

Jharkhand State Electricity Regulatory Commission



Provisional MYT Order

on

Business Plan

and

Annual Revenue Requirement

and

Determination of Generation Tariff

for

FY 2013-14 to FY 2015-16

for

Inland Power Ltd.

(IPL)

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
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

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.

Inland Power Limited (IPL)

- 1.8 Inland Power Limited (hereinafter referred to as “the Petitioner” or “IPL”) is a company incorporated under the provisions of the Indian Companies Act, 1956.
- 1.9 IPL was originally incorporated on June 22, 1993 as a Private Limited Company and was subsequently converted to a Public Limited Company on April 03, 2008.
- 1.10 IPL signed a Memorandum of Understanding (hereinafter referred to as “the MoU”) with Government of Jharkhand to develop a 126 MW (\pm 20%) (2x 63 MW) power project in October 2011.
- 1.11 Accordingly, IPL is setting up a 2x63 MW thermal power plant based on CFBC technology in two stages in Gola, District Ramgharh, Jharkhand.
- 1.12 The commercial operation date of first unit of 63 MW was originally anticipated to be in the month of December 2013. The Petitioner now expects to commence commercial operation of generation station within the month of May 2014.
- 1.13 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 up to 25% of power delivered to the system by the proposed power plant. Further, the MoU stipulates that out of the 25% under first right of refusal to the State, the rate of 12% share will be on variable cost.

- 1.14 Pursuant to the MoU signed between Government of Jharkhand and IPL, IPL 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 February 23, 2012 for supplying 35 MW of 63 MW from Stage 1 of the Project on long term basis. Subsequently, IPL signed a supplementary PPA with JSEB (now JUVNL) on April 22, 2013 for purchase and sale of entire quantity of power to be generated from Unit 1 of 63MW inclusive of quantity mentioned in earlier Principal PPA.

Scope of the Present Order

- 1.15 The Petitioner in its tariff petition dated July 17, 2013 has prayed before the Commission for the following:
- a) To approve the tariff for power generated from IPL’s power generation plant for sale to JSEB (now JUVNL) in the state of Jharkhand.
- 1.16 The Commission in this tariff order has provisionally approved the capital cost and tariff for FY 2014-15 to FY 2015-16 for Unit 1 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’).

A2: PROCEDURAL HISTORY

Business Plan and MYT Petition for the control period

- 2.1 The Generation Tariff Regulations 2010 require the Petitioner to file before the Commission a Business Plan and MYT application for the Control Period.
- 2.2 The Petitioner filed a petition with the Commission for approval of the tariff for the MYT control period (FY 2013-14 to FY 2015-16) on July 17, 2013.
- 2.3 The Commission while admitting the Petition undertook a detailed scrutiny of the Petition and found that the Petitioner had not submitted the Business Plan for the Control Period as specified in Regulation 6.6 of the JSERC Generation Tariff Regulations 2010. The Commission vide letter JSERC/Legal/07of 2013 /222 dated. 26.08.2013 directed the Petitioner to submit the Business Plan duly approved by the Board of Directors in accordance with aforesaid Regulation 6.6.
- 2.4 The Petitioner vide letter dated November 12, 2013 filed for approval of the Business Plan.
- 2.5 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.
- 2.6 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.”
- 2.7 As there was only one member in the Commission, even though the ARR pertains to all the Distribution licensees and Generators existing in the Jharkhand State were received, the tariff orders could not be finalized due to lack of quorum.
- 2.8 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 MYT Petition

- 2.9 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.
- 2.10 These information gaps were communicated to the Petitioner vide letter no.
- (a) JSERC/Legal/07of 2013 /222 dated. 26.08.2013
 - (b) JSERC/Legal/07 of 2013/83 dated 12.05.2014
- 2.11 The Petitioner subsequently submitted its response to the aforesaid letters and provided the requisite additional data/information vide following letters:
- (a) Letter dated 12.11.2013
 - (b) Letter dated. 16.05.2014
- 2.12 The representatives of the Commission communicated the requisite clarifications via e-mail to the Petitioner. The Petitioner responded to such clarifications vide letters dated 16.05.2014
- 2.13 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

