.84/kWh and Rs 1.612/kWh as against Rs 1.91/kWh, Rs 2.03/kWh, Rs 1.85/kWh and Rs 1.62/kWh for FY 2012-13, FY 2013-14, FY 2014-15 and FY 2015-16 respectively.

Petitioner's response

4.2 The Petitioner submitted that it has worked out the Energy Charge in accordance with the performance parameters norms specified by the Commission in JSERC, Generation Tariff Regulations 2010 and other operational parameters as mentioned in the Petition. As regards the variation in energy charge, the Petitioner has submitted that it has computed the energy charge as per the Tariff Formats specified by the Commission in the aforementioned Tariff Regulations.

4.3 It has further submitted that that the variation in energy charge as mentioned by the objector may be on account of non-consideration of transit loss by the objector. In this regard, the Petitioner submitted that as mentioned in the Petition that production from coal block is yet to be commenced and thus to ensure the adequate fuel availability, the Petitioner has to resort to various sources of coal procurement till the production from coal block does not attain its rated capacity. The Petitioner has considered normative transit loss as 0.8% for non-pit head generating stations in line with the Generation Tariff Regulations 2010 for computation of coal requirement. The detailed computation of energy charge is also provided in Form 3 (Unit 1) of the Petition.

4.4 The Petitioner further submitted that the *ex poste* computation of energy charges based on the actuals for the Fuel Price Adjustment (FPA) Bills were issued to JUVNL accordingly from Jan 2013 to Dec 2013.

Commission's view

4.5 The Commission has approved the energy charges in line with the Generation Tariff Regulations 2010. The details of the energy charges calculation can be found in Section A7:

Delay in coal mine operation

Public Comments/Suggestions

4.6 The objector submitted that the coal block was allocated to the Petitioner in 2009 and production from coal block will begin in May 2014. In this regard Principal Accountant General (PAG), Audit had shown concern and said that if Coal mine would have operative from January 2013 the year in which the power plant got commissioned, the rate of variable charge would be Rs 0.74 per unit.

Petitioner's response

4.7 The Petitioner submitted the updated status of the development of Coal Block in its petition. Ganeshpur Captive Coal Block was allotted by Ministry of Coal (MoC) jointly to M/s. Tata Steel Ltd. and M/s. Adhunik Power & Natural Resources Ltd (APNRL) vide MOC letter No. 13016/27.2008-CA-I dated: May 28, 2009. The Block is located in Latehar District of Jharkhand, one of the biggest left wing extremism zone in India and extremely Maoist prone area. Due to left wing extremism in this part of Jharkhand, very frequently they disrupt the various day to day works.

4.8 The Petitioner submitted that overcoming all these problems it has taken all statutory clearances required for opening the block including Forest Clearance and Environment Clearance. The only stumbling block for commencing production is Grant of Mining Lease. MOC has already granted approval under section 5(I) of MMDR Act 1957. Since Tata Steel has more than 10 sq. km coal lease in the state, additional approval under 6(I)(b) of MMDR Act is also required. This application is pending with MOC since May 2013, without any reason.

4.9 The delay in Normative Date of Production of coal from Ganeshpur coal block is due to unavoidable circumstances beyond the control of Company and with present scenario, it is expected to commence during 2015. The latest progress of Ganeshpur captive coal block as submitted by the Petitioner is given in the table below:

Milestone	Status
Mining Plan and Mine Closure Plan	Approved on 14.02.2011
Environment Clearance	EC granted on 28.06.2013. EC letter post Stage I grant of FC issued on 24.01.2014 for the Project.
Forest Clearance	1. Stage I Forest Clearance has been granted for Ganeshpur on 19.12.2013. 2. Compliance report for Stage I submitted. Queries received from forest department and reply is under progress. 3. Stage-II clearance awaited.
Grant of previous approval for Mining Lease under S. 5 (1) of MMDR Act	Granted on 28.02.2013. Letter on Previous approval issued by GoJ on 29.05.2013 After issue of EC from MoEF on 24.01.2014, application for execution of ML submitted to GoJ on 30.01.2014.
Mining Lease Execution	Application duly recommended by GOJ is pending with Ministry of Coal since May 2013 for approval under section 6(1)(b).

4.10 The Petitioner further submitted that recently Inter Ministerial Group (IMG) has reviewed the progress of the block on February 25, 2014 and they have allotted the company till November 2014 for obtaining Stage-II Forest Clearance.

4.11 Major works have been completed and various clearances have also been obtained from various agencies for commencement of production from Coal Block. It is expected that production from coal block will commence during 2015. The Petitioner submitted that delay in development in coal block is mainly due to factors which were not in the control of the Petitioner. Further, MoC has allotted Tapering Linkage to APNRL till the Coal block is developed, therefore, construing that the cheaper power is deprived is incorrect.

Commission's view

4.12 The Commission has gone through the details of progress of mines allocated to the Petitioner. The Commission directs the Petitioner to expedite the commencement of delivery of coal from the allocated coal mine. Further, the Commission directs the Petitioner the exercise due prudence at the time of procuring coal from alternate sources so as to minimize the burden on the consumers.

Fixed Cost

Public Comments/Suggestions

4.13 The objector submitted that fixed charge for Unit-1 and Unit-2 for FY 2012-13 and FY 2013-14 should be as shown in the Table below. However, the Petitioner has claimed AFC higher than 13%.

Generation Unit	Annual Fixed Charge	
	FY 2012-13	FY 2013-14
Unit 1	145x13%	434.97x13%
Unit 2	-	426.94x13%

Petitioner's response

4.14 The Petitioner submitted that as per the provisions of the MoU, the Petitioner has to supply the Contracted Capacity of 25% of Net Capacity i.e. 122.85 MW to JUVNL, i.e. 12% (58.968 MW) capacity at Variable Tariff and remaining 13% (63.882 MW) capacity at Total Tariff. Thus the Annual Fixed Charges for Unit-1 and Unit-2 are to be recovered from balance 88% of the net capacity of the plant, as 12% of the Energy is being supplied to Home State at Variable Tariff only.

4.15 The Petitioner submitted that the recovery of Annual Fixed Charge of hydro generating stations supplying Free Energy to Home State (FEHS) is allowed with the same methodology as adopted by the Petitioner for computing the Fixed Charges for 13% of energy being supplied at total tariff. Further CERC Tariff Regulations, 2014 also suggests the same methodology for recovery of Annual Fixed Charges of hydro generating stations supplying free energy to their home State. The relevant provision of the regulation is reproduced below:

"31. Computation and Payment of Capacity charge and Energy Charge for Hydro Generating Stations:

(1) The fixed cost of a hydro generating station shall be computed on annual basis, based on norms specified under these regulations, and shall be recovered on monthly basis under capacity charge (inclusive of incentive) and energy charge, which shall be payable by the beneficiaries in proportion to their respective allocation in the saleable capacity of the generating station, i.e., in the capacity excluding the free power to the home State:"

4.16 The computation of Annual Fixed Charges as submitted in the Petition is illustrated in the table below:

Table 9 Annual fixed charges submitted by the Petitioner

Description	Derivation	Unit	Unit 1		Unit 2
			FY 2012-13	FY 2013-14	FY 2013-14
Gross Capacity	A	MW	270	270	270
Auxiliary Consumption	B	%	9%	9%	9%
Net Capacity	C= A x (1-B)	MW	245.7	245.7	245.7
12% of net capacity for supply to JUVNL at Energy Charge	D= C x 12%	MW	29.484	29.484	29.484
Remaining Capacity from which Fixed Charges are to be recovered	E=C-D	MW	216.216	216.216	216.216
Total Annual Fixed Charge	F	Rs Crore	145.07	434.97	426.94
Annual Fixed Charges/MW	G=F/E	Rs Crore/MW	0.671	2.012	1.975
13% of Net Capacity for supply to JUVNL at full tariff	H= C x 13%	MW	31.941	31.941	31.941
AFC for 13% of Net Capacity	1= G x H	Rs Crore	21.43	64.26	63.07

Commission's view

4.17 The Petitioner signed a Memorandum of Understanding (MoU) with the Government of Jharkhand for establishment of a 1000 MW coal based thermal power plant in the State of Jharkhand on the October 31, 2005. The MoU was valid for a period of 12 months.

4.18 Under Clause 10.1 “Sale of Power” in the said MoU it was stated that the Government of Jharkhand or a distribution licensee authorized by it will have the first right of claim on 25% of the power generated. The relevant sub clause in the MoU is reproduced below:

“Clause 10.1 The Government of Jharkhand or distribution licensee authorized by it will have the first right of claim on purchase up to 25% of the power delivered to the system by the proposed power plant under the terms of a Power Purchase Agreement to be mutually agreed on the basis of existing laws and regulations in force and the tariff for such power purchase will be determined by the appropriate Regulatory Commission.”

4.19 The MoU was further extended by 12 months on January 8, 2007 with an additional clause regarding sale of power at variable cost. The additional clause of the MoU is quoted below:

“Clause 10.5 (a) A policy decision through suitable arrangements for making available to the State 12% of the total power generated at variable cost by ATEL operating within its territory.”

4.20 Pursuant to the MoU signed between Government of Jharkhand and APNRL, APNRL signed a Power Purchase Agreement (hereinafter also referred to as “the PPA”) with Jharkhand State Electricity Board (now Jharkhand Urja Vikash Nigam Limited or “JUVNL”) on September 28, 2012 for supplying contracted capacity of 122.85 MW (25% of 491.4 MW, i.e., Gross Capacity of 2 Units of 270 MW each, totaling to 540 MW less Normative Auxiliary Consumption) from Stage 1 of the Project on long term basis.

4.21 As per clause 3.1 (ii) and (iii) of the PPA entered into by the Petitioner quoted below and JSEB (now JUVNL) the tariff payable by JUVNL shall be determined by the State Commission:

3.1(ii)“The tariff for sale of power by seller to procurer for the contracted capacity of 63.882 MW shall be payable by the procurer as determined by JSERC in accordance with the “Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2010 as amended from time to time or any other competent authority authorized from time to time. The annual fixed charges determined in accordance with the “Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2010 shall be recoverable from the net saleable capacity of 432.432 MW (i.e. Gross capacity minus auxiliary consumption minus 12% power to be supplied to procurer at energy charge)”.

3.1(iii) The energy charge for sale of power by seller to procurer for the contracted capacity of 59.968 MW shall be payable by the procurer as determined by the JSERC in accordance with the “Jharkhand State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2010”, as amended from time to time.”

4.22 As per terms of the MoU and the PPA, 12% of total Net Capacity of Stage 1, i.e., 58.968 MW shall be supplied at variable cost only and 13% of Net Capacity of Stage 1, i.e., 63.882 MW shall be supplied to JSEB (now JUVNL) at total tariff to be determined by the Commission.

4.23 The Commission in this Order has determined the variable cost/ energy charges (per unit of net generation) applicable for Unit 1 and Unit 2. The Petitioner is required to provide 12% of total net capacity at such variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2010) only.

4.24 As can be seen from paragraph 4.21, the PPA between APNRL and JUVNL already stipulates that, after APNRL has supplied 12% power at energy charge, the annual fixed charges can be recovered from the remaining 88% power to be supplied.

4.25 Accordingly, the Commission has determined in this Order the Annual Fixed Charges for Unit 1 and Unit 2, which are to be recovered from balance 88% of the net capacity of the plant and should be shared by the beneficiaries in proportion to their respective allocation in the saleable capacity of the generating station.

4.26 A similar methodology is also followed by CERC and other State Commissions in case of hydro power plants where a certain proportion of power (12% or higher) is provided to the home state free of cost (Free Energy for Home State (FEHS)). The relevant Clauses of CERC (Terms and Conditions of Tariff) Regulations, 2014 are reproduced below:

"31 (1) The fixed cost of a hydro generating station shall be computed on annual basis, based on norms specified under these regulations, and shall be recovered on monthly basis under capacity charge (inclusive of incentive) and energy charge, which shall be payable by the beneficiaries in proportion to their respective allocation in the saleable capacity of the generating station, i.e., in the capacity excluding the free power to the home State:

...

(4) The energy charge shall be payable by every beneficiary for the total energy scheduled to be supplied to the beneficiary, excluding free energy, if any, during the calendar month, on ex power plant basis, at the computed energy charge rate. Total Energy charge payable to the generating company for a month shall be:

(Energy charge rate in Rs. / kWh) x {Scheduled energy (ex-bus) for the month in kWh} x (100 – FEHS) / 100

(5) Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis, for a hydro generating station, shall be determined up to three decimal places based on the following formula, subject to the provisions of clause (7): ECR = AFC x 0.5 x 10 / { DE x (100 – AUX) x (100 – FEHS)}"

4.28 The Commission also notes that in case the Annual Fixed Charges are not allowed to be recovered from the balance capacity of 88%, the generating company shall be unable to recover the fixed charges corresponding to 12% of the capacity and the same shall lead to significant reduction in its return on equity.

Capital cost of transmission system

Public Comments/Suggestions

4.29 The Objector submitted that the Petitioner has submitted that the capital cost of the dedicated transmission system will be recovered through tariff. In this regard it is submitted that the claim is not as per the power purchase agreement executed between JSEB and APNRL. The Objector further submitted that in case the cost of transmission system will be included in tariff, the cost may be passed to the consumer ultimately hence the consumer of Jharkhand will be penalized.

Petitioner's response

4.30 The Petitioner submitted that as per the clause No. 9.0 and 10.0 of the Memorandum of Understanding (MoU) (reproduced below) signed between APNRL and Govt. of Jharkhand for installation of 1000 MW Power Plant in two phases, it is liable to provide 25% of power to the distribution licensee in the state of Jharkhand.

"9.0 ***Evacuation***

The State Government will facilitate connecting the proposed power station to PGCIL Grid at a convenient point for evacuation of power from the proposed power station."

"10.0 ***Sale of Power***

10.1 The Government of Jharkhand or distribution licensees authorized by it will have the first right of claim on purchase up to 25% of power delivered to the system by the proposed Power Station under terms of a Power Purchase Agreement to be mutually agreed on the basis of existing laws and regulations in force and the tariff for such power purchase will be determined by the appropriate Regulatory Commission."

10.2 ATEL, now APNRL, will have the right to sell the balance power outside the state of Jharkhand.

10.3 In case the Government of Jharkhand or its designed licensee is unable to honor the term of the power purchase agreement above mentioned, then ATEL, now APNRL, will have the right to sell the entire power outside the State of Jharkhand.

10.4 In order to support the Industrial development in the state of Jharkhand, ATEL, now APNRL, can supply power directly to the bulk consumers within the state of Jharkhand at *mutually agreed tariff and term and conditions within the frame work of the applicable Laws and Regulation."*

4.31 The Petitioner submitted that the Point of Connection at JUVNL (JUVNL substation) and voltage level of transmission was not defined in MoU. Apart from this, JUVNL never approached the Petitioner before signing of the PPA for connectivity. Hence, it conceived the power station connectivity for power evacuation with CTU i.e. Ramchandrapur Power Grid substation at 400kV level for evacuation as per the MoU.

4.32 The Petitioner submitted that the PPA was signed with JUVNL on September 28, 2012 after implementation of Project. As per the Cause No. 1.1 of the PPA, the *"Dedicated Transmission System":*

"Shall means the transmission system to be developed by seller within two year from the CoD including 400KV transmission line from Power Station Bus-Bar upto JSEB's Ramchandrapur 220 KV sub-station. For development of Dedicated Transmission System the Capital Cost to be incurred at Seller's sub-station (including cost of additional bay, transformer etc.) and 400 KV transmission line till the JSEB's Ramchandrapur 220 KV sub-station shall be borne by the Seller and the Capital Cost to be incurred at Procurer's sub-station (including cost of additional bay, transformer, etc.) shall be borne by the Procurer."

4.33 Thus as per the Petitioner it is required to extend 400 kV existing AIS sub-station for Power transmission and 400 kV transmission line from APNRL substation to JUVNL sub-station. JUVNL is required to create a 400 kV substation which includes 02 Nos 250/315 MVA 400,220 kV ICT and further 220 kV systems to receive the power from APNRL. This shall facilitate JUVNL to reduce the losses and saving on injection and withdrawal charges which are presently being paid to PGCIL.