- 2.14 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 tariff for the MYT control period (FY 2013-14 to FY 2015-16).
- 2.15 The aforesaid public notice was issued by the Petitioner in various newspapers on February 28, 2014 and March 01 2014 and 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 IPL appeared

Sl. No.	Newspaper (Jharkhand edition)	Date of Publication
1.	The Telegraph	28.02.2014 & 01.03.2014

Sl. No.	Newspaper (Jharkhand edition)	Date of Publication
2.	The Times of India	28.02.2014 & 01.03.2014
3.	Dainik Bhaskar	28.02.2014 & 01.03.2014
4.	Ranchi Express	28.02.2014 & 01.03.2014

- 2.16 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	Ali	23.04.2014
2	Hindustan	23.04.2014
3	Pioneer	23.04.2014
4	Prabhar Khabar	23.04.2014
5	Ranchi Expree	23.04.2014
6	Hindustan Times	

Submission of Comments/Suggestions and Conduct of Public Hearing

- 2.17 A public hearing was held on April 29, 2014 at Ranchi and 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 analysis on the response provided by the Petitioner are detailed in the Section A4: of this Order.

A3: SUMMARY OF THE BUSINESS PLAN AND MYT PETITION

Overview of the Thermal Station

- 3.1 The Petitioner is setting up a 126 MW Circulating Fluidized Bed Combustion (CFBC) based power plant in two stages. In Stage –I it is planning to develop a 1 x63 MW CFBC based power plant and in Stage –II it shall be developing another 1 x63 MW CFBC based power plant.

Table 3: Overview of thermal station

S.No	Unit	Installed Capacity	Status	Commercial date of Operation
1.	1	63 MW	Synchronized, Trial Runs being carried out	Anticipated to be within May 2014

Summary of Business Plan for MYT Control Period FY 2013-14 to FY 2015-16

- 3.2 The Business Plan submitted by the Petitioner covers aspects such as
- Capital Investment Plan
 - Capital structure
 - Capitalization schedule
 - Cost details
 - Risk factors and its mitigation
 - Operational performance targets
- 3.3 Under the Capital Investment Plan the Petitioner has projected the total capital expenditure of Rs 319.84 Cr. The Petitioner has also submitted that the expenditure incurred up to May 15, 2013 is Rs 216.04 Cr
- 3.4 The total debt of the project has been estimated to be Rs 227.44 Cr or 71% of the total project cost. The balance Rs 92.40 Cr is proposed to be funded through equity contribution. Accordingly the Petitioner has proposed a debt equity ratio of 71:29.
- 3.5 The Petitioner submitted that it has considered the weighted average of the actual interest rate of outstanding loans which is 12.75% for projecting interest on loans
- 3.6 The Petitioner submitted that has considered an RoE of 20% after grossing up normative RoE with MAT rate.

- 3.7 The submission of the Petitioner regarding O&M expenses is summarized in the following table:

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

Particulars	Projections for FY 2013-14	Projections for FY 2014-15	Projections for FY 2015-16
Proposed O&M Expenses	3.58	15.15	16.01

- 3.8 The submission of the Petitioner regarding Depreciation is summarized in the table below:

Table 5: Submitted Depreciation for Control Period (Rs Cr)

Particulars	Projections for FY 2013-14	Projections for FY 2014-15	Projections for FY 2015-16
Opening Balance of GFA	319.84	319.84	319.84
Additional Capitalization	-	-	-
Closing Balance of GFA	319.84	319.84	319.84
Depreciation	3.98	15.91	15.91

- 3.9 The submission of the Petitioner regarding the trajectory of performance targets is summarized in the table below:

Table 6: Submitted trajectory of performance parameters for Control Period

Particulars	Projections for FY 2013-14	Projections for FY 2014-15	Projections for FY 2015-16
Station Heat Rate (kCal/kg)	2901.62	2901.62	2901.62
Auxiliary Consumption (%)	10.5%	10.5%	10.5%
Specific Oil Consumption (ml/kWh)	1.25	1.25	1.25
Normative PLF (%)	75%	75%	75%

Summary of MYT Petition for Control Period FY 2013-14 to FY 2015-16

- 3.10 The Petitioner submitted that the capital cost of Unit-1 of the project as on COD is expected to be Rs. 319.84 Cr.
- 3.11 The Petitioner further submitted that 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 following table.

Table 7: Summary of capital cost

Particulars	Total Project Cost	
	Rs Cr	%
Debt	227.44	71%
Equity	92.40	29%
Total	319.84	100.00%

Revenue requirement for FY 2013-14 to FY 2015-16

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

Table 8: Estimates for operational performance, fixed cost, energy charges and annual revenue requirement for FY 2013-14 to FY 2015-16 for Unit 1

Particulars	Units	Projections for	Projections for	Projections for
		FY 2013-14	FY 2014-15	FY 2015-16
Capacity	MW	63	63	63
No. of Months of Operation	Months	3	12	12
Gross Generation	MUs	103.48	413.91	413.91
Aux Power Consumption	%	10.5	10.5	10.5
Ex-Bus Generation	MUs	92.61	370.45	370.45
NAPAF	%	75	75	75
Gross heat Rate	Kcal/kWh	2902	2902	2902
Normative Sp. LDO Consumption	ml/kWh	1.25	1.25	1.25
Depreciation	Rs Cr	3.98	15.91	15.91
Interest on Loan	Rs Cr	7.25	27.47	24.42
O&M Expenses	Rs Cr	3.58	15.15	16.01
Return on Equity (Pre-Tax)	Rs Cr	4.62	18.48	18.48
Interest on working Capital	Rs Cr	1.60	6.42	6.40
LDO Expenses at Normative Availability	Rs Cr	4.23	12.68	12.68
Annual Fixed Charges	Rs Cr	145.07	434.97	427.75
Rate of Energy Charges	Rs/kWh	1.91	2.03	1.85
Energy charges	Rs Cr	116.60	370.80	339.33
Total Annual Revenue Requirement	Rs Cr	261.67	805.77	767.08

Tariff for supply of energy to JUVNL

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

Table 9: Fixed Charges and rate of Energy Charges for JUVNL for Unit 1

Particulars	Units	FY 2013-14 (for 3 months)	FY 2014-15	FY 2015-16
Fixed Charges	Rs Cr	21.68	86.01	83.81
Rate of Energy Charges	Rs/kWh	2.05	2.05	2.05

A4: PUBLIC CONSULTATION PROCESS

- 4.1 The public hearing was held on April 29, 2014 in Ranchi. The list of participants is attached in **Annexure -1**

Auxiliary consumption

Public Comments/Suggestions

- 4.2 The Objector submitted that the IPL has claimed higher auxiliary consumption as 10.5%, whereas the JSERC Generation Tariff Regulations 2010 specify that the auxiliary consumption for thermal generation stations with induced draft should be 9%.

Petitioner's Response

- 4.3 The Petitioner submitted that the JSERC Generation Tariff Regulations 2010 do not provide any norms for auxiliary consumption for CFBC plants. As the IPL plant is based on the CFBC technology, norms specified by CERC Tariff Regulations may be used as guiding principle. The CERC Tariff Regulations specify that for lignite based stations using CFBC technology, the auxiliary energy consumption norms shall be 1.5 percentage point more than the auxiliary energy norms for coal based generating stations. The CERC has estimated the auxiliary consumption for lignite based using induced draft cooling tower as 9.0%. Accordingly, the auxiliary consumption for lignite based CFBC plants with induced draft cooling towers as per CERC Tariff Regulations works out to 10.5%.
- 4.4 In addition to above, the Petitioner submitted that as CERC has determined auxiliary consumption norms for lignite-based CFBC stations, in case of coal-based CFBC stations as in case of the Petitioner, the recommendations of Central Electricity Authority (CEA) on operation norms for thermal power stations should also be considered by the Commission, which also proposed higher auxiliary consumption norms for CFBC based stations.
- 4.5 Accordingly, the Petitioner prays to the Commission that in absence of auxiliary consumption norms for coal-based CFBC stations in the JSERC Generation Tariff Regulations 2010, the auxiliary consumption norm as determined by CERC be considered and auxiliary consumption of 10.50% be allowed.

Views of the Commission

- 4.6 The Commission has dealt with the above issue in detail in the section on Determination of tariff in this Order.