4.34 To evaluate the above system, a committee consisting of members from JUVNL and APNRL has been formed by JUVNL. The committee's recommendations are as below:

a) At present, JUVNL Ramchandrapur does not have any 400 kV system and apart from this, due to space constraint, committee recommended to install 2 Nos. transformers ICT at APNRL end and 220 kV cable to be laid from APNRL to JUVNL. JUVNL shall extend their existing 220 kV bus to accommodate incomer from APNRL.

b) APNRL to extend their 400 kV supplies by adding 02 Nos. bay of 400 kV to supply power to 2 x 250 / 315 MVA ICT, but, due to vicinity of PGCIL Switchyard, PGCIL transmission lines are passing from nearby APNRL 400 kV substation boundary. Therefore, it has become mandatory to extend the substation as GIS type instead of AIS.

4.35 The Petitioner submitted that in line with the recommendations of the committee, for direct connectivity from APNRL 400 KV BUS to 220 KV JUVNL Ramchandrapur Substation, it will need to create the following facilities.

a) Extension of bays in existing 400 KV switchyard with installation of new 400 KV GIS switchyard (The space is not available 400 KV switchyard with Air Insulated substation hence, extension of switchyard is possible with only 400 KV GIS).

b) Installation of interconnecting (400/220 KV) transformer.

c) Installation of 220 KV bays at APNRL substation.

d) 220 KV transmission line through 220 KV cable from APNRL switchyard o JUVNL Ramchandrapur switchyard (Transmission line through transmission tower is not feasible because of various transmission is passing in nearby area).

e) Installation of 220 KV bays at JUVNL Ramchandrapur substation.

4.36 The Petitioner submitted that since the above facilities are not a part of existing installation, hence the cost of same is not considered in the tariff petition.

4.37 The Petitioner submitted that in accordance with the above provision for evacuation of power in the MoU, it planned for evacuation of entire power through PGCIL network. A Bulk Power Transmission Agreement (PTA) was entered by APNRL with PGCIL on February 24, 2010 for 450 MW including 200 MW for Eastern Region. Accordingly, APNRL would have supplied power to JUVNL through PGCIL network under the BPTA executed with PGCIL. However at the time of finalization of PPA, JUVNL has raised this issue and informed APNRL to develop a dedicated transmission system separately for transferring power to JUVNL's 25% share of the net capacity. Therefore, it was discussed between the APNRL and JUVNL that for initial two years APNRL will supply power to JUVNL through PGCIL substation and subsequently from dedicated transmission line to JUVNL as and when it gets energized. Thus the cost of dedicated transmission line has not been included in the project cost submitted in the Petition. The Petition for determination of capital cost of transmission will be submitted separately.

4.38 The Petitioner submitted that the cost of dedicated transmission line needs to be considered as the tariff is being determined by the Commission under Section 62 following cost plus approach and hence the entire Capital Cost of the Project is to be considered. Non-consideration of capital cost of transmission line as part of Capital Cost will adversely impact the project cash flows and financial viability of supplying power to JUVNL.

Commission's view

4.39 The Commission notes with concern that the construction of the Dedicated Transmission System has not yet started. As per the Petitioner, JUVNL is yet to give clearance for certain technical parameters, pending which there shall be a further delay in construction of the Dedicated Transmission System. Pending the construction of the Dedicated Transmission System, power is being supplied to JUVNL through the PGCIL network. The Petitioner has informed the Commission during the Public Hearing that JUVNL has disputed the payment of injection charges for use of the PGCIL network.

4.40 With regard to construction of the Dedicated Transmission System (DTS), the Commission notes that the proposed dedicated transmission line is to be constructed because JUVNL has insisted upon this. The cost of this line will, necessarily, have to be passed on to the consumer. The Commission therefore believes that the rationale for construction of the DTS from the power station to JSEB's Ramchandrapur 220 KV sub-station should be a net reduction in the cost of power purchase to the consumers. The Commission directs JUVNL to carry out a cost benefit analysis of routing the power from the power station through the Dedicated Transmission System vis-à-vis routing the power through the CTU as is being done currently and submit a report regarding the same to the Commission within two months of issuance of this Order. The Commission considers this exercise necessary in the interest of minimizing the cost to the consumer.

4.41 With regards to the non-payment of injection charges by JUVNL, the Commission notes that as per the prevalent practice in the industry, transmission charges for procurement of power under the long term contract are to be borne by the procurer. The Commission directs that the injection charges must be paid by JUVNL.

4.42 The Commission directs the Petitioner and JUVNL to constitute a joint committee to resolve all the issues regarding the transmission of power from the power station to JUVNL. The committee should look into the need for the proposed Dedicated Transmission System, the technical configuration of the proposed line and the sharing of costs of the transmission line. The Petitioner and JUVNL should, after mutual discussions and agreement, arrive at a way forward vis-à-vis the issue of the Dedicated Transmission System, and should submit a status report regarding the same to the Commission within two months of issuance of this Order.

4.43 The Commission believes that both the parties should work towards resolution of issues and ensure that the end consumer is not harmed. The costs attributable to delay in construction of the Dedicated Transmission System shall not be passed onto the consumers.

A5: CAPITAL COST OF THE PROJECT

Petitioner's submission

5.1 The Petitioner in the petition dated November 1, 2012 submitted the total projected capital cost as on COD for Unit-1 and Unit-2 at Rs 3298.41 Cr. The major components of the capital cost submitted by the Petitioner are detailed hereunder:

a) Land and Site Development

b) Preliminary & Preoperative Expenses

c) Plant and Machinery

d) Civil Works & Infrastructure

e) Interest During Construction and Financing Charges

5.2 The break up summary of the total projected capital cost and the unit wise capital cost as submitted by the Petitioner in the Petition dated November 1, 2012 is shown in the table below:

Table 10 Summary of the Capital Cost submitted by the Petitioner (Rs Cr)

Particulars	Unit 1	Unit 2	Total Cost till CoD of the Project
	Estimated Cost till COD of the Project	Estimated Cost till COD of the Project	
Land and Land Development	39.8	48.79	88.59
Pre operative Expenses	137.06	135.99	273.05
Plant & Machinery	993.16	955.09	1,948.25
Civil Works and Infrastructure	219.02	221.02	440.04
Total Project Hard Cost	**1,389.04**	**1360.9**	**2,749.93**
Interest during Construction(IDC & Financing Charges)	294.01	254.47	548.48
Total Project Cost(Including IDC)	**1,683.05**	**1615.4**	**3,298.41**

5.3 The Petitioner in the petition dated November 1, 2012 submitted that the expected COD of Unit 1 as November, 2012 and Unit 2 as March, 2013. Subsequently, the Petitioner submitted that the actual COD of the plant was declared on January 21, 2013 for Unit 1 and on May 19, 2013 for Unit 2.

5.4 The Petitioner also submitted that the actual capital cost of the power plant at Rs 3337.45 Cr was higher than the capital cost projected in petition dated November 1, 2012. The revised capital cost of the power plant (as on COD) submitted by the Petitioner in the additional information subsequent to the commissioning of the plant it is shown in the table below:

Table 11 Revised Capital Cost (Rs Cr) submitted by the Petitioner

Particulars	Unit 1	Unit 2	Total
Land and Land Development	46.61	51.63	98.24
Pre operative Expenses	116.76	106.99	223.76
Plant & Machinery	1001.73	964.81	1966.54
Civil Works and Infrastructure	219.56	222.10	441.66
Total Project Hard Cost	**1384.67**	**1345.53**	**2730.20**
Interest during Construction(IDC & Financing Charges)	317.56	289.70	607.26
Total Project Cost(Including IDC)	**1702.23**	**1635.23**	**3337.46**

5.5 The Petitioner submitted that the increase in the capital cost of the plant by Rs 39.04 Cr over the capital cost projected in the petition dated November 1, 2012 was on account of the following reasons:

a) Increase in Land Cost by Rs 9.81 Cr – Reason for this increase is on account of continuous increase of land rate and land area, because of revised requirements of the project based on the recommendation of the World Bank-nominated consultant appointed by investors of the company namely, IDFC Project Equity & SBI Macquarie.

b) Increase in IDC by Rs 98.02 Cr – Increase in IDC is due to delay in COD on account of uncontrollable factors.

c) Increase in Plant and Machinery cost by Rs 18.12 Cr – Increase on account of escalation

5.6 The Petitioner also submitted that the Petitioner has endeavored to optimize the capital cost of the Project. For implementation of the Project, the Petitioner has opted for EPC and Non EPC mode of awarding contract to optimise the project cost, as implementing project through only EPC route leads to the higher cost because there would be a higher degree of risk of non-completion of project on scheduled time. Further the Petitioner endeavored to optimize the project cost through negotiation with various BOP vendors to award the contract on best competitive rates instead of placing an Order for entire BoP to a single contractor.

5.7 The Petitioner claims to have made a sincere effort to implement the Project on schedule. However, the implementation of the Project was delayed due to the reasons such as change in plant configuration due to adoption of proven technology and delay due to Land Acquisition.

Commission's Analysis

5.8 As per the provisions specified in Clause 7.3 of the Generation Tariff regulations, 2010 (quoted below), the Commission shall approve the capital cost of a power project based on the actual expenditure incurred by the developer (including IDC) upto COD subject to prudence check by the Commission.

"7.3 Capital cost for a Project shall include:

(a) the expenditure incurred or projected to be incurred, including interest during construction and financing charges, any gain or loss on account of foreign exchange risk variation during construction on the loan - (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed, - up to the date of commercial operation of the project, as admitted by the Commission, as admitted by the Commission after prudence check shall form the basis for determination of tariff;

(b) capitalised initial spares subject to the ceiling norms specified as under:

i. Coal-based/lignite fired thermal generating stations – 2.5 % of original project cost

ii. Gas Turbine/Combined Cycle thermal generating stations- 4.0% of original project cost

iii. Hydro Generating stations – 1.50% of the original project cost

Provided that where the benchmark norms for initial spares have been published as part of the benchmark norms for capital cost under first proviso to clause 7.4 of these Regulations, such norms shall apply to the exclusion of the norms specified herein.

(c) additional capital expenditure determined under clause 7.5 and 7.6 of theseRegulation

Provided that the assets forming part of the Project, but not in use shall be taken out of the capital cost:

7.4 The capital cost admitted by the Commission after prudence check shall form the basis for determination of tariff:

Provided that in case of the thermal generating station prudence check of capital cost may be carried out based on the benchmark norms to be specified by the Central Commission from time to time:

Provided further that in cases where benchmark norms have not been specified by the Central Commission, the Commission may specify the benchmark norms or allow the capital cost on the basis of a prudence check which shall include scrutiny of the reasonableness of the capital expenditure, financing plan, interest during construction, use of efficient technology, cost over-run and time over-run, and such other matters as may be considered appropriate by the Commission for determination of tariff:

Provided also that the Commission may issue guidelines for vetting of capital cost of hydro-electric projects by independent agency or expert and in that event the capital cost as vetted by such agency or expert may be considered by the Commission while determining the tariff for the hydro generating station:

...

Provided also that where the power purchase agreement entered into between the Generating Company and the Beneficiaries, provide for a ceiling of actual expenditure, the capital expenditure admitted the Commission shall take into consideration such ceiling for determination of tariff:"

5.9 The Petitioner submitted the revised capital cost of Unit 1 and Unit 2 as on COD at Rs 3337.45 Cr. In order to verify the actual expenditure incurred by the Petitioner, the Commission asked the Petitioner to submit the audited annual accounts for the power plant and the auditor's certification for capital cost of the project as on COD. In response, the Petitioner submitted the audited annual accounts for FY 2007-08 to FY 2012-13. The audited annual accounts for FY 2013-14 are however not available. The Petitioner also submitted the auditor's certificate for capital cost incurred as on COD i.e. Rs 3337.45 Cr.

5.10 The Commission observes that the audited annual accounts for the plant for FY 2013-14 i.e. the year in which the plant achieved COD as a whole are not available. Further, the auditor's certificate submitted by the Petitioner has not been given by the statutory auditor of the company. The Commission is therefore constrained to approve the capital cost of the power plant on a provisional basis. The Commission directs the Petitioner to file a petition for approval of final capital cost of the plant along with the audited accounts for the power plant for FY 2013-14 and statutory auditor's certificate for actual cost incurred upto COD. The Petitioner is also required to submit details of the final capital cost of the plant in the format specified in Annexure 2 for prudence check by the Commission.

5.11 For the purpose of this order, the Commission has provisionally approved the capital cost of the power plant on the basis of the actual cost incurred by the Petitioner as on COD. The Commission observed that the auditor's certificate for the capital cost includes capital works in progress of Rs 50.84 Cr and asked the Petitioner to clarify the nature of these expenses. In response, the Petitioner submitted:

"In reply to the query raised by the Commission vide letter dated May 5, 2014 regarding submission of Auditor's Certificate for the revised Capital Cost as on COD, APNRL submitted the CA certificate in which the Unit wise actual Capital cost as on COD is shown as Rs 3,337.46 Crore. In the actual project cost, amount of Rs 50.84 Crore has been shown under the head of Capital Work in Progress (CWIP). The rationale for considering Rs 50.84 Crore under the head of CWIP is that the work related to CWIP amount of Rs 50.84 Crore has been completed but the payment of few of the supplier/contractors has not been made as on COD and hence the same is shown as CWIP. In this regard, APNRL request the Hon'ble Commission to consider an amount of Rs 50.84 Crore as these are un-discharged liabilities but the work for the same has been completed as on COD."

5.12 The Commission notes that as per Clause 7.3 and 7.5 of the Generation Tariff Regulations, 2010 un-discharged liabilities are to be included as a part of the capital cost in the form of additional capitalization. Further, the nature of the expenses categorized as capital works in progress or un-discharged liabilities by the Petitioner is not clear. The Commission has therefore provisionally not included the same in the capital cost.

5.13 Based on the observations made above, the Commission provisionally approves capital cost for Unit 1 and Unit 2 of the power plant at Rs 1662.26 Cr and Rs 1624.37 Cr respectively. Accordingly, the total capital cost of Stage-I the project is provisionally approved at Rs 3286.62 Cr.

A6: BUSINESS PLAN

Petitioner's submission

6.1 The Petitioner has classified the Business Plan broadly into the following Categories:

a) Operation and Maintenance plan

b) Outage and Availability Plan

c) Generation Plan

d) Operational Performance Plan

e) Fuel Procurement Plan

Operation and Maintenance (O&M) Plan

Petitioner's submission

6.2 The Petitioner submitted that significant effort has been made to optimise the manpower requirement for operation and maintenance of the station through proper design, layout, control and instrumentation. The Petitioner submitted that it will deploy the optimum manpower required for sustainable operation of plant.

6.3 The plant is proposed to be headed by the General Manager who would look after the day-to-day work of the station. However, the operation of the plant will be the overall responsibility of Dy. General Manager (Operations) or any other official as authorized by the company who would directly report to the General Manager or the plant head.

6.4 The other activities including administrative, general services and miscellaneous maintenance will be under the control of General Manager and these duties would be headed by senior officials of respective functions.

Commission's Analysis

6.5 The Commission directs the Petitioner to ensure and undertake all necessary measures to facilitate the smooth operation and maintenance of the plant. The Commission has approved the operational and maintenance (O&M) expenses for the Petitioner based on the norms contained in Generation Tariff Regulations, 2010. The Petitioner should consider the O&M expenses approved in this Order as ceiling norms and should try to optimize such expenditure.

Outage and Availability Plan

Petitioner's submission

6.6 The Petitioner submits that the key requirement of the generating station is its availability. The outages of various Units are staggered and planned based on demand and criticality of the outage requirement. The Petitioner claims maintain the availability of both the Units above 85% during the Control Period. Further, availability of a generating Unit depends on the outages - both forced and planned - on the Units. While the forced outages can be minimised by having an effective operation and robust maintenance plan, however, the planned outages are statutory in nature and necessary for the smooth functioning of the Unit.

Commission's Analysis

6.7 The Commission expects the Petitioner to maintain a minimum availability of 85% in accordance with the norms mandated by Generation Tariff Regulations, 2010. The Commission has further dealt with Availability in paragraph 7.2 and 7.3 of this Order.

Generation Plan

Petitioner's submission

6.8 The Petitioner submits Business Plan taking cognizance of the fact that the generating station is in the process of commissioning and also the Petitioner has signed PPA with JSEB for the 122.85 MW capacity (25% of 491.4 MW, i.e., gross capacity of 2 Units of 270 MW each, totaling to 540 MW less normative auxiliary consumption). For generation planning, the Petitioner has considered the normative availability of 85%.