Specific fuel oil consumption

Public Comments/Suggestions

- 4.7 The Objector submitted that the IPL has claimed higher specific fuel oil consumption of 1.25 ml/kWh, whereas the JSERC Generation Tariff Regulations 2010 specify that the normative specific fuel oil consumption for thermal generation stations should be 1.00 ml/kWh.

Petitioner's Response

- 4.8 The Petitioner submitted that the JSERC Generation Tariff Regulations 2010 do not specify norm for specific fuel oil consumption for CFBC plants. As the IPL plant is based on the CFBC technology, norms specified by CERC Tariff Regulations may be used as guiding principle. The CERC Tariff Regulations specify that for lignite based stations using CFBC technology, the specific fuel oil consumption should be 1.25 ml/kWh.
- 4.9 Accordingly, the Petitioner prays to the Commission that in absence of specific fuel oil consumption norms for coal-based CFBC stations in the JSERC Generation Tariff Regulations 2010, the normative specific fuel oil consumption as determined by CERC at 1.25 ml/kWh be allowed.

Views of the Commission

- 4.10 The Commission has dealt with the above issue in detail in the section on Determination of tariff in this Order.

Plant Availability Factor

Public Comments/Suggestions

- 4.11 The Objector submitted that the IPL has claimed plant availability factor of only 75%, whereas the JSERC Generation Tariff Regulations 2010 specify that the normative annual plant availability factor (NAPAF) for thermal generation stations should be 85%.

Petitioner's Response

- 4.12 The Petitioner again submitted that the JSERC Generation Tariff Regulations 2010 do not have explicit provisions/ norms for plants having CFBC based boilers and application of norms for thermal generating stations to CFBC stations may not be achievable as CFBC boilers have longer stabilisation period. Recognising the above difference in thermal generating stations and the plants having CFBC boilers, the CERC Tariff Regulations 2009-14 specify relaxed norms for plant availability factor for such stations. CERC has specified that for lignite based stations using CFBC technology, the NAPAF for first three years from COD should be 75% and from after three years to be 80%.

- 4.13 Further, the Petitioner submitted that APTEL in its Judgement in Appeal No. 182 of 2010 clarified that the relaxation in norms for PLF for CFBC will be applicable for both coal and lignite based stations as relaxation is allowed for technology being used and not for the fuel.
- 4.14 Accordingly, the Petitioner prays to the Commission that in absence of specific norms for coal-based CFBC stations in the JSERC Generation Tariff Regulations 2010, the normative plant availability factor as determined by CERC at 75% for first three years from COD and thereafter at 80% be allowed.

Views of the Commission

- 4.15 The Commission has dealt with the above issue in detail in the section on Determination of tariff in this Order.

A5: CAPITAL COST OF THE PROJECT**Capital Cost***Petitioner's submission*

5.1 The Petitioner in the petition dated July 17, 2013 submitted the total projected capital cost as on COD for Unit-1 at Rs 319.84 Cr. The major components of the capital cost submitted by the Petitioner are detailed hereunder:

- a) Land and Site Development
- b) Civil Works
- c) Plant and Machinery
- d) Preliminary Expenses
- e) Preoperative Expenses including IDC
- f) Contingency

5.2 The break up summary of the total projected capital cost for Unit-1 as submitted by the Petitioner in the Petition dated July 17, 2013 is shown in the table below:

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

Particulars	Unit 1 - 1x63 MW	Total Cost incurred till May15, 2013
	Estimated Cost till COD of the Project	
Land and Site Development	7.56	36.59
Civil Works	29.90	
Plant & Machinery	226.22	158.81
Preliminary Expenses	10.22	20.64
Preoperative Expenses including IDC	32.84	
Contingency	13.10	
Total Project Cost	319.84	216.04

5.3 The Petitioner in the petition dated July 17, 2013 submitted that the expected COD of the Plant as December, 2013. Subsequently, the Petitioner submitted additional information sought by the Commission on November 12, 2013. The Business Plan submitted by the Petitioner also states the expected COD of the plant as December 31, 2013 for the power plant.