6.9 The Petitioner submitted generation plan as shown in Table 14 Gross generation submitted by the Petitioner for Unit 1 and Table 15 Gross generation submitted by the Petitioner for Unit 2

Commission's Analysis

6.10 The Commission expects the Petitioner to achieve a minimum plant load factor of 85%. The Commission has approved normative generation at 85% in paragraph 7.7 and 7.9 of this Order. The Petitioner should however make all attempts to achieve higher generation at an optimum cost. Higher generation by the Petitioner will help in reduction of power shortages and will benefit the consumers of the State.

Operational Performance Plan

Petitioner's submission

6.11 The Petitioner submitted the auxiliary consumption at 8.5% for both units throughout the control period. Further the Petitioner has incurred expenditure for induced draft cooling tower, hence the Petitioner claimed an additional 0.5% for the same.

6.12 The Petitioner submitted the Heat rate at 2450 kCal/kWh for both Unit 1 and Unit 2.

6.13 The Petitioner submitted the Secondary fuel oil consumption at 1 ml/kWh for Unit-1 & Unit-2 during the Control Period.

Commission's Analysis

6.14 The Commission has dealt with the above parameters in paragraph 7.14-7.16 of this Order.

Fuel Procurement Plan for Thermal Generating Station

Petitioner's submission

6.15 The Ministry of Coal has allotted the Ganeshpur coal block jointly to M/s Tata Steel Ltd. and the Petitioner on February 23, 2009 and the working agreement was signed on June 30, 2009.

6.16 The Petitioner and M/s Tata Steel Ltd. have agreed to develop the coal block with M/s Tata Steel Ltd. As the lead partner and the Petitioner as an associate partner. The Petitioner and M/s Tata Steel Ltd. have filed for mining lease application. The Petitioner further submitted that all clearances from the State Government, Forest Clearance clearances from Central Government are in progress. Mining Plan has been approved by Ministry of Coal and major activities related to environment and forest clearances have also been completed.

6.17 The Petitioner further submitted that production from coal block is expected to commence in January 2014. The Petitioner further submits that subject to the clearances and approvals to be obtained by the Petitioner, the production from coal block as submitted by the Petitioner may achieve rated annual capacity in 2007

6.18 The Petitioner in this Petition has proposed to adopt multi pronged approach to procure fuel. In order to ensure adequate fuel availability. The Petitioner submits that it has already executed fuel supply agreements with central coalfields limited. Further the Petitioner also proposes to procure the shortfall if any of the coal from domestic spot market, e-auction and coal washeries in the ratio of 65:25:10 for the first year and the Petitioner further submitted the coal mix as detailed in Table 18 Coal Mix during the Control Period submitted by the Petitioner and Table 19 Revised Coal Mix for the Control Period submitted by the Petitioner.

6.19 The Petitioner also submitted the following coal procurement plan:

Table 12 Coal Procurement Plan for Unit 1 submitted by the Petitioner

Particulars	Unit	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Gross generation	MU	670.14	2,010.42	2,010.42	2,015.93
Coal Requirement	MMT/Year	0.41	1.25	1.31	1.38
Coal Procurement from Tapering Coal Linkage from CIL	MMT/Year	0.27	0.61	0.42	0.22
Coal Procurement from Captive Block	MMT/Year	-	0.03	0.33	0.69
Coal Procurement from spot market	MMT/Year	0.10	0.48	0.42	0.33
Coal Procurement from washery rejects	MMT/Year	0.04	0.12	0.13	0.14

Table 13 Coal Procurement Plan for Unit 2 submitted by the Petitioner

Particulars	Unit	FY 2013-14	FY 2014-15	FY 2015-16
Gross generation	MU	2010	2010	2016
Coal Requirement	MMT/Year	1.25	1.31	1.38
Coal Procurement from Tapering Coal Linkage from CIL	MMT/Year	0.61	0.42	0.22
Coal Procurement from Captive Block	MMT/Year	0.03	0.32	0.69
Coal Procurement from spot market	MMT/Year	0.48	0.42	0.33
Coal Procurement from washery rejects	MMT/Year	0.12	0.13	0.14

Commission's Analysis

6.20 The Commission has gone through the details of progress of mines allocated to the Petitioner. The Commission directs the Petitioner to expedite the commencement of production of coal from the allocated coal mine. Further, the Commission directs the Petitioner the exercise due prudence at the time of procuring coal from alternate sources so as to minimize the burden on the consumers.

6.21 The Commission has also discussed its views regarding the coal mix to be used by the Petitioner in Section A7:

Capital Expenditure Plan

Petitioner's submission

6.22 The Petitioner submitted that it will construct a private railway sliding post COD of the plant, at plant end (Birirajpur railway station) and for the captive coal block end a public railway siding (Tori railway station) till Tori-Shivpuri-Hazaribagh line gets constructed. Additional cost to be incurred for constructing the private railway siding near the Petitioner's coal block will be constructed once the railway line connecting Tori-Shivpuri-Hazaribagh is constructed by Indian Railways which will be claimed later on by the Petitioner. The Petitioner further submitted that the work is expected to get completed in FY 2013-14 with the expenditure of Rs. 38.00 Cr with the apportionment among Unit 1 at Rs 19.39 Cr and Unit 2 at Rs 18.61 Cr.

6.23 The Petitioner has signed a PPA with JSEB which lays out that the Petitioner has to undertake a feasibility study for developing a dedicated transmission line from the Petitioner's sub-station to JSEB's nearest sub-station for transferring power to JSEB's 25% share of the total generated capacity. Hence, it was planned for initial two years, the Petitioner will supply power JSEB through PGCIL substation and subsequently from dedicated transmission line to JSEB as and when it gets energized .The capital cost for developing the exclusive transmission line to JSEB will be reimbursed by JSEB as a part of fixed charge in the total tariff for supplying 13% of electricity to JSEB. For development of Dedicated Transmission System, the capital cost to be incurred at Seller's sub-station (including cost of additional bay, transformer, etc) and 400 kV transmission line till the JSEB's Ramchandrapur 220 kV sub-Station is to be borne by the Petitioner and the Capital Costs to be incurred at JSEB's sub-station (including cost of additional bay, transformer, etc) shall be borne by the JSEB.

6.24 At this stage, the Petitioner has not included the capital cost of dedicated transmission system for supply of power to JSEB and the Petitioner in this Petition. Once the feasibility study of Dedicated Transmission System for supply of power to JSEB is completed and the cost is estimated, the Petitioner will include the capital cost of dedicated transmission system for recovery through tariff for supply of power corresponding to regulated capacity to JSEB in its subsequent regulatory filings.

6.25 The Petitioner further submits that because of the shortfall of coal supply from CCL / CIL, the Petitioner proposes to operate the plant by blending coal from Domestic Coal Linkage, Domestic Spot Market, e-auction and Washery Rejects to optimize the energy charge and thus the usage of inferior coal from various sources will lead to generation of higher quantity of ash and hence additional ash dyke requirement may be required for dumping additional ash generated from the inferior coal. In this regard, the Petitioner humbly requests the Commission that in case any additional capital expenditure is incurred for procurement of land and construction of ash dyke , the Petitioner will submit the same in subsequent regulatory filings.

Commission's Analysis

6.26 The Commission however directs that the Petitioner shall exercise prudence while incurring expenditure on additional capitalization. Further the Commission has provisionally approved additional capitalization for the plant for FY 2012-13 to fy 2015-16 in paragraph 7.46 of this order.

6.27 With regards to the additional capitalization for the Dedicated Transmission Line, the Commission has already expressed its views in paragraph 4.39 - 4.40 of this order.

6.28 The cost of the additional ash dyke requirement shall be considered by the Commission based on the submissions made by the Petitioner in the future tariff petitions including technical details, cost benefit analysis etc.

A7: TARIFF PROJECTIONS FOR FY 2012-13 TO FY 2015-16

Operational Parameters

Availability

Petitioner's submission

7.1 The Petitioner in the petition dated November 1, 2012 submitted that the availability for both Unit 1 and Unit 2 will be maintained at 85%.

Commission's Analysis

7.2 Clause 8.6 of the Generation Tariff Regulations, 2010 (quoted below) prescribes the norm for approving the availability of a new generating station.

"8.6 The norms of operation for generating stations other than existing stations shall be as under:

(a) Normative Annual Plant Availability Factor (NAPAF): All thermal generating stations, NAPAF shall be 85%."

7.3 Accordingly, the Commission approves availability for Unit 1 and Unit 2 at Normative Annual Plant Availability Factor i.e. at 85%.

Generation

Petitioner's submission

7.4 The Petitioner in the petition dated November 1, 2012 submitted that the generating station is in the process of commissioning and also the Petitioner has signed PPA with JSEB for the 122.85 MW capacity (25% of 491.4 MW, i.e., Gross Capacity of 2 Units of 270 MW each, totaling to 540 MW less Normative Auxiliary Consumption). For Generation planning, the Petitioner has considered the plant load factor equal to the normative availability of 85%.

7.5 The Petitioner also submitted that Unit-1 of the project is expected to get commissioned in November, 2012, accordingly gross generation has been estimated on pro-rata basis for 4 months of FY 2012-13 of COD of Unit 1 of the project. The projected generation submitted by the Petitioner in its petition dated November 1, 2012 is shown in the following table

Table 14 Gross generation submitted by the Petitioner for Unit 1

Particulars	Unit	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Unit 1	MW	270	270	270	270
Plant Availability Factor	%	85%	85%	85%	85%

Particulars	Unit	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
No. of Months of Operation	No.	4	12	12	12
Gross Generation	MU	670	2010	2010	2016

Table 15 Gross generation submitted by the Petitioner for Unit 2

Particulars	Unit	FY 2013-14	FY 2014-15	FY 2015-16
Unit 2	MW	270	270	270
Plant Availability Factor	%	85%	85%	85%
No. of Months of Operation	No.	12	12	12
Gross Generation	MU	2010	2010	2016

7.6 However the actual COD of Unit 1 was achieved on January 21, 2013 and that of Unit 2 was achieved on May 19, 2013. The Petitioner accordingly submitted the revised projections for gross generation as shown in the table below:

Table 16 Revised Generation plan submitted by the Petitioner based on actual COD of both units

Particulars	Unit	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Unit 1	MU	394.54	2010.42	2010.42	2015.93
Unit 2	MU	0.00	1745.71	2010.42	2015.93

Commission's Analysis

7.7 The Commission has considered the actual COD of Unit 1 and Unit 2, and a normative plant load factor of 85% for projecting the generation for the year in which the Units were commissioned. Accordingly, the generation for Unit 1 is approved at 380.05 MU for FY 2012-13 considering 69 days of operation and, for Unit 2 is approved at 1740.53 MU for FY 2013-14 considering 316 days of operation.

7.8 The Commission has approved the generation for FY 2013-14 to FY 2015-16 for Unit 1 and for the FY 2014-15 to FY 2015-16 for Unit 2 considering a normative plant load factor of 85%.

7.9 The table below shows the projected generation approved by the Commission for both the units:

Table 17 Gross Generation of both units approved by the Commission

Particulars	Submitted by APNRL	Revised submitted by the Petitioner	Approved by JSERC	Submitted by APNRL	Revised submitted by the Petitioner	Approved by JSERC
Generation(MU)	2012-13			2013-14		
Unit 1	670.14	394.54	380.05	2,010.42	2,010.42	2,010.42
Unit 2	-	-		2,010.42	1,745.71	1,740.53

Particulars	Submitted by APNRL	Revised submitted by the Petitioner	Approved by JSERC	Submitted by APNRL	Revised submitted by the Petitioner	Approved by JSERC
Generation(MU)	2014-15			2015-16		
Unit 1	2,010.42	2,010.42	2,010.42	2,015.93	2,015.93	2,015.93
Unit 2	2,010.42	2,010.42	2,010.42	2,015.93	2,015.93	2,015.93

Auxiliary Consumption, Station heat rate and Secondary Fuel Oil Consumption

Petitioner's submission

7.10 The Petitioner in the petition dated November 1, 2012, submitted that the auxiliary consumption both for Unit 1 and Unit 2 at 8.5% and additional 0.5% for induced draft cooling tower.

7.11 The Petitioner in the petition dated November 1, 2012 submitted that the Station Heat rate both for Unit 1 and Unit 2 at 2450 kCal/kWh.

7.12 The Petitioner in the petition dated November 1, 2012 submitted Secondary Fuel Oil Consumption for both for Unit 1 and Unit 2 at 1 ml/kWh.

Commission's Analysis

7.13 Clause 8.6 of the Generation Tariff Regulations, 2010 (quoted below) prescribes the norm for approving the operational parameters including auxiliary consumption, station heat rate and secondary fuel oil consumption of a generating station.

"Auxiliary Energy Consumption

*8.6(c) (i) **Coal Based generating Stations***

200 MW Series	*With Natural Draft cooling Tower or without cooling towers*	*8.50%*
500 MW Series- Steam Driven Boiler Feed Pumps	*With Natural Draft cooling Tower or without cooling towers*	*6%*
500 MW Series- Electrically driven Boiler Feed Pumps	*With Natural Draft cooling Tower or without cooling towers*	*8.50%*

Provided further that for thermal generating stations with induced draft cooling towers, the norms shall be further increased by 0.5%:

(*b) Gross Station Heat Rate:*

(i) Coal-based and lignite-fired Thermal Generating Stations = 1.065 X Design

Heat Rate (kCal/kWh)

Where, the Design Heat Rate of a unit means the unit heat rate guaranteed by the supplier at conditions of 100% MCR, zero percent make up, design coal and design cooling water temperature/back pressure.

Provided that the design heat rate shall not exceed the following maximum design unit heat rates depending upon the pressure and temperature ratings of the units:

Pressure Rating(kg/cm2	*150*	*170*	*170*	*247*	*247*
SHT/RHT (0C)	*535/535*	*537/537*	*537/565*	*537/565*	*565/593*
Type of BFP	*Electrical Driven*	*Turbine driven*	*Turbine Driven*	*Turbine Driven*	*Turbine Driven*
Max Turbine Cycle Heat rate (kCal/kWh)	*1955*	*1950*	*1935*	*1900*	*1850*
Min. Boiler Efficiency					
Sub-Bituminous Indian Coal	*0.85*	*0.85*	*0.85*	*0.85*	*0.85*
Bituminous Imported Coal	*0.89*	*0.89*	*0.89*	*0.89*	*0.89*
Max Design Unit Heat rate (kCal/kWh)					
Sub-Bituminous Indian Coal	*2300*	*2294*	*2276*	*2235*	*2176*
Bituminous Imported Coal	*2197*	*2191*	*2174*	*2135*	*2079*

Provided further that in case pressure and temperature parameters of a unit are different from above ratings, the maximum design unit heat rate of the nearest class shall be taken;

Provided also that where unit heat rate has not been guaranteed but turbine cycle heat rate and boiler efficiency are guaranteed separately by the same supplier or different suppliers, the unit design heat rate shall be arrived at by using guaranteed turbine cycle heat rate and boiler efficiency;

Provided also that if one or more units were declared under commercial operation prior to 1.4.2011, the heat rate norms for those units as well as units declared under commercial operation on or after 1.4.2012 shall be lower of the heat rate norms arrived at by above methodology and the norms as per clause 8.4 of these Regulations;

Note: In respect of units where the boiler feed pumps are electrically operated, the maximum design unit heat rate shall be 40 kCal/kWh lower than the maximum design unit heat rate specified above with turbine driven BFP.

...

(d) Secondary Fuel Oil Consumption for Coal based generating stations: 1.0 ml/kWh."

7.14 The Commission asked the Petitioner to corroborate the procurement of the induced draft of the cooling towers and the Petitioner submitted the purchase order of such procurement. After verifying the purchase order submitted by the Petitioner, the Commission approves the auxiliary consumption at normative level of 8.5% and an additional 0.5% for the induced cooling tower. Accordingly the Commission approves the Auxiliary Consumption at 9%.

7.15 As per regulation 8(i)(b) cited in paragraph 7.13 above, the Commission has determined the design heat rate considering the plant specifications mentioned in the performance guarantee provided by the manufacturer (M/s Bharat Heavy Electricals Ltd.) in "Annexure-B Performance Guarantee Schedule" of the services contract between the Petitioner and M/s Bharat Heavy Electricals Ltd. The manufacturer has guaranteed the Turbine Cycle Heat Rate (at 100% TMCR with zero percent make up) at 1943 kCal/kWh and boiler efficiency at 86.7% for both Unit 1 and Unit 2. The unit design heat rate has been arrived at 2241 kCal/kWh by using guaranteed turbine cycle heat rate and boiler efficiency. By multiplying the unit design heat rate with the factor specified in the said regulations i.e. 1.065, the Commission arrived at the heat rate of 2387 kCal/kWh and accordingly approves the same.

7.16 The Commission approves the Secondary Fuel Oil Consumption at 1 ml/kWh as specified in the regulation cited in paragraph 7.13 above.

Coal Mix, Coal Cost, Transit loss and GCV

Petitioner's submission

7.17 The Petitioner submitted that it has a captive coal block allotted along with Tata Steel vide letter no. 13016/27.2008-CA dated May 28, 2009.

7.18 To ensure fuel availability for the generating station till the production from coal block attains its rated capacity, the Petitioner has proposed to adopt multi-pronged approach for procurement of fuel. The Petitioner has executed Fuel Supply Agreements with Central Coalfields Limited with annual contract capacity of 0.99 MMT separately for Unit-1 and Unit-2. However, keeping in mind the gap between Coal India Limited (CIL) production targets and coal supply assured to the power sector in pursuance to the Presidential Directive issued in relation to coal supply to the IPPs, the Petitioner has also proposed to procure coal from domestic spot market, e-auction and coal washeries to meet shortfall of the coal requirement.

7.19 Thus, in case of shortfall of coal supply from CCL/CIL, the Petitioner proposed to operate the plant by blending coal from Domestic Coal Linkage, Domestic Spot Market, e-auction and Washery Rejects in the proportion of 65:25:10 for the first year. In its petition dated November 1, 2012, the Petitioner submitted that from the second year onwards of the Control Period, captive coal block is scheduled to commence operation partially and the projected coal mix by the Petitioner during the Control Period is given in the table below:

Table 18 Coal Mix during the Control Period submitted by the Petitioner

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Domestic Coal-Linkage	65.00%	48.75%	32.50%	16.25%
Captive Coal Allocation	0.00%	2.50%	25.00%	50.00%
Domestic Coal-Spot Market	25.00%	38.75%	32.50%	23.75%
Washery Rejects	10.00%	10.00%	10.00%	10.00%

7.20 In its subsequent submissions to the Commission, the Petitioner submitted the actual coal mix for FY 2012-13 and FY 2013-14. The Petitioner also submitted the revised figures for FY 2014-15 and FY 2015-16 as shown in the table below:

Table 19 Revised Coal Mix for the Control Period submitted by the Petitioner

Coal Mix	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Domestic Coal-Linkage	83.56%	63.59%	32.50%	16.25%
Captive Coal Allocation	0.00%	0.00%	0.00%	5.00%
Domestic Coal-Spot Market	16.44%	31.86%	52.95%	63.75%
Washery Rejects	0.00%	0.00%	10.00%	10.00%
Imported Coal	0.00%	4.55%	4.55%	5.00%

7.21 With regards to the landed cost of coal, the Petitioner in its petition dated November 1, 2012 submitted the projected landed cost of coal from various sources as shown in Table 20 below. In its subsequent submissions to the Commission, the Petitioner submitted the actual weighted average price of coal for FY 2012-13 and FY 2013-14. The Petitioner also submitted the revised figures for FY 2014-15 and FY 2015-16 as shown in the table below:

Table 20 Landed Cost of coal (Rs/MT) of Unit 1 submitted by the Petitioner

Particulars	As Per Petition	Revised submitted by the Petitioner	As Per Petition	Revised submitted by the Petitioner	As Per Petition	Revised submitted by the Petitioner	As Per Petition	Revised submitted by the Petitioner
	2012-13		2013-14		2014-15		2015-16	
Domestic Coal-Linkage	2565	2891	2565	2875	2565	2873	2565	2873

Particulars	As Per Petition	Revised submitted by the Petitioner	As Per Petition	Revised submitted by the Petitioner	As Per Petition	Revised submitted by the Petitioner	As Per Petition	Revised submitted by the Petitioner
	2012-13		2013-14		2014-15		2015-16	
Captive Coal Allocation	1200	-	1200	-	1200	-	1200	1200
Domestic Coal-Spot Market	3711	2887	3711	3295	3711	3293	3711	3293
Washery Rejects	2589	-	2589	-	2589	1667	2589	1667
Imported Coal	-	-	-	4664	-	4698	-	4698

Table 21 Landed Cost of coal (Rs/MT) of Unit 2 submitted by the Petitioner

Particulars	As Per Petition	Revised submitted by the Petitioner	As Per Petition	Revised submitted by the Petitioner	As Per Petition	Revised submitted by the Petitioner
	2013-14		2014-15		2015-16	
Domestic Coal-Linkage	2565	2870	2565	2873	2565	2873
Captive Coal Allocation	1200	-	1200	-	1200	1200
Domestic Coal-Spot Market	3711	3289	3711	3293	3711	3293
Washery Rejects	2589	1667	2589	1667	2589	1667
Imported Coal	-	4744	-	4698	-	4698

7.22 With regards to the GCV of coal, the Petitioner in its petition dated November 1, 2012 submitted the projected GCV of coal from various sources as shown in Table 26 and Table 27. In its subsequent submissions to the Commission, the Petitioner submitted the actual weighted average GCV of coal for FY 2012-13 and FY 2013-14. The Petitioner also submitted the revised figures for FY 2014-15 and FY 2015-16. The Petitioner submitted that it has raised the bills based on energy charge for energy supplied during FY 2012-13 and FY 2013-14 as submitted in the petition and separate bill was raised for variation in fuel prices and calorific value on monthly basis.

Commission's Analysis

7.23 The Petitioner has been allotted a captive coal block allotted along with Tata Steel for supply of coal to the power plant. As per the latest information submitted by the Petitioner, production from the coal block is expected to commence only from 2015. In the meanwhile, the Petitioner has obtained a tapering coal linkage from CCL/CIL. It has further proposed that the shortfall in coal supply from CCL/CIL shall be made for by blending coal from Domestic Coal Linkage, Domestic Spot Market, e-auction and Washery Rejects and Imported Coal.

7.24 The Commission notes that use of coal from the captive coal block allotted to the Petitioner shall result in reduction in the coal cost and shall be beneficial to the consumers of the state. The Commission directs the Petitioner to expedite the development of the coal block and submit monthly reports regarding the same to the Commission.

7.25 Meanwhile, the Commission observes that the Petitioner primarily used domestic coal from the CCL linkage and spot market to meet its coal requirements during FY 2012-13 and FY 2013-14. The percentage of coal requirement met through the CCL linkage was 83.56% in FY 2012-13 and 63.59% in FY 2013-14. The Petitioner has also used imported coal in FY 2013-14.

7.26 The Commission provisionally approves the coal mix for FY 2012-13 equal to the actual coal mix achieved by the Petitioner during the year. Further, the Commission has approved coal mix for FY 2013-14, FY 2014-15 and FY 2015-16 considering actual coal mix (other than the imported coal) utilized during FY 2013-14. Accordingly, the Commission provisionally approves a coal mix of 65% and 35% for domestic coal from CCL linkage and spot market respectively for projection of the base energy charges.

Table 22 Coal Mix for FY 2012-13 and FY 2013-14 approved by the Commission

Coal Mix	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	2012-13			2013-14		
Domestic Coal-Linkage	65.00%	83.56%	83.56%	48.75%	63.59%	65.00%
Captive Coal Allocation	0.00%	0.00%	0.00%	2.50%	0.00%	0.00%
Domestic Coal-Spot Market	25.00%	16.44%	16.44%	38.75%	31.86%	35.00%
Washery Rejects	10.00%	0.00%	0.00%	10.00%	0.00%	0.00%
Imported Coal	0.00%	0.00%	0.00%	0.00%	4.55%	0.00%

Table 23 Coal Mix for FY 2014-15 and FY 2015-16 approved by the Commission

Coal Mix	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	2014-15			2015-16		
Domestic Coal-Linkage	32.50%	32.50%	65.00%	16.25%	16.25%	65.00%
Captive Coal Allocation	25.00%	0.00%	0.00%	50.00%	5.00%	0.00%
Domestic Coal-Spot Market	32.50%	52.95%	35.00%	23.75%	63.75%	35.00%
Washery Rejects	10.00%	10.00%	0.00%	10.00%	10.00%	0.00%
Imported Coal	0.00%	4.55%	0.00%	0.00%	5.00%	0.00%

7.27 The Commission further notes that in view of the shortage of domestic coal the Petitioner may have to utilize coal from other sources including imported coal to achieve the targeted generation. The Central Electricity Regulatory Commission (CERC) has also recognized the requirement of blending of coal and has including provisions for the same in CERC (Terms and Conditions of Tariff) Regulations, 2014. The relevant clauses of the said regulation are quoted below:

"30 (10) In case of part or full use of alternative source of fuel supply by coal based thermal generating stations other than as agreed by the generating company and beneficiaries in their power purchase agreement for supply of contracted power on account of shortage of fuel or optimization of economical operation through blending, the use of alternative source of fuel supply shall be permitted to generating station:

Provided that in such case, prior permission from beneficiaries shall not be a precondition, unless otherwise agreed specifically in the power purchase agreement:

Provided further that the weighted average price of use of alternative source of fuel shall not exceed 30% of base price of fuel computed as per clause (11) of this regulation:

Provided also that where the energy charge rate based on weighted average price of use of fuel including alternative source of fuel exceeds 30% of base energy charge rate as approved by the Commission for that year or energy charge rate based on weighted average price of use of fuel including alternative sources of fuel exceeds 20% of energy charge rate based on based on weighted average fuel price for the previous month, whichever is lower shall be considered and in that event, prior consultation with beneficiary shall be made not later than three days in advance."

7.28 Accordingly, the Commission directs the Petitioner that in case where the energy charge rate based on weighted average price of use of fuel including alternative source of fuel (other than coal through CCL linkage) exceeds 30% of base energy charge rate as approved by the Commission in this Order or energy charge rate based on weighted average price of use of fuel including alternative sources of fuel exceeds 20% of energy charge rate based on weighted average fuel price for the previous month (whichever is lower), prior consultation with JUVNL should be made not later than three days in advance.

7.29 With regards to landed cost of coal, as per Generation Tariff Regulations, 2010, the landed price of coal includes the following:

"8.19 The landed cost of coal shall include:

(a) Base cost of coal;

(b) Royalty;

(c) Taxes and duties;

(d) Transport cost by rail / ocean / road / pipeline or any other means; and

(e) Clean energy cess as per Ministry of Coal, Govt. of India Notification.

....

For the purpose of computing energy charges, landed cost of coal shall be arrived at after considering normative transit and handling loss of 0.8% on the quantity of coal dispatched by the coal supplier in case of non-pit-head generating stations and 0.2% on the quantity of coal dispatched by the coal supplier in case of pit-head generation stations."

7.30 Further, as per Clause 7.37 of Generation Tariff Regulations, 2010, "*the cost of fuel in cases covered ... shall be based on the landed cost incurred (taking into account normative transit and handling losses) by the Generating Company and gross calorific value of the fuel as per actual for the three months preceding the first month for which tariff is to be determined and no fuel price escalation shall be provided during the tariff period."*

7.31 Since the plant became operational only in the last quarter of FY 2012-13, the Commission has projected the base value of landed cost of coal and GCV on the basis of the actual figures submitted by the Petitioner for FY 2012-13 for Unit 1 and Unit 2. The landed cost of coal and GCV provisionally approved by the Commission is shown in the Table 24 to Table 27 below.

7.32 The Commission approves normative transit loss of 0.8% for coal procured from domestic sources (other than coal obtained from captive coal block) in accordance with Generation Tariff Regulations, 2010. The Commission also notes that the Central Commission, in the CERC (Terms and Conditions of Tariff) Regulations, 2014, has set a norm of 0.2% for transit loss on imported coal. The Commission approves the same for any imported coal that may be used by the plant subject to the conditions mentioned in paragraph 7.28 of this Order.

Table 24 Coal Cost (Rs/MT) of Unit 1 approved by the Commission

Particulars	As Per Petition	Revised submitted by the Petitioner*	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner*	Approved by JSERC
	2012-13			2013-14		
Domestic Coal-Linkage	2565	2891	2914*	2565	2875	2914*
Captive Coal Allocation	1200	-	-	1200	-	-
Domestic Coal-Spot Market	3711	2887	2910*	3711	3295	2910
Washery Rejects	2589	-	-	2589	-	-
Imported Coal	-	-	-	-	4664	-

Particulars	As Per Petition	Revised submitted by the Petitioner*	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner*	Approved by JSERC
	2014-15			2015-16		
Domestic Coal-Linkage	2565	2873	2914*	2565	2873	2914*
Captive Coal Allocation	1200	-	-	1200	1200	-
Domestic Coal-Spot Market	3711	3293	2910	3711	3293	2910
Washery Rejects	2589	1667	-	2589	1667	-
Imported Coal	-	4698	-	-	4698	-

Table 25 Coal Cost (Rs/MT) of Unit 2 approved by the Commission

Particulars	As Per Petition	Revised submitted by the Petitioner*	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner*	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner*	Approved by JSERC
	2013-14			2014-15			2015-16		
Domestic Coal-Linkage	2565	2870	2914	2565	2873	2914	2565	2873	2914
Captive Coal Allocation	1200	-	-	1200	-	-	1200	1200	-
Domestic Coal-Spot Market	3711	3289	2910	3711	3293	2910	3711	3293	2910
Washery Rejects	2589	1667	-	2589	1667	-	2589	1667	-
Imported Coal	0	4744	-	-	4698	-	-	4698	-

**The landed cost of coal approved by the Commission is higher because the cost of coal submitted by the Petitioner does not include transit loss whereas the Commission has included the same in its calculations.*

Table 26 GCV (Kcal/L) of coal for Unit 1 approved by the Commission

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner*	Approved by JSERC
	2012-13			2013-14		
Domestic Coal-Linkage	4,300	3,469	3,469	4,300	3,734	3,469
Captive Coal Allocation	3,400	-	-	3,400	-	-
Domestic Coal-Spot Market	4,000	4,056	4,056	4,000	3,165	4,056
Washery Rejects	2,400	-	-	2,400	-	-
Imported Coal	-	-	-	-	3,723	-

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	2014-15			2015-16		
Domestic Coal-Linkage	4,300	3,753	3,469	4,300	3,754	3,469
Captive Coal Allocation	3,400	-	-	3,400	3,400	-
Domestic Coal-Spot Market	4,000	3,192	4,056	4,000	3,192	4,056
Washery Rejects	2,400	2,647	-	2,400	2,647	-
Imported Coal	-	3,723	-	-	3,723	-

Table 27 GCV (Kcal/L) of coal for Unit 2 approved by the Commission

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	2013-14			2014-15			2015-16		
Domestic Coal-Linkage	4,300	3,774	3,469	4,300	3,753	3,469	4,300	3,754	3,469
Captive Coal Allocation	3,400	-	-	3,400	-	-	3,400	3,400	-
Domestic Coal-Spot Market	4,000	3,235	4,056	4,000	3,192	4,056	4,000	3,192	4,056
Washery Rejects	2,400	2,647	-	2,400	2,647	-	2,400	2,647	-
Imported Coal	-	3,724	-	-	3,723	-	-	3,723	-

7.33 The Commission shall also true up the fuel cost of the Petitioner for FY 2012-13 and FY 2013-14 taking into account the actual coal cost incurred by the Petitioner after due prudence check.