5.4 The actual capital expenditure of the power plant as of August 19, 2013 as submitted by the Petitioner in the additional information submitted on November 15, 2013 is shown in the table below:

Table 11 Capital Expenditure incurred till August 2013 (Rs Cr)

Particulars	Unit 1 - 1x63 MW	
	Estimated Cost till COD of the Project	Total Cost incurred till August 19, 2013
Land/Land Development and Civil Works	37.50	40.88
Plant & Machinery including duties	226.22	198.21
Preliminary/Preoperative Expenses	2.41	1.10
Project Management Expenses	28.31	13.78
Interest During Construction Period (IDC)	25.41	9.97
Total Project Cost	319.84	263.94

5.5 The actual capital expenditure of the power plant as of March 31, 2014 as submitted by the Petitioner in the additional information submitted on May 16, 2014 is shown in the table below:

Table 12 Capital Expenditure incurred till March 2014 (Rs Cr)

Particulars	Unit 1 - 1x63 MW	
	Estimated Cost till COD of the Project	Total Cost incurred till March 31, 2014
Land/Land Development and Civil Works	37.50	45.82
Plant & Machinery including duties	226.22	226.08
Preliminary/Preoperative Expenses	2.41	17.31
Project Management Expenses	28.31	1.28
Interest During Construction Period (IDC)	25.41	26.00
Working Capital	-	6.49
Total Project Cost	319.84	322.98

5.6 The Petitioner also submitted that the plant is expected to commence commercial operation anytime within May 2014. The reasons of delay in CoD from Scheduled Operation date of December 31, 2013 as submitted by the petitioner are following:

- a. Late availability of engineers from abroad.
- b. Heavy monsoon rains effecting construction activities.
- c. Late arrival of major equipments from China due to long standing dispute in between Paradeep Port Authority and one Indian Party. Indian Party did not clear the dues of Port Authorities for its earlier imports. The port authorities did not allow the ship to take birth at the port, which resulted in the delay for unloading of materials.

Commission's Analysis

5.7 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) up to 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 these Regulation

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.”

- 5.8 The Petitioner submitted the capital cost of the plant as on COD at Rs 319.84 Cr. In order to verify the actual expenditure incurred by the Petitioner, the Commission asked the Petitioner to submit purchase orders, the audited balance sheets of the company and the auditor’s certification for capital cost incurred. In response, the Petitioner submitted the audited annual accounts for FY 2010-11 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 March 31, 2014 i.e. Rs 322.98 Cr.
- 5.9 The Commission observes that the plant has not achieved the CoD as on date of notifying this Order. 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 and statutory auditor’s certificate for actual cost incurred up to COD along with the next tariff petition. The Petitioner is also required to submit details of the final capital cost of the plant in the format specified in **Annexure 2** of this Order for prudence check by the Commission.
- 5.10 For the purpose of this order, the Commission provisionally approves the capital cost of the power plant on the basis of the capital cost submitted by the Petitioner. Accordingly, the total capital cost of the project is provisionally approved at Rs 319.84 Cr.

A6: APPROVAL OF BUSINESS PLAN FOR CONTROL PERIOD (FY 2013-14 TO FY 2015-16)

Petitioner's submission

6.1 The Petitioner in its MYT Business Plan has covered the financial projections and performance targets for the Control Period. The Petitioner has broadly classified the Business Plan into the following Categories:

- a) Capital Investment Plan
- b) Capital Structure
- c) Operation and Maintenance Expenses
- d) Depreciation
- e) Performance Targets

Capital Investment Plan

Petitioner's submission

6.2 The Petitioner submitted the capital investment plan for the 63 MW power plant at Rs 319.84 Cr as mentioned in the following table. As per the business plan, Plant and Machinery forms the major part of the total capital investment plan at 70.7%. Land and Site Development along with Civil Work forms 11.7% of the total capital investment.

6.3 The Petitioner also submitted the capitalization schedule for the power plant for upto November 2010, December 2010-March 2011, FY 2011-12 and FY 2012-13. Equity infusion in the total capital investment is Rs 92.40 Cr and long term loan is Rs 227.44 Cr.