Base Energy Charge Rate (ECR) and Cost of Primary Fuel

Petitioner's submission

7.34 The Petitioner has in the Petition dated November 1, 2012 projected the energy charge for the control period FY 2012-13 to FY 2015-16 of both units as below:

Table 28 Energy Charge Rate submitted by the Petitioner for Unit 1

Particulars	Uom	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Operational Parameters					
Normative Aux Consumption	%	9%	9%	9%	9%
Heat Rate	kCal/ kWh	2450	2450	2450	2450

Particulars	Uom	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Specific Oil Consumption	ml/kWh	1.00	1.00	1.00	1.00
Calorific Value of Oil	kCal/Kg	10000	10000	10000	10000
Conversion factor	kg/L	0.92	0.91	0.91	0.91
Calorific Value of Oil	kCal/L	9100	9100	9100	9100
Coal					
Weighted Average Calorific Value of Indian Coal	kCal/kg	4035	3971	3788	3589
Weighted Average cost of Indian Coal	Rs/Tonne	2,854	2977	2599	2157
Energy Charge rate	Rs/kWh	1.91	2.03	1.85	1.62

Table 29 Energy Charge Rate submitted by the Petitioner for Unit 2

Particulars	Uom	FY 2013-14	FY 2014-15	FY 2015-16
Operational Parameters				
Normative Aux Consumption	%	9%	9%	9%
Heat Rate	kCal/ kWh	2450	2450	2450
Specific Oil Consumption	ml/kWh	1.00	1.00	1.00
Calorific Value of Oil	kCal/Kg	10000	10000	10000
Conversion factor	kg/L	0.91	0.91	0.91
Coal				
Weighted Average Calorific Value of Indian Coal	kCal/kg	3971	3788	3589
Weighted Average cost of Indian Coal	Rs/Tonne	2977	2599	2157
Energy Charge rate	Rs/kWh	2.03	1.85	1.62

7.35 In its subsequent submissions, the Petitioner, on the basis of actual cost and GCV for FY 2012-13 and FY 2013-14, submitted the revised figures of energy charge rate for the control period FY 2012-13 to FY 2015-16 for both units. The revised submission of the petitioner is shown in the table below:

Table 30 Revised Energy Charge Figures for Unit 1

Particulars	Uom	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Operational Parameters					
Normative Aux Consumption	%	9%	9%	9%	9%
Heat Rate	kCal/ kWh	2450	2450	2450	2450
Specific Oil Consumption	ml/kWh	1	1	1	1
Calorific Value of Oil	kCal/Kg	10000	10000	10000	10000
Conversion factor	kg/L	0.92	0.91	0.91	0.91
Calorific Value of Oil	kCal/L	9100	9553	9553	9553
Coal					
Weighted Average Calorific Value of	kCal/kg	3566	3519	3329	3253

Particulars	Uom	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Indian Coal					
Weighted Average cost of Indian Coal	Rs/Tonne	2891	3092	3057	3027
Energy Charge rate	Rs/kWh	2.19	2.38	2.48	2.52

Table 31 Revised Energy Charge Figures for Unit 2

Particulars	Uom	FY 2013-14	FY 2014-15	FY 2015-16
Operational Parameters				
Normative Aux Consumption	%	9%	9%	9%
Heat Rate	kCal/ kWh	2450	2450	2450
Specific Oil Consumption	ml/kWh	1	1	1
Calorific Value of Oil	kCal/Kg	10000	10000	10000
Conversion factor	kg/L	0.91	0.91	0.91
Calorific Value of Oil	kCal/L	9553	9553	9553
Coal				
Weighted Average Calorific Value of Indian Coal	kCal/kg	3624	3329	3253
Weighted Average cost of Indian Coal	Rs/Tonne	3034	3057	3027
Energy Charge rate	Rs/kWh	2.26	2.48	2.52

Commission's Analysis

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

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

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

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

(a) For coal based stations

ECR = (GHR – SFC x CVSF) x LPPF x 100/ {CVPF x (100 – AUX)}

Where, AUX - Normative auxiliary energy consumption in percentage

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

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

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

GHR - Gross station heat rate, in KCal per kWh.

LPPF - Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable, during the month.

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

7.38 The Commission notes that the Petitioner, while calculating ECR, considered the cost of coal without including the transit loss of coal, and later grossed up ECR by 0.80%. This calculation is not in accordance with the Generation Tariff Regulations, 2010. As per the formula specified in the said regulations, the landed cost of coal, inclusive of any transit loss, shall be used for calculation of ECR. Further, no grossing up of ECR by transit loss is required.

7.39 Accordingly, the Commission has calculated the base ECR for the Control Period as per the formula stated above and after considering the operational parameters as approved in this order. The table below contain the base ECR approved by the Commission for the period FY 2012-13 to FY 2015-16

Table 32 Approved Energy Charge Rate for Unit 1

Parameters	UoM	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
		FY 2012-13			FY 2013-14		
Gross Generation	MU	670.14	394.54	380.05	2010.42	2010.42	2010.42
Heat Rate	KCal/kWh	2450	2450	2387	2450	2450	2387
Specific Oil Consumption	ml/kWh	1.00	1.00	1.00	1.00	1.00	1.00
Calorific Value of Oil	KCal/l	9100	9553	9553	9100	9553	9553
Weighted average cost of coal	Rs/MT	2854	2890	2913	2977	3090	2913
Weighted average GCV of coal	kCal/L	4035	3566	3566	3971	3550	3674
Energy Charge Rate	**Rs/kWh**	**1.91**	**2.19**	**2.134**	**2.03**	**2.35**	**2.071**

Parameters		As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
		FY 2014-15			FY 2015-16		
Gross Generation	MU	2010.42	2010.42	2010.42	2015.93	2015.93	2,015.93
Heat Rate	KCal/kWh	2450	2450	2,387	2450	2450	2,387
Specific Oil Consumption	ml/kWh	1.00	1.00	1.00	1.00	1.00	1.00
Calorific Value of Oil	KCal/l	9100	9553	9,553	9100	9553	9,553
Weighted average cost of coal	Rs/MT	2599	3058	2,913	2157	3028	2,913
Weighted average GCV of coal	kCal/L	3788	3348	3,674	3589	3270	3,674
Energy Charge Rate	**Rs/kWh**	**1.850**	**2.47**	**2.071**	**1.620**	**2.510**	**2.071**

Table 33 Approved Energy Charge Rate for Unit 2

Parameters	UoM	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
		FY 2013-14			FY 2014-15			FY 2015-16		
Gross Generation	MU	2010.42	1745.71	1,740.53	2010.42	2010.42	2,010.42	2015.93	2015.93	2,015.93
Heat Rate	KCal/kWh	2450	2450	2,387	2450	2450	2,387	2450	2450	2,387
Specific Oil Consumption	ml/kWh	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Calorific Value of Oil	KCal/l	9100	9553	9,553	9100	9553	9,553	9100	9553	9,553
Weighted average cost of coal	Rs/MT	2977	3089	2,913	2599	3058	2,913	2157	3028	2,913
Weighted average GCV of coal	kCal/L	3971	3628	3,674	3788	3344	3,674	3589	3266	3,674
Energy Charge Rate	**Rs/kWh**	**2.03**	**2.26**	**2.071**	**1.85**	**2.48**	**2.071**	**1.62**	**2.52**	**2.071**

7.40 The Energy Charge Rate (ECR) approved by the Commission as above shall be the base energy charge rate for the year. Any variation in fuel prices on account of change in the Gross Calorific Value (GCV) of coal shall be adjusted on a monthly basis on the basis of weighted average GCV of coal in stock, received and burnt, and weighted average landed cost incurred by the Petitioner for procurement of coal, utilizing the fuel price adjustment mechanism given in the Generation Tariff Regulations, 2010.

Determinants of Fixed Charges

Additional Capitalisation

Petitioner's submission

7.41 In its petition dated November 1, 2012, the Petitioner submitted additional capitalisation at Rs 38 Cr under the head of works deferred for execution. In its subsequent submission to the Commission the Petitioner submitted that to bring better availability and enhance reliability to further improve cost effectiveness of generation of electricity, it is pertinent to implement the additional facilities.

7.42 The brief details of revised additional capitalisation submitted by the Petitioner are as follows:

a) Additional Water Reservoir: In case of non-availability of water due to any breakdown in 8KM stretch of water transporting system to meet full demand, another additional 30 days storage along with raw water pumping system to be developed to ensure utmost reliability for the power plant.

b) Gated Weir on Subarnarekha river: Construction of gated weir which will ensure the availability of water for the power station even at any adverse condition/scarcity of water. It is known that the level of water in the area is going down day by day, thereby it is a threat for the reliable operation of the plant.

c) Critical Spares: For continuous and trouble free operation, plant need to have adequate critical spares available for any break down/emergencies.

d) Brick Manufacturing Plant: As per the environmental clearance received from the ministry of environment & forest, the Petitioner has to utilise 100% fly ash generated from the plant from 4th year of its operation. Hence to comply with this requirement, the Petitioner has to set up a brick manufacturing plant.

e) Bottom Ash Handling System including Dewatering bin to feed HCSD System: As per the environmental clearance received from the ministry of environment & forest, the Petitioner has to establish HCSD system to dispose the fly ash and bottom ash into the ash pond.

7.43 The Petitioner has submitted a total revised additional capitalisation of Rs 211.18 Cr. The breakup of the additional capitalisation and its phasing as submitted by the Petitioner is shown in the table below:

Table 34 Break up of additional Capitalisation

Particulars	Cost (Rs Cr)
Reservoir Construction	40.00
Grated Weir Construction	39.32
Critical Spares	30.59
Brick Making Plant	4.00
Bottom ash handling system including dewatering bin to feed HCSD system	26.54
Total Hard Cost	**140.45**
Land & Site Development	9.50
Railway Sliding	61.23
Total Cost	**211.18**

Table 35 Scheduled Phasing of the additional Capitalisation (Rs Cr)

Phasing of Additional Capitalisation	FY 2014-15	FY 2015-16
Unit 1	**106.02**	
Unit 2		**105.16**

Commission's Analysis

7.44 The Commission has outlined the provisions for approval of any additional capitalization, for a generating station in Clause 7.5 and 7.6 of the Generation Tariff Regulation, 2010. The clause is outlined below

Additional Capitalisation

'7.5 The capital expenditure incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:

(i) Undischarged liabilities;

(ii) Works deferred for execution;

(iii) Procurement of initial capital spares within the original scope of work, subject to the provisions under clause 7.3,7.4 of these Regulations;

(iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and

(v) Change in law.

Provided that the details of works included in the original scope of work along with estimates of expenditure, undischarged liabilities and the works deferred for execution shall be submitted along with the application for determination of tariff.

'7.6 The capital expenditure incurred on the following counts after the cut-off date may, in its discretion, be admitted by the Commission, subject to prudence check:

(i) Liabilities to meet award of arbitration or for compliance of the order or decree of a court;

(ii) Change in law;

(iii) Deferred works relating to ash pond or ash handling system in the original scope of work;

(iv) Any additional works/services which have become necessary for efficient and successful operation of the generating station, but not included in the original project cost;"

7.45 As per the definition of the cut-off date defined under the Generation Tariff Regulations, 2010,

"Cut off Date" means 31st March of the year closing after two years of the year of commercial operation of the project, and in case the project is declared under commercial operation in the last quarter of a year, the cut-off date shall be 31st March of the year closing after three years of the year of commercial operation;

7.46 As per the aforementioned provisions of the Generation Tariff Regulations, 2010, the Commission may approve additional capitalisation for any expenditure that has become necessary for efficient running of the plant. Accordingly, the Commission provisionally approves additional capitalisation for Unit 1 and Unit 2 as shown in Table 36. The Commission has also considered the phasing of capitalization as submitted by the Petitioner.

Table 36 Approved additional capitalisation for Unit 1 and Unit 2

Particulars	Cost (Rs Cr)
Reservoir Construction	40.00
Grated Weir Construction	39.32
Critical Spares	30.59
Brick Making Plant	4.00
Bottom ash handling system including dewatering bin to feed HCSD system	26.54
Total Hard Cost	**140.45**
Land & Site Development	9.50
Railway Sliding	61.23
Total Cost	**211.18**

7.47 The Petitioner is, however, directed to submit to the Commission the detailed project report and cost benefit analysis of each of the schemes prior to taking up the scheme for execution.

Depreciation

Petitioner's submission

7.48 In its petition dated November 1, 2012, the Petitioner submitted the depreciation for Unit 1 and Unit 2 on pro rata basis considering the COD of Unit 1 and Unit 2 in the months of November 2012 and March 2013 respectively. The depreciation submitted by the Petitioner is given in the table below:

Table 37 Depreciation (Rs Cr) submitted by the Petitioner for both units

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Unit 1	26.90	81.01	81.34	81.34
Unit 2	-	76.99	77.30	77.30

7.49 Further the Petitioner has revised the calculation of depreciation based on the actual capital cost and actual COD of Unit 1 which occurred on January 21, 2013 and for Unit 2 on May 19, 2013. The revised depreciation submitted by the Petitioner is given in the table below:

Table 38 Revised Depreciation (Rs Cr) submitted by the Petitioner for both Units

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Unit 1	15.94	81.24	83.64	86.04
Unit 2	-	67.27	77.47	79.86

Commission's Analysis

7.50 The provisions laid out in the Generation Tariff Regulations, 2010 for approval of Depreciation are given below:

"7.28 Depreciation shall be calculated for each year of the tariff period, on the amount of Capital Cost of the assets admitted by the Commission;

Provided that depreciation shall not be allowed on assets funded by any capital subsidy / grant

7.29 The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.

7.31 Depreciation shall be calculated annually based on 'Straight Line Method' and at rates specified in Appendix-I to these Regulations for the assets of the generating station."

7.33 Depreciation shall be chargeable from the first Year of commercial operation. In case of commercial operation of the asset for part of the Year, depreciation shall be charged on pro rata basis.

7.51 Accordingly, the Commission calculated the depreciation for Unit 1 and Unit 2 by considering the provisionally approved capital cost, additional capitalisation and the depreciation rates specified in Appendix-I of Generation Tariff Regulations, 2010.

7.52 Further, the Commission calculated the depreciation for Unit 1 for FY 2012-13 on pro-rata basis (for 69 days) considering the actual COD of unit i.e. January 21, 2013. Similarly the Commission calculated the depreciation for Unit 2 for FY 2013-14 on pro-rata basis (for 316 days) considering the actual COD of unit i.e. May 19, 2013.

7.53 The following table shows the depreciation for Unit 1 and Unit 2 as calculated by the Commission as against that submitted by the Petitioner:

Table 39 Depreciation approved by the Commission for Unit 1

Asset Type	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC*	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC*
	2012-13 (Rs Cr)			2013-14 (Rs Cr)		
Land owned under full title	-	-	-	-	-	-
Land held under lease	0.12	0.07	0.07	0.36	0.38	0.37
Plant and machinery	23.50	13.94	13.11	70.49	71.01	69.34
Building & civil works	3.28	1.93	1.82	10.16	9.85	9.61
Sub Total	**26.90**	**15.94**	**15.00**	**81.01**	**81.24**	**79.33**

Asset Type	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC*	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC*
	2014-15 (Rs Cr)			2015-16 (Rs Cr)		
Land owned under full title	-	-	-	-	-	-
Land held under lease	0.36	0.38	0.37	0.36	0.38	0.37
Plant and machinery	70.49	72.87	71.20	70.49	74.73	73.07
Building & civil	10.48	10.39	10.15	10.48	10.93	10.70

Asset Type	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC*	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC*
	2014-15 (Rs Cr)			2015-16 (Rs Cr)		
works						
Sub Total	**81.34**	**83.64**	**81.73**	**81.34**	**86.04**	**84.13**

Table 40 Depreciation approved by the Commission for Unit 2

Asset Type	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC*	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC*
	2013-14 (Rs Cr)			2014-15 (Rs Cr)		
Land owned under full title	-	-	-	-	-	-
Land held under lease	0.44	0.37	0.36	0.44	0.42	0.42
Plant and machinery	66.50	58.40	57.84	66.50	67.26	66.81
Building & civil works	10.05	8.50	8.42	10.36	9.79	9.73
Sub Total	**76.99**	**67.27**	**66.63**	**77.30**	**77.47**	**76.96**

Asset Type	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC*
	2015-16 (Rs Cr)		
Land owned under full title	-	-	-
Land held under lease	0.44	0.42	0.42
Plant and machinery	66.50	69.11	68.66
Building & civil works	10.36	10.33	10.27
Sub Total	**77.30**	**79.86**	**79.34**

**Depreciation allowed by the Commission is lower on account of the lower capital cost approved by the Commission*

Debt Equity Ratio

Petitioner's submission

7.54 The Petitioner in the petition dated November 1, 2012 submitted that 70.26% of the project cost has been funded from debt and remaining 29.74% is the equity contribution. The following table shows the unit wise debt equity ratio submitted by the Petitioner.

Table 41 Debt Equity submitted by the Petitioner for Unit 1

Particulars	%	Amount (Rs Cr)
Debt	70.22%	1,181.91
Equity	29.78%	501.14
Total	**100.00%**	**1,683.05**

Table 42 Debt Equity submitted by the Petitioner for Unit 2

Particulars	%	Amount (Rs Cr)
Debt	70.29%	1,135.51
Equity	29.71%	479.84
Total	**100.00%**	**1,615.35**

7.55 In its subsequent submission to the Commission, the Petitioner submitted revised figures for debt equity ratio as on the actual COD as shown in the table below:

Table 43 Revised Debt Equity submitted by the Petitioner for Unit 1

Particulars	%	Amount (Rs Cr)
Debt	72.86%	1,240.24
Equity	27.14%	461.98
Total	**100.00%**	**1,702.22**

Table 44 Revised Debt Equity submitted by the Petitioner for Unit 2

Particulars	%	Amount (Rs Cr)
Debt	72.32%	1,182.60
Equity	27.68%	452.63
Total	**100.00%**	**1,635.23**

Commission's Analysis

7.56 The provisions laid out in the Generation Tariff Regulations, 2010 for approval of Debt Equity Ratio are quoted below:

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

Provided that where equity deployed is less than 30% of capital cost, the actual equity shall be considered for determination of tariff:

Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment"

Explanation:-

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

7.57 As per the relevant Clause of Generation Tariff Regulations, 2010 quoted above the Commission may approve equity contribution upto 30% of the capital cost. The Petitioner has submitted the actual equity contribution at 27.14% and 27.68% for Unit 1 and Unit 2 respectively.

7.58 The Commission also verified the actual debt equity contribution for three years immediately preceding the year of COD from the audited accounts of the plant and found the equity contribution to be in line with that submitted by the Petitioner. Accordingly, the Commission provisionally approves the debt equity ratio as shown in the table below for both units:

Table 45 Debt Equity ratio of Unit 1 approved by the Commission

Particulars	As Per Petition		Revised submitted by the Petitioner		Approved by JSERC	
	%	Amount (Rs Cr)	%	Amount (Rs Cr)	%	Amount (Rs Cr)
Debt	70.22%	1,181.91	72.86%	1,240.25	72.86%	1,211.12
Equity	29.78%	501.14	27.14%	461.98	27.14%	451.14
Total	**100.00%**	**1,683.05**	**100.00%**	**1,702.23**	**100.00%**	**1,662.26**

Table 46 Debt Equity ratio of Unit 2 approved by the Commission

Particulars	As Per Petition		Revised submitted by the Petitioner		Approved by JSERC	
	%	Amount (Rs Cr)	%	Amount (Rs Cr)	%	Amount (Rs Cr)
Debt	70.29%	1,135.51	72.32%	1,182.60	72.32%	1,174.74
Equity	29.71%	479.84	27.68%	452.63	27.68%	449.63
Total	**100.00%**	**1,615.35**	**100.00%**	**1,635.23**	**100.00%**	**1,624.37**

Interest on Debt

Petitioner's submission

7.59 The Petitioner, in the petition dated November 1, 2012, submitted that the debt for the project has been raised in two Phases, Phase I and Phase II. The following table shows the salient features of the loan funding submitted by the Petitioner:

Table 47 Phase I of the funding raised submitted by the Petitioner

Sl No	Particular	Remarks
1	Amount of Loan	Rs 947 Cr
2	Interest rate during construction period	The rate of interest for the Construction period of the project is 11.50% per annum at monthly rests till June 30, 2011; 12% per annum from July 1, 2011 till March 31, 2012 and from April 1, 2012 the rate of interest is “SBI Base Rate + 4%”.
3	Interest rate during operation period	During the operation period, three- quarter (0.75%) below SBAR (floating) at monthly rests, with annual reset. The Lender’s Agent will convey the applicable interest rate pursuant to the reset in time to all the Lenders
4	Repayment	40 structure quarterly installments commencing from the September 30, 2012

Table 48 Phase II of the funding raised submitted by the Petitioner

Sl No	Particular	Remarks
1	Amount of Loan	Rs 947 Cr
2	Interest rate	Rate of interest is floating rate equivalent to SBAR plus interest spread of (-) 0.50% (minus zero point five percent). The rate of interest is subject to reset on every Interest Reset Date to SBAR plus such interest spread as may be determined by SBI on any Interest Reset Date and unless the interest spread is so reset on the Interest Reset Date, the rate of Interest shall be the same as applicable prior to that Interest Reset Date. Provided always that if the Applicable Interest Rate of any Phase II Lender is higher than that of the other Phase II Lenders, all such Phase II Lenders shall be paid interest at such higher Applicable Interest Rate. .

Table 49 ICICI Bank funding

Particulars	Phase I	Phase II
Amount (Rs. in Cr)	200	100
Interest rate	ICICI Base Rate +375 bps	ICICI Base Rate +375 bps
Repayment Terms	35 equal quarterly installments starting from Dec'13 qtr	40 equal quarterly installments starting from Dec'13 qtr

7.60 The Petitioner submitted that the project has been funded with total debt of Rs. 2317.42 Cr, out of which the Petitioner has signed Common Loan Agreement with the consortium of banks for an amount of Rs. 2287.00 Cr. The remaining amount of Rs. 30.42 Cr for the project is being financed by the Petitioner.

7.61 The interest rates as submitted by the Petitioner for the computation of the interest on debt are based on the actual interest rates payable i.e. 13.75% for Unit 1 and 14.00% for Unit 2. The following tables shows the interest on debt submitted by the Petitioner :

Table 50 Interest on Debt c of both units as submitted by the Petitioner

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Unit 1	53.55	154.18	143.96	132.77
Unit 2	-	154.50	144.61	133.79

7.62 In its subsequent submissions, the Petitioner submitted revised figures on the basis of actual capital cost as on COD and taking into account the interest rates as per the lending rates of various phases of the loan. The following table shows the revised figures of interest on debt submitted by the Petitioner:

Table 51 Revised Interest (Rs Cr) on debt submitted by the Petitioner

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Unit 1	31.70	158.97	153.54	147.31
Unit 2	-	132.99	143.29	137.89

Commission's Analysis

7.63 The provisions laid out in the Generation Tariff Regulations, 2010 for approval of Interest on Debt as quoted as under:

"7.19 The loans arrived at in the manner indicated in clause 7.13, 7.14 of these Regulations shall be considered as gross normative loan for calculation of interest on loan.

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

7.22 Notwithstanding any moratorium period availed by the Generating Company, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed.

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

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

Provided further that if the generating station does not have actual loan, then the weighted average rate of interest of the Generating Company as a whole shall be considered

7.24 The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.

7.64 The Commission has calculated the debt for each year based on the approved capital cost and considering the approved depreciation as repayment in line with the methodology specified in Generation Tariff Regulations, 2010.

7.65 In its additional submissions to the Commission, the Petitioner submitted the actual weighted average interest rate on its loan portfolio at 13.11% for FY 2012-13, 13.43 % for FY 2013-14 and 13.47 % for FY 2014-15 for Unit I and at 13.99% for FY 2012-13, 13.33% for FY 2013-14 and 13.31% for FY 2014-15 for Unit 2. The Commission has considered the same for projection of rate of interest for FY 2012-13, FY 2013-14 and FY 2014-15. The rates of interest for FY 2015-16 have been taken equal to those approved for FY 2014-15. The interest on debt approved by the Commission is shown in the tables below for both Units:

Table 52 Interest on Debt (Rs Cr) approved by the Commission for Unit 1

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2012-13(Rs Cr)			FY 2013-14(Rs Cr)		
Opening Balance	1181.91	1240.25	1,211.12	1155.01	1224.30	1196.13
Additions	-	-	-	-	-	-
Repayment	26.90	15.94	15.00	81.01	81.24	79.33
Closing Balance	1155.01	1224.30	1196.13	1074.00	1143.06	1116.80
Interest on Debt						
%	13.75%	13.11%*	13.11%	13.47%	13.43%*	13.43%
Rs Cr	**53.55**	**31.70**	**29.83**	**154.18**	**158.97**	**155.31**

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2014-15(Rs Cr)			**FY 2015-16**(Rs Cr)		
Opening Balance	1087.62	1143.06	1116.80	1006.28	1136.65	1112.31
Additions	-	77.25	77.25	-	-	-
Repayment	81.34	83.67	81.73	81.34	86.04	84.13
Closing Balance	1006.28	1136.65	1112.31	924.94	1050.61	1028.18
Interest on Debt						

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2014-15(Rs Cr)			**FY 2015-16**(Rs Cr)		
%	13.75%	13.47%*	13.47%	13.75%	13.47%*	13.47%
Amount in Rs Cr	**143.96**	**153.54**	**150.13**	**132.77**	**147.31**	**144.16**

**As submitted by Petitioner in additional information dated May 20, 2014*

Table 53 Interest on Debt approved by the Commission for Unit 2

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2013-14(Rs Cr)			FY 2014-15(Rs Cr)			FY 2015-16(Rs Cr)		
Opening Balance	1135.51	1182.60	1,174.74	1071.6	1115.33	1108.12	994.3	1037.86	1031.16
Additions	-	-	-	-	-	-	-	76.05	76.05
Repayment	76.99	67.27	66.63	77.3	77.44	76.96	77.3	79.86	79.34
Closing Balance	1058.52	1115.33	1108.12	994.3	1037.86	1031.16	917	1033.8	1027.87
Interest on Debt									
%	14.00%	13.33%*	13.33%	14.00%	13.31%*	13.31%	14.00%	13.31%*	13.31%
Amount in Rs. Cr	**154.50**	**132.99**	**131.73**	**144.61**	**143.29**	**142.37**	**133.79**	**137.89**	**137.03**

**As submitted by Petitioner in additional information dated May 20, 2014*

Return on Equity

Petitioner's submission

7.66 The Petitioner submitted that it has calculated return on equity considering a post-tax return of 15.50% as per Generation Tariff Regulations, 2010.

7.67 The Petitioner in the petition dated November 1, 2012 submitted that despite several hindrances and bottlenecks, the Petitioner made a sincere effort to implement the project as per the schedule envisaged for implementation. However, owing to the following factors not attributable to the Petitioner, the commissioning of the project has been delayed:

a) Change in plant configuration due to adoption of proven technology: The Petitioner initially planned for the unit size of 135 MW with the Chinese equipment supplier. Subsequently, the Petitioner came to know about the performance related issues with the Chinese equipment suppliers and accordingly the Petitioner decided to adopt proven technology of BHEL rather than Chinese technology. At the time of inception, the Petitioner was unaware of the performance related issues with the Chinese equipments. To avoid problems in future, the Petitioner has allotted the package to BHEL. This has led to delay in finalisation and allotment of the package, which led to delay in the project schedule.

b) Delay due to land acquisition: The Petitioner has procured land directly from land owners instead of land being provided by the Government. This had led to delay in starting the project construction.

7.68 With this backdrop, the Petitioner requested the Commission to consider the above factors leading to delay of the project and allow post-tax return on equity at 16% (i.e., 15.50% plus additional equity for timely completion of project) on equity component of Project Cost. The Return on equity for both units submitted by the Petitioner is shown in the following table:

Table 54 Return on Equity (Rs Cr) of Unit 1 and Unit 2 submitted by the Petitioner

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Unit 1	32.37	97.67	98.22	98.22
Unit 2	-	76.13	88.74	91.59

7.69 In its subsequent submissions, the Petitioner submitted revised figures for return on equity based on the actual capital cost. The revised return on equity submitted is shown in the following table:

Table 55 Revised Return on Equity (Rs Cr) submitted by the Petitioner for Unit 1 and Unit 2

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Base ROE for Unit 1	17.57	89.52	93.42	96.24
ROE including additional return for timely completion Unit 1	18.13	92.41	96.43	99.34
Base ROE for Unit 2	-	76.16	88.76	91.62
ROE including additional return for timely completion for Unit 2	-	78.61	91.63	94.57

Commission's Analysis

7.70 The he provisions laid out in the Generation Tariff Regulations, 2010 for approval of Return on Equity are as under:

"7.15 Return on equity shall be computed in rupee terms, on the equity base determined in accordance with clause 7.13, 7.14 of these Regulations. Petition for Approval of Capital Cost and Business Plan and MYT Petition for MYT Control Period for FY 2012-13 to FY 2015-16 63

7.16 Return on equity shall be computed on pre-tax basis at the base rate of 15.50%, to be grossed up as per clause 7.17 of these Regulations.

……………

Provided that in case of Projects commissioned on or after 1st April, 2011, an additional return of 0.5% shall be allowed if such Projects are completed within the timeline specified in Appendix-II to these Regulations:

Provided further that the additional return of 0.5% shall not be admissible if the Project is not completed within the timeline specified above for reasons whatsoever:

7.17 The rate of return on equity shall be computed by grossing up the base rate with the normal tax rate applicable to the Generating Company as per details shown as under:

(i)……….

(ii) MYT period: Base rate to be grossed by the applicable tax rate for the Year 2011-12

Provided that return on equity with respect to the actual tax rate applicable to the Generating Company, in line with the provisions of the relevant Finance Acts of the respective year during the Control period shall be trued up separately for each year of the Control period along with the tariff petition filed for the next Control period.

7.18 Rate of return on equity shall be rounded off to three decimal points and be computed as per the formula given below:

Rate of pre-tax return on equity = Base rate / (1-t)

Where 't' is the applicable tax rate in accordance with clause 7.17 of these Regulations."

7.71 The Commission has worked out the gross normative equity of both Unit 1 and Unit 2 as per Regulation 7.13 and 7.14 of the Generation Tariff Regulation, 2010. The Commission has considered the return on equity at 15.50%.

7.72 As per the Generation Tariff Regulations, 2010, *"Provided that in case of Projects commissioned on or after 1st April, 2011, an additional return of 0.5% shall be allowed if such Projects are completed within the timeline specified in Appendix-II to these Regulations:".* Further, Appendix-II to the said regulations specifies the timelines for the project as 33 months from the date of approval by the Board of the Generating Company. The relevant section of the regulations is quoted above:

"1. The completion time schedule shall be reckoned from the date of investment approval by the Board (of the Generating Company), up to the Date of Commercial Operation of the Units or Block of units.

2. The time schedule has been indicated in months in the following paragraphs and tables:

(i) Thermal Power Projects - Coal/Lignite Power Plant

Unit size 200/210/250/300/330 MW and 125 MW CFBC technology

a) 33 months for Green Field Projects. Subsequent Units at an interval of 4 months each."

7.73 The Commission asked the Petitioner to submit the copy of the investment approval from the Board of the company for the power plant. The Petitioner submitted the extracts from the minutes of the Board Meetings dated December 20, 2007 and May 29, 2009, wherein the approval for investment in Unit 1 and Unit 2 was given. Accordingly, the date of investment approval for Unit 1 was December 20, 2007 and for Unit 2 was May 29, 2009. Since the actual COD of Unit 1 and Unit 2, on January 21, 2013 and on May 19, 2013, was after the specified timeline of 33 months, the Commission has not approved any additional return on equity for the Petitioner. The return on equity approved by the Commission is shown in the tables below:

Table 56 Return on Equity approved by the Commission for Unit 1

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2012-13(Rs Cr)			FY 2013-14(Rs Cr)		
Equity						
Opening Balance	501.14	461.98	451.14	501.14	461.98	451.14
Net Additions	-	-	-	5.77	-	-
Closing Balance	501.14	461.98	451.14	506.91	461.98	451.14
Average Equity	501.14	461.98	451.14	504.03	461.98	451.14
Rate of return on equity(pre-tax)	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Applicable tax rate (t%)	20.01%	20.01%	20.01%	20.01%	20.01%	20.01%
Grossed Up rate of return on equity	19.40%	19.40%	19.40%	19.40%	19.40%	19.40%
Return on equity	**32.37**	**17.57**	**16.54**	**97.67**	**89.54**	**87.52**

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2014-15 (Rs Cr)			FY 2015-16 (Rs Cr)		
Equity						
Opening Balance	506.92	461.98	451.14	506.92	490.75	479.91
Net Additions	-	28.77	28.77	-	-	
Closing Balance	506.92	490.75	479.91	506.92	490.75	479.91
Average Equity	506.92	476.37	465.52	506.92	490.75	479.91
Rate of return on equity(pre-tax)	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Applicable tax rate (t%)	20.96%	20.96%	20.96%	20.96%	20.96%	20.96%
Grossed Up rate of return on equity	19.60%	19.60%	19.60%	19.60%	19.60%	19.60%
Return on equity	**98.22**	**93.42**	**91.24**	**98.22**	**96.24**	**94.06**

Table 57 Return on Equity approved by the Commission for Unit 2

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2013-14 (Rs Cr)			FY 2014-15 (Rs Cr)		
Equity						
Opening Balance	479.84	452.63	449.63	485.37	452.63	449.63
Net Additions	5.53	-	-	-	-	-
Closing Balance	485.37	452.63	449.63	485.37	452.63	449.63
Average Equity	482.61	452.63	449.63	485.37	452.63	449.63
Rate of return on equity(pre-tax)	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Applicable tax rate (t%)	20.01%	20.01%	20.01%	20.96%	20.96%	20.96%
Grossed Up rate of return on equity	19.40%	19.40%	19.40%	19.60%	19.60%	19.60%
Return on equity	**93.51**	**76.16**	**75.52**	**94.05**	**88.76**	**88.13**

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2015-16 (Rs Cr)		
Equity			
Opening Balance	485.37	452.63	449.63
Net Additions	-	29.11	29.11

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2015-16 (Rs Cr)		
Closing Balance	485.37	481.74	478.73
Average Equity	485.37	510.85	507.84
Rate of return on equity(pre-tax)	15.50%	15.50%	15.50%
Applicable tax rate (t%)	20.96%	20.96%	20.96%
Grossed Up rate of return on equity	19.60%	19.60%	19.60%
Return on equity	**94.05**	**91.62**	**90.98**

O&M Expenses

Petitioner's submission

7.74 The Petitioner in the petition dated November 1, 2012 submitted that while calculating O&M Expenses for Unit 1 & Unit 2, norms corresponding to 250 MW sets have been considered as the norm for estimating O&M expenses, as the unit size and characteristics are similar to 250 MW sets.