Table 13 Capitalisation Schedule for the Plant

Particulars	Upto Nov 10	Dec 10- March 11	FY 2011- 12	FY 2012- 13	Total
Expenditure					
Project Capex	8.97	0.00	133.99	147.09	289.85
Interest During Construction	0.00	0.00	5.16	20.25	25.41
Working Capital Margin	8.97	0.00	138.34	172.53	319.84
Sources of Fund					
Equity Infusion	28.00	0.00	18.20	46.20	92.40
Long Term Loan	0.00	0.00	101.11	126.33	227.44
Total Sources of funds	28.00	0.00	119.31	172.53	319.84

Commission's Analysis

- 6.4 The Commission has provisionally approved capital expenditure for the plant in paragraph 5.10 of this order
- 6.5 The Commission has also directed the Petitioner to file a petition for approval of final capital cost of the plant along with the audited accounts for the power plant and statutory auditor's certificate for actual cost incurred up to COD.

Capital Structure*Petitioner's submission*

- 6.6 The Petitioner in the Business Plan has submitted that total debt on the project to be Rs 227.44 Cr which is 71.11% of the total capital expenditure and balance Rs 92.40 Cr will be the equity contribution i.e. 28.89% of the total capital expenditure.
- 6.7 The Petitioner has also submitted the terms of loan agreements which it has entered into with four banks namely, State Bank of India, State Bank of Bikaner and Jaipur, State Bank of Patiala and Bank of Baroda.

Commission's Analysis

- 6.8 The Commission has dealt with the above matter in paragraph 7.58 of this Order.

Operation and Maintenance (O&M) Expenses*Petitioner's submission*

- 6.9 The Petitioner has submitted the trajectory of O&M Expenses (normative in Rs Lakhs/MW and total proposed in Rs Crs) for the control period starting from FY 2013-14 to FY 2015-16. The Petitioner has submitted that it has planned O&M expenses as per the norms of the Commission.

Table 14 O&M Expenses for the 1x63 MW power plant

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
Normative O&M Expenses (Rs Lakhs/MW)	22.74	24.04	25.02
Proposed O&M Expenses (Rs Cr)	3.58	15.15	16.01

Commission's Analysis

- 6.10 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 in paragraph 7.80 of this Order. The Petitioner should consider the O&M expenses approved in this Order as ceiling norms and should try to optimize such expenditure.

Depreciation*Petitioner's submission*

- 6.11 The Petitioner submitted the depreciation for the plant on pro rata basis considering the COD in FY 2013-14. The depreciation submitted by the Petitioner is given in the table below:

Table 15 Depreciation schedule for the 1x63 MW power plant

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
Opening balance of gross fixed asset (GFA)	319.84	319.84	319.84
Additional Capitalization	-	-	-
Closing Balance of Gross Fixed Assets (GFA)	319.84	319.84	319.84
Depreciation	3.98	15.91	15.91
Average Depreciation Rate (%)	4.97%	4.97%	4.97%

- 6.12 The Petitioner has also submitted that it would be charging depreciation as per depreciation schedule and JSERC guidelines.

Commission's Analysis

- 6.13 The Commission has dealt with the above matter in paragraph 7.63 of this Order.

Performance Targets

- 6.14 The Petitioner has submitted the trajectory of few performance parameters for the control period starting from FY 2013-14 to FY 2015-16. Submissions are listed below:

Station Heat Rate*Petitioner's submission*

- 6.15 The Petitioner in the Business Plan submitted the Station Heat Rate for the power plant at 2901.62 kCal/kWh.

- 6.16 The Petitioner has also submitted that for calculation of Heat Rate, it has considered the TG cycle heat rate for the boiler at 2,166 KCal/kWh with boiler efficiency of 79.5% and a margin of 6.5% as per CERC Regulations.

Commission's Analysis

- 6.17 The Commission has dealt with the above matter in paragraph 7.28 of this Order.

Auxiliary Consumption

Petitioner's submission

- 6.18 The Petitioner in the Business Plan submitted the Auxiliary Consumption for the power plant at 10.5%.
- 6.19 The Petitioner has also submitted that, for auxiliary consumption, it has taken recourse to CERC norms for Lignite based CFBC plants which have higher auxiliary consumption due to higher pressure drops and consequently higher fan power as compared to the pulverised fuel fired units.

Commission's Analysis

- 6.20 The Commission has dealt with the above matter in paragraph 7.23 of this Order.