7.75 The Petitioner also submitted that Unit-1 of the project is expected to get commissioned in November, 2012, accordingly O&M expenses have been estimated on pro-rata basis for 4 months of the first financial year i.e. FY 2012-13 of COD of Unit 1 of the project.

7.76 The Summary of the O&M submitted by the Petitioner for both units in the said Petition is shown in the following table:

Table 58 O&M Expenses (Rs Cr) submitted by the Petitioner

O&M Expenses	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Unit 1	19.36	61.40	64.91	68.63
Unit 2	-	61.40	64.91	68.63

7.77 In its subsequent submissions, the Petitioner revised the O&M expenses on the basis of the actual COD of the plant. The revised figures submitted by the Petitioner are shown in the table below:

Table 59 Revised O&M expenses (Rs Cr) submitted by the Petitioner

O&M Expenses	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Unit 1	11.40	61.40	64.91	68.63
Unit 2	-	53.31	64.91	68.63

Commission's Analysis

7.78 The provisions laid out in the Generation Tariff Regulations, 2010 for approval of O&M expenses are as under:

"New Generating Stations:

7.44 The O&M expenses (in Rs lakhs/ MW) permissible towards determination of tariff for Coal and Lignite fired (including those based on CFBC technology) shall be as follows:

Year	*200/ 210/ 250 MW sets*	*300/330/350 MW sets*	*500 MW sets*	*500 MW and above sets*
2011-12	*20.34*	*17.88*	*14.53*	*13.08*
2012-13	*21.51*	*18.91*	*15.36*	*13.82*
2013-14	*22.74*	*19.99*	*16.24*	*14.62*
2014-15	*24.04*	*21.13*	*17.17*	*15.46*
2015-16	*25.42*	*22.34*	*18.15*	*16.34*

7.79 The Generation Tariff Regulations, 2010 do not specify any norms specifically for 270 MW sets. Accordingly, the Commission has approved the O&M expenses based on the norms specified for 200/210/250 MW sets. The O&M expenses for the first year after commissioning have been approved on pro-rata basis.

7.80 The O&M expenses approved by the Commission for Unit 1 and Unit 2 are shown in the table below.

Table 60 O&M expenses approved by the Commission

Particulars	**As Per Petition**	**Revised submitted by the Petitioner**	**Approved by JSERC**	**As Per Petition**	**Revised submitted by the Petitioner**	**Approved by JSERC**
	2012-13(Rs Cr)			**2013-14(Rs Cr)**		
Unit 1	19.36	11.40	10.98	61.40	61.40	61.40
Unit 2	-	-	-	61.40	53.31	53.16
Total	**19.36**	**11.40**	**10.98**	**122.80**	**114.71**	**114.55**

Particulars	**As Per Petition**	**Revised submitted by the Petitioner**	**Approved by JSERC**	**As Per Petition**	**Revised submitted by the Petitioner**	**Approved by JSERC**
	2014-15(Rs Cr)			**2014-15(Rs Cr)**		

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	2014-15(Rs Cr)			2014-15(Rs Cr)		
Unit 1	64.91	64.91	64.91	68.63	68.63	68.63
Unit 2	64.91	64.91	64.91	68.63	68.63	68.63
Total	**129.82**	**129.82**	**129.82**	**137.26**	**137.26**	**137.27**

Interest on Working Capital

Petitioner's submission

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

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

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

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

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

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

7.82 The Petitioner in the petition dated November 1, 2012 submitted that for calculation of Interest on Working Capital, the rate of interest has been considered at 13%.

7.83 The Interest on working capital submitted by the Petitioner is shown in the table below:

Table 61 Interest on Working Capital (Rs Cr) submitted by the Petitioner for Unit 1

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Coal Cost for 2 months	58.30	61.8	56.56	49.68
Cost of secondary fuel oil for 2 months	2.11	2.11	2.11	2.12
Receivables for 2 months	130.84	134.29	127.85	119.43
O&M Expenses for 1 month	4.84	5.12	5.41	5.72
Maintenance Spares	3.87	12.28	12.98	13.73
Total Working Capital	199.96	215.60	204.91	190.67

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Rate of Interest	13.00%	13.00%	13.00%	13.00%
Interest on Working Capital	**8.67**	**28.03**	**26.64**	**24.79**

Table 62 Interest on Working Capital (Rs Cr) submitted by the Petitioner for Unit 2

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
Coal Cost for 2 months	61.8	56.56	49.68
Cost of secondary fuel oil for 2 months	2.11	2.11	2.12
Receivables for 2 months	132.96	126.56	118.2
O&M Expenses for 1 month	5.12	5.41	5.72
Maintenance Spares	12.28	12.98	13.73
Total Working Capital	214.27	203.62	189.45
Rate of Interest	13.00%	13.00%	13.00%
Interest on Working Capital	27.85	26.47	24.63

7.84 The Petitioner after the actual COD revised the calculations of Interest on working capital as shown in the table below:

Table 63 Revised Interest on Working Capital (Rs Cr) submitted by the Petitioner for Unit 1

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Coal Cost for 2 months	66.81	71.80	75.35	76.61
Cost of secondary fuel oil for 2 months	2.28	2.28	2.28	2.28
Receivables for 2 months	140.12	145.06	149.48	151.30
O&M Expenses for 1 month	4.84	5.12	5.41	5.72
Maintenance Spares	2.28	12.28	12.98	13.73
Total Working Capital	216.33	236.54	245.50	249.64
Rate of Interest	14.50%	14.50%	14.50%	14.50%
Interest on Working Capital	6.16	34.30	35.60	36.20

Table 64 Revised Interest on Working Capital (Rs Cr)submitted by the Petitioner for Unit 2

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
Coal Cost for 2 months	68.90	75.35	76.61
Cost of secondary fuel oil for 2 months	2.28	2.28	2.28
Receivables for 2 months	139.92	145.88	147.85
O&M Expenses for 1 month	5.12	5.41	5.72
Maintenance Spares	10.66	12.98	13.73
Total Working Capital	226.88	241.90	246.16
Rate of Interest	14.50%	14.50%	14.50%
Interest on Working Capital	28.56	35.08	35.70

Commission's Analysis

7.85 The Commission has computed the interest on working capital for both Units 1 and 2 by considering values of related components. The working capital requirement for the Petitioner has been determined by considering the following components as per Regulation 7.34 of the Generation Tariff Regulation, 2010:

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

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

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

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

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

7.86 The Commission outlines the provisions laid out in the Generation Tariff Regulations, 2010 for approval of Interest on Working Capital as under:

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

During Control Period rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on April 1, 2012 or April 1 of the year in which the generating station or a unit thereof, is declared under commercial operation.

7.39 The interest on working capital shall be payable on normative basis notwithstanding that the generating company has not taken working capital loan from any outside agency or has exceeded the working capital loan based on the normative figures."

7.87 Accordingly the Commission calculated the Interest on Working Capital on the rates prevailing on the April 1, 2012 i.e. at 14.75% for Unit 1 as its actual COD occurred on January 21, 2013 and at 14.45% for Unit 2 which was the prevailing rate on April 1, 2013 considering the actual COD on May 19, 2013. The detailed calculation made by the Commission is shown in the tables below:

Table 65 Interest on Working Capital (Rs Cr) approved by the Commission for Unit 1

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2012-13			FY 2013-14		
Coal Cost for 2 months	58.30	66.81	65.07	61.80	71.80	63.15
Cost of secondary fuel oil for 2 months	2.11	2.28	2.13	2.11	2.28	2.13
Receivables for 2 months	130.84	140.12	136.16	134.29	145.06	134.34
O&M Expenses for 1 month	4.84	4.84	4.84	5.12	5.12	5.12
Maintenance Spares	3.87	2.28	2.20	12.28	12.28	12.28
Total Working Capital	**199.96**	**216.33**	**210.39**	**215.60**	**236.53**	**217.02**
Rate of Interest	13.00%	14.50%	14.75%	13.00%	14.50%	14.75%
Interest on Working Capital	**8.67**	**6.16**	**5.87**	**28.03**	**34.30**	**32.01**

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2014-15			FY 2015-16		
Coal Cost for 2 months	56.56	75.35	63.15	49.68	76.61	63.32
Cost of secondary fuel oil for 2 months	2.11	2.28	2.13	2.12	2.28	2.13
Receivables for 2 months	127.85	149.48	135.33	119.43	151.30	136.05
O&M Expenses for 1 month	5.41	5.41	5.41	5.72	5.72	5.72
Maintenance Spares	12.98	12.98	12.98	13.73	13.73	13.73
Total Working Capital	**204.91**	**245.50**	**218.99**	**190.67**	**249.65**	**220.95**
Rate of Interest	13.00%	14.50%	14.75%	13.00%	14.50%	14.75%
Interest on Working Capital	**26.64**	**35.60**	**32.30**	**24.79**	**36.20**	**32.59**

Table 66 Interest on Working Capital (Rs Cr) approved by the Commission for Unit 2

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2013-14			FY 2014-15			FY 2015-16		
Coal Cost for 2 months	61.8	68.9	63.15	56.56	75.35	63.15	49.68	76.61	63.32
Cost of secondary fuel oil for 2 months	2.11	2.28	2.46	2.11	2.28	2.13	2.12	2.28	2.13
Receivables for 2 months	132.96	139.92	133.40	126.56	145.88	132.54	118.2	147.85	133.38
O&M Expenses for 1 month	5.12	5.12	5.12	5.41	5.41	5.41	5.72	5.72	5.72
Maintenance Spares	12.28	10.66	10.63	12.98	12.98	12.98	13.73	13.73	13.73
Total Working Capital	**214.27**	**226.88**	**214.76**	**203.62**	**241.90**	**216.21**	**189.45**	**246.19**	**218.28**
Rate of Interest	13.00%	14.50%	14.45%	13.00%	14.50%	14.45%	13.00%	14.50%	14.45%
Interest on Working Capital	**27.85**	**28.57**	**26.87**	**26.47**	**35.08**	**31.24**	**24.63**	**35.70**	**31.54**

Cost of Secondary Fuel Oil

Petitioner's submission

7.88 The Petitioner in the petition dated November 1, 2012 submitted that the secondary fuel would be procured through local suppliers. The cost of LDO is considered at Rs 63092/kL based on the prevailing market rates for the entire Control Period.

7.89 The table below shows the cost of secondary fuel oil as submitted by the Petitioner for both Unit 1 and Unit 2:

Table 67 Cost of secondary Fuel Oil submitted by the Petitioner for Unit 0031

Particulars	Unit	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Unit Capacity	MW	270	270	270	270
Normative Plant Availability	%	85.00%	85.00%	85.00%	85.00%
No. of Months of the Year	Months	4	12	12	12
Gross Generation at Normative Plant Availability	MU	670.14	2,010.42	2,010.42	2,015.93
Normative Secondary Fuel Oil Consumption	ml/kWh	1.00	1.00	1.00	1.00
Secondary Fuel Oil Consumption at Normative	kL	670.14	2,010.42	2,010.42	2,015.93

Particulars	Unit	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Plant Availability					
Secondary Fuel Oil Landed Cost	Rs./kL	63,092	63,092	63,092	63,092
Secondary Fuel Oil Cost at Normative Plant availability	Rs. Cr.	4.23	12.68	12.68	12.72

Table 68 Cost of secondary Fuel Oil submitted by the Petitioner for Unit 2

Particulars	Unit	FY 2013-14	FY 2014-15	FY 2015-16
Unit Capacity	MW	270	270	270
Normative Plant Availability	%	85.00%	85.00%	85.00%
No. of Months of the Year	Months	12	12	12
Gross Generation at Normative Plant Availability	MU	2,010.42	2,010.42	2,015.93
Normative Secondary Fuel Oil Consumption	ml/kWh	1.00	1.00	1.00
Secondary Fuel Oil Consumption at Normative Plant Availability	kL	2,010.42	2,010.42	2,015.93
Secondary Fuel Oil Landed Cost	Rs./kL	63,092	63,092	63,092
Secondary Fuel Oil Cost at Normative Plant availability	Rs. Cr.	12.68	12.68	12.72

7.90 The Petitioner submitted the revised figures for cost of secondary fuel oil considering the actual fuel price for FY 2013-14 at Rs 68000/kL as shown in the table below:

Table 69 Revised figures of Cost of Secondary Oil submitted by the Petitioner for Unit 1

Particulars	Unit	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Unit Capacity	MW	270	270	270	270
Normative Plant Availability	%	85.00%	85.00%	85.00%	85.00%
No. of Months of the Year	Months	2.355	12	12	12
Gross Generation at Normative Plant Availability	MU	394.54	2,010.42	2,010.42	2,015.93
Normative Secondary Fuel Oil Consumption	ml/kWh	1.00	1.00	1.00	1.00
Secondary Fuel Oil Consumption at Normative Plant Availability	kL	394.54	2,010.42	2,010.42	2,015.93
Secondary Fuel Oil Landed Cost	Rs./kL	68000	68000	68000	68000
Secondary Fuel Oil Cost at Normative Plant availability	Rs. Cr.	2.68	13.67	13.67	13.71

Table 70 Revised figures of Cost of Secondary Oil submitted by the Petitioner for Unit 2

Particulars	Unit	FY 2013-14	FY 2014-15	FY 2015-16
Unit Capacity	MW	270	270	270
Normative Plant Availability	%	85.00%	85.00%	85.00%
No. of Months of the Year	Months	10	12	12
Gross Generation at Normative Plant Availability	MU	1745.71	2,010.42	2,015.93

Particulars	Unit	FY 2013-14	FY 2014-15	FY 2015-16
Normative Secondary Fuel Oil Consumption	ml/kWh	1.00	1.00	1.00
Secondary Fuel Oil Consumption at Normative Plant Availability	kL	1745.71	2,010.42	2,015.93
Secondary Fuel Oil Landed Cost	Rs./kL	68000	68000	68000
Secondary Fuel Oil Cost at Normative Plant availability	Rs. Cr.	11.87	13.67	13.71

Commission's Analysis

7.91 The provisions laid out in the Generation Tariff Regulations, 2010 for approval of cost of secondary fuel oil are as under:

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

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

Where,

SFC – Normative Specific Fuel Oil consumption in ml/kWh

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

NAPAF – Normative Annual Plant Availability Factor in percentage

NDY – Number of days in a year

IC - Installed Capacity in MW"

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

7.92 The Petitioner has earlier projected Landed Cost of Secondary Fuel Oil at 63,092 Rs/kL but the Petitioner in subsequent submissions provided the weighted average landed cost of the secondary fuel oil of Unit 1 at Rs/kL 63503 for FY 2012-13. The Commission has considered the same for the purpose of projection of cost of secondary fuel oil for Unit 1 and Unit 2.