Specific Oil Consumption

Petitioner's submission

- 6.21 The Petitioner in the Business Plan submitted the Specific Oil Consumption for the power plant at 1.25 ml/kWh.
- 6.22 The Petitioner has further submitted that Specific Oil Consumption assumption has been proposed as per CERC Regulations 2009, as there are no specific norms under JSERC Regulations. It has also added that CEA has recommended this norm to the CERC based on the increased number of start-ups required for the CFBC plant.

Commission's Analysis

- 6.23 The Commission has dealt with the above matter in paragraph 7.35 of this Order.

Normative PLF

Petitioner's submission

- 6.24 The Petitioner in the Business Plan submitted the Normative PLF for the power plant at 75%.

6.25 The Petitioner has further submitted that JSERC Regulations do not have an explicit provision for CFBC boiler, and provides normative PLF of 85% for all thermal generating stations. The Petitioner has considered the CERC norms for power plants based on CFBC technology and considered 75% as Normative PLF for first 3 years of the plant operation.

Commission's Analysis

6.26 The Commission has dealt with the above matter in paragraph 7.15 of this Order.

A7: TARIFF DETERMINATION FOR CONTROL PERIOD (FY 2013-14 TO FY 2015-16)

- 7.1 The Petitioner submitted the petition for determination of generation tariff for the Control Period on the basis of the projection of operational and financial figures for the year. The Commission has scrutinized the petition filed by IPL for determination of Generation Tariff for the Control Period in accordance with the Generation Tariff Regulations, 2010.
- 7.2 The Petitioner has submitted projections for FY 2013-14 (for 3 months), FY 2014-15 and FY 2015-16. However the Commercial Operation Date (COD) of Unit –I has not yet been declared.
- 7.3 The Commission vide letter no. JSERC/legal/07 of 2013/83 dated May 12, 2014 directed the Petitioner to submit details of the revised anticipated date of commercial operation of Unit -1. The Petitioner vide letter dated May 16, 2014 submitted that it expects to commence the commercial operation of generation station at any time within May 2014. The Petitioner further submitted that the plant had been synchronized and trial runs were going on.
- 7.4 The Commission has now provisionally considered the COD for Unit -1 as June 01, 2014. Accordingly component wise analysis and provisional determination of tariff has been carried out for the applicable months in FY 2014-15 and entire year of FY 2015-16. In case there are further delays in COD, the Commission shall consider the actual date of COD for the purposes of true up and determination of final capital cost of the Petitioner in the subsequent Tariff Orders. The Commission also directs the Petitioner to intimate to the Commission of the actual date of COD at the earliest.
- 7.5 The component-wise description of the Petitioner’s submission and the Commission’s analysis has been summarised in following sub-sections.

Norms of operation and fuel cost

Plant Availability

Petitioner’s submission

- 7.6 The Petitioner submitted that the JSERC Generation Tariff Regulations do not have an explicit provision for CFBC boilers, and provides a normative PLF of 85% for all thermal generation stations.
- 7.7 The Petitioner further submitted that CERC in its Tariff Regulations 2009-14 has allowed relaxed norms of PLF for CFBC boilers and that RERC Tariff Regulations 2009 also provide for gradual increase in PLF to 80% during a period of five years.
- 7.8 The Petitioner has projected the Plant Availability Factor (PAF) and Plant Load Factor (PLF) for its generation station as per Regulation 26(i) of the CERC Tariff Regulations

Table 16 Proposed NAPAF for the Control Period

Particulars	Unit	FY 2013-14	FY 2014-15	FY 2015-16
Unit 1	%	75%	75%	75%

Commission's Analysis

- 7.9 Regulation 8.6 of the JSERC Generation Tariff Regulations, 2010 (quoted below) prescribes the norm for approving the availability of a thermal 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%.”

- 7.10 The Commission has considered the submissions made by the Petitioner regarding the relaxation of norms for Normative Plant Availability Factor (NAPAF) specified under Regulation 8.6 of the Generation Tariff Regulations 2010 as the Petitioner is using CFBC technology based boiler.
- 7.11 The Central Electricity Authority (CEA) in its Report on recommendations for “Operation Norms for Thermal Power