Table 71 Cost of secondary fuel oil approved by the commission for Unit 1

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2012-13(Rs Cr)			FY 2013-14(Rs Cr)		
Gross Generation at NAPF (MU)	670.14	394.54	380.05	2010.42	2010.42	2010.42
Specific Consumption of LDO at NAPF (ml/kWh)	1.00	1.00	1.00	1.00	1.00	1.00
LDO Consumption at NAPF (kL)	670.14	394.54	380.05	2010.42	2010.42	2010.42
LDO Landed Cost (Rs/kL)	68000	68000	63503	68000	68000	63503
LDO Cost (Rs Cr)	**4.56**	**2.68**	**2.41**	**13.67**	**13.67**	**12.77**

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2014-15			FY 2015-16		
Gross Generation at NAPF (MU)	2010.42	2010	2010.42	2015.93	2015.93	2015.93
Specific Consumption of LDO at NAPF (ml/kWh)	1.00	1.00	1.00	1.00	1.00	1.00
LDO Consumption at NAPF (kL)	2010.42	2010.42	2010.42	2015.93	2015.93	2015.93
LDO Landed Cost (Rs/kL)	68000	68000	63503	68000	68000	63503
LDO Cost (Rs Cr)	**13.67**	**13.67**	**12.77**	**13.71**	**13.71**	**12.80**

Table 72 Cost of secondary fuel oil approved by the commission for Unit 2

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2013-14(Rs Cr)			FY 2014-15(Rs Cr)			FY 2015-16(Rs Cr)		
Gross Generation at NAPF (MU)	2010.42	1746	1740.53	2010.42	2010.42	2010.42	2015.93	2015.93	2015.93
Specific Consumption of LDO at NAPF (ml/kWh)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
LDO Consumption at NAPF (kL)	2010.42	1745.71	1740.52	2010.42	2010.42	2010.42	2015.93	2015.93	2015.93
LDO Landed Cost (Rs/kL)	63092	68000	63503	63092	68000	63503	63092	68000	63503
LDO Cost (Rs Cr)	**12.68**	**11.87**	**11.05**	**12.68**	**13.67**	**12.77**	**12.72**	**13.71**	**12.80**

Annual Fixed Charges

7.93 Regulation 8.2 of the Generation Tariff Regulations, 2010 states that the annual fixed charges of a thermal generating station shall consist of the following

(a) Return on Equity;

(b) Interest and Financing Charges on Loan Capital;

(c) Depreciation;

(d) Operation and Maintenance Expenses;

(e) Interest Charges on Working Capital; and

(f) Cost of Secondary Fuel Oil.

7.94 The tables below show the annual fixed charges submitted by the Petitioner and approved by the Commission for each unit for the entire capacity of 270 MW.

Table 73 Annual Fixed Charges of Unit 1 for 270 MW

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2012-13(Rs Cr)			FY 2013-14(Rs Cr)		
O&M Expenses	19.36	11.40	10.98	61.40	61.40	61.40
Depreciation	26.90	15.94	15.00	81.01	81.24	79.33
Interest on Loan	53.55	31.70	29.83	154.18	158.97	155.31
Return on Equity (pre - tax)	32.37	17.57	16.54	97.67	89.52	87.52
Cost of Secondary Fuel	4.56	2.68	2.41	13.67	13.67	12.77
Interest on Working Capital	8.67	6.16	5.87	28.03	34.30	32.04
Annual Fixed Charges	**145.40**	**85.46**	**80.63**	**435.96**	**439.10**	**428.36**

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2014-15(Rs Cr)			FY 2015-16(Rs Cr)		
O&M Expenses	64.91	64.91	64.91	68.63	68.63	68.63
Depreciation	81.34	83.64	81.73	81.34	86.04	84.13
Interest on Loan	143.96	153.54	150.13	132.77	147.31	144.16
Return on Equity (pre - tax)	98.22	93.42	91.24	98.22	96.24	94.06

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2014-15(Rs Cr)			FY 2015-16(Rs Cr)		
Cost of Secondary Fuel	13.67	13.67	12.77	13.71	13.71	12.80
Interest on Working Capital	26.64	35.60	32.30	24.79	36.20	32.59
Annual Fixed Charges	**428.74**	**444.78**	**433.08**	**419.45**	**448.13**	**436.38**

Table 74 Annual Fixed Charges of Unit 2 for 270 MW

Particulars	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC	As Per Petition	Revised submitted by the Petitioner	Approved by JSERC
	FY 2013-14(Rs Cr)			FY 2014-15(Rs Cr)			FY 2015-16(Rs Cr)		
O&M Expenses	61.40	53.31	53.16	64.91	64.91	64.91	68.63	68.63	68.63
Depreciation	76.99	67.27	66.63	77.30	77.47	76.96	77.30	79.86	79.34
Interest on Loan	154.50	132.99	131.73	144.61	143.29	142.37	133.79	137.89	137.03
Return on Equity (pre tax)	93.51	76.16	75.52	88.74	88.76	88.13	91.59	91.62	90.98
Cost of Secondary Fuel	12.68	11.87	11.05	12.68	13.67	12.77	12.72	13.71	12.80
Interest on Working Capital	27.85	28.56	26.87	26.47	35.08	31.24	24.63	35.70	31.54
Annual Fixed Charges	**426.93**	**370.17**	**364.95**	**414.71**	**423.18**	**416.37**	**408.66**	**427.41**	**420.33**

Approved Tariff for Unit 1 and Unit 2

Tariff for 12% of total net capacity

7.95 The tariff for 12% of the total net capacity shall be the variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2010) approved by the Commission in this order and as noted below:

Table 75 Approved tariff for 12% of total net capacity

Description	Unit	Unit 1			
		FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Variable cost/ Base Energy Charge Rate	Rs/kWh	2.134	2.071	2.071	2.071
	Unit	Unit 2			
			FY 2013-14	FY 2014-15	FY 2015-16
Variable cost/ Base Energy Charge Rate	Rs/kWh		2.071	2.071	2.071

Tariff for 13% of total net capacity

7.96 The tariff for 13% of the total net capacity shall be the total tariff i.e. variable cost (subject to fuel price adjustment in accordance with Generation Tariff Regulations 2010) and fixed charges as approved by the Commission in this order as noted below:

Table 76 Approved tariff for 13% of total net capacity – variable cost

Description	Unit	Unit 1			
		FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Variable cost/ Base Energy Charge Rate	Rs/kWh	2.134	2.071	2.071	2.071
	Unit	Unit 2			
			FY 2013-14	FY 2014-15	FY 2015-16
Variable cost/ Base Energy Charge Rate	Rs/kWh		2.071	2.071	2.071

Table 77 Approved tariff for 13% of total net capacity – fixed charges

Description	Derivation	Unit	Unit 1			
			FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Gross Capacity	A	MW	270	270	270	270
Auxiliary Consumption	B	%	9%	9%	9%	9%
Net Capacity	C= A x (1-B)	MW	245.7	245.7	245.7	245.7
12% of net capacity for supply to JUVNL at Energy Charge	D= C x 12%	MW	29.48	29.48	29.48	29.48
Remaining Capacity from which Fixed Charges are to be recovered	E=C-D	MW	216.22	216.22	216.22	216.22
Total Annual Fixed Charge	F	Rs Crore	**80.63**	**428.36**	**433.08**	**436.38**
Annual Fixed Charges/MW	G=F/E	Rs Crore/MW	0.37	1.98	2.00	2.02
13% of Net Capacity for supply to JUVNL at full tariff	H= C x 13%	MW	31.94	31.94	31.94	31.94
AFC for 13% of Net Capacity	I= G x H	Rs Crore	**11.91**	**63.28**	**63.98**	**64.47**

Description	Derivation	Unit	Unit 2		
			FY 2013-14	FY 2014-15	FY 2015-16
Gross Capacity	A	MW	270	270	270
Auxiliary Consumption	B	%	9%	9%	9%
Net Capacity	C= A x (1-B)	MW	245.7	245.7	245.7

Description	Derivation	Unit	Unit 2		
12% of net capacity for supply to JUVNL at Energy Charge	D= C x 12%	MW	29.48	29.48	29.48
Remaining Capacity from which Fixed Charges are to be recovered	E=C-D	MW	216.22	216.22	216.22
Total Annual Fixed Charge	F	Rs Crore	**364.95**	**416.37**	**420.33**
Annual Fixed Charges/MW	G=F/E	Rs Crore/MW	12.38	14.12	14.26
13% of Net Capacity for supply to JUVNL at full tariff	H= C x 13%	MW	31.94	31.94	31.94
AFC for 13% of Net Capacity	I= G x H	Rs Crore	**53.91**	**61.51**	**62.09**

A8: DIRECTIVES

Capital Cost

8.1 The Commission has provisionally approved the capital cost for Unit 1 and Unit 2 at Rs 3286.62 Cr in this order. The Commission however directs the Petitioner to file a petition for approval of final capital cost of the plant along with the audited accounts for the power plant for FY 2013-14 and statutory auditor's certificate for actual cost incurred upto COD. The Petitioner is also required to submit details of the final capital cost of the plant in the format specified in Annexure 2 for prudence check by the Commission.

Additional capitalization

8.2 The Commission has provisionally approved an additional capitalisation of Rs 211.18 Cr for Unit 1 and Unit 2 during the Control Period. In this regard, the Petitioner is directed to submit the detailed project report and cost benefit analysis of each of the schemes prior to taking up the scheme for execution.

Coal Block development and usage of imported coal

8.3 The Commission directs the Petitioner to expedite the production from the allocated coal block. Further, pending the commencement of production from the coal block, the Petitioner should exercise due prudence at the time of procuring coal from alternate sources so as to minimize the weighted average coal cost.

8.4 The Commission also directs the Petitioner to approach the appropriate authority and seek extension of the coal linkage from CCL-CIL till such time the captive coal block of the Petitioner is developed. The Petitioner should submit compliance report regarding the same to the Commission.

8.5 The Commission directs the Petitioner that in case where the energy charge rate based on weighted average price of use of fuel including alternative source of fuel (other than coal through CCL linkage) exceeds 30% of base energy charge rate as approved by the Commission in this Order or energy charge rate based on weighted average price of use of fuel including alternative sources of fuel exceeds 20% of energy charge rate based on weighted average fuel price for the previous month (whichever is lower), prior consultation with JUVNL should be made not later than three days in advance.

Dedicated transmission system

8.6 With regards to construction of the Dedicated Transmission System (DTS), the Commission believes that the rationale for construction of the DTS from the power station to JSEB's Ramchandrapur 220 KV sub-station should be a net reduction in the cost of power purchase to the consumers. The Commission directs JUVNL to carry out a cost benefit analysis of routing the power from the power station through the Dedicated Transmission System vis-à-vis routing the power through the CTU as is being done currently and submit a report regarding the same to the Commission within two months of issuance of this Order.

8.7 With regards to the non-payment of injection charges by JUVNL, the Commission notes that as per the prevalent practice in the industry, transmission charges for procurement of power under the long term contract are to be borne by the procurer. The Commission directs that the injection charges must be paid by JUVNL.

8.8 The Commission further directs the Petitioner and JUVNL to constitute a joint committee to resolve all the issues regarding the transmission of power from the power station to JUVNL. The committee should look into the need for the proposed Dedicated Transmission System, the technical configuration of the proposed line and the sharing of costs of the transmission line. The Petitioner and JUVNL should, after mutual discussions and agreement, arrive at a way forward vis-à-vis the issue of the Dedicated Transmission System, and should submit a status report regarding the same to the Commission within two months of issuance of this Order.

Landed Cost of Coal

8.9 The Commission directs the Petitioner to get the month-wise landed cost of coal separately showing Base cost of coal; Royalty; Taxes and duties; Transport cost by rail / ocean / road / pipeline or any other means; and Clean energy cess as per Ministry of Coal, Govt. of India Notification with respect to Unit 1 and Unit 2 certified by the Statutory Auditor of the Company and submit the same along with the petition for truing up of ARR for FY 2012-13 and FY 2013-14.

Filing of True Up Petition

8.10 The Commission directs the Petitioner to file the true up for the FY 2012-13 and APR petition for FY 2014-15 within two months from the date of issuance of this order.

Data adequacy in next Tariff petition and timelines

8.11 The Commission directs the Petitioner to come up with the next tariff petition removing the various data deficiencies highlighted throughout the tariff order along with the unit-wise audited accounts for the FY 2013-14.

This Order is signed and issued by the Jharkhand State Electricity Regulatory Commission on this the 26th Day of May, 2014.

Date : 26th May, 2014
Place: Ranchi

Sd/-	Sd/-
(T.MUNIKRISHNAIAH) MEMBER (E)	(SUNIL VERMA) MEMBER (F)

A9: ANNEXURES

Annexure 1: List of participating members of public in the public hearing

Sl No.	Name S/Shri	Address/ Organisation if any
1.	Yash Aditya	Adhunik Power & Natural Resources Ltd., 6 JD, Corporate, 2nd Floor, Ranchi-834001.
2.	M.N. Ravi Shankar	Adhunik Power & Natural Resources Ltd., 6 JD, Corporate, 2nd Floor, Ranchi-834001.
3.	Suresh Gehani	Adhunik Power & Natural Resources Ltd., 6 JD, Corporate, 2nd Floor, Ranchi-834001.
4.	Shishir Sharma	Adhunik Power & Natural Resources Ltd., 6 JD, Corporate, 2nd Floor, Ranchi-834001.
5.	Vineet Sarawagi	Adhunik Power & Natural Resources Ltd., 6 JD, Corporate, 2nd Floor, Ranchi-834001.
6.	Samarjit Sahoo	Adhunik Power & Natural Resources Ltd., 6 JD, Corporate, 2nd Floor, Ranchi-834001.
7.	Rajesh Sharma	Adhunik Power & Natural Resources Ltd., 6 JD, Corporate, 2nd Floor, Ranchi-834001.
8.	Vijay Singh	Adhunik Power & Natural Resources Ltd., 6 JD, Corporate, 2nd Floor, Ranchi-834001.
9.	Nirmal Agrawal	Adhunik Power & Natural Resources Ltd., 6 JD, Corporate, 2nd Floor, Ranchi-834001.
10.	Amita Prasad	Jharkhand Urja Vikas Nigam Ltd., Ranchi.
11.	Mukul Kumar	Jharkhand Urja Vikas Nigam Ltd., Ranchi.
12.	Alok Sharan	Jharkhand Urja Vikas Nigam Ltd., Ranchi.
13.	Rishi Nandan	Jharkhand Urja Vikas Nigam Ltd., Ranchi.
14.	M.L. Khetan	Inland Power Limited
15.	Sanjay Kumar Singh	Inland Power Limited
16.	Mr. Naresh Goyal	Inland Power Limited, Jamshedpur
17.	M.V. Venugopal Rao	Inland Power Limited, Jamshedpur

Annexure 2: Format for submission of Capital Cost

S.N.	Break Down	As per original Estimate	Actual capital expenditure as on COD	Liabilities/ provisions	Variation (3-4-5)	Reasons for Variation
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
1.0	**Cost of Land & Site**					
1.1	Land					
1.2	Rehabilitation & Resettlement					
1.3	Preliminary					
	Total Land & Site Developme					
2.0	**Plant & Equipment**					
	BTG					
2.1	**Steam Generator Island**					
2.1.1	ESP					
2.2	**Turbine Generator Island**					
2.2.1	HP/LP Piping					
	BOP Mechanical					
2.3	**Water System**					
2.3.1	External water supply system					
2.3.2	CW system					
2.3.3	DM water Plant					
2.3.4	Clarification plant					
2.3.5	Chlorination Plant					
2.3.6	Effluent Treatment Plant					
2.3.7	Sewage Treatment Plant					
2.3.8	Fire Fighting System					
2.3.9	Central Monitoring System					
2.3.10	Dust Suppression System					
2.3.11	Desalination Plant					
2.4	**Material Handling System**					
2.4.1	Fuel Oil Handling & Storage					
2.4.2	Ash Handling System					
2.4.3	Coal Handling System					
2.5	**Mechanical-Miscellaneous**					
2.5.1	Air Compressor System					
2.5.2	AC Ventilation					
2.5.3	Workshop, Laboratory					
2.6	**Optional Packages - Mechanical**					
2.6.1	MGR/ Railway Siding /					
2.6.2	Rolling Stock/Locomotive					

S.N.	Break Down	As per original Estimate	Actual capital expenditure as on COD	Liabilities/ provisions	Variation (3-4-5)	Reasons for Variation
2.6.3	FGD Plant					
	BOP Electrical					
2.7	**Switchyard Package**					
2.8	Transformers, Switchgear, Cables,					
2.9	Emergency DG Set					
2.10	Transmission Line Cost till Tie					
2.11	C & I Package					
	Civil Works					
2.12	Main Plant, Administration					
2.13	Site Development, Temporary					
2.14	Cooling Tower					
2.15	Chimney					
2.16	Optional Packages – Civil					
2.16.1	MGR/ Marshalling Yard / Jetty					
2.16.2	Township & Colony					
2.16.3	FGD Plant					
2.16.4	Desalination Plant					
	Initial Spares (Included in above					
	Total Plant & Equipment					
2.18	Taxes and Duties					
2.18.1	Custom Duty					
2.18.2	Other Taxes & Duties					
	Total Taxes & Duties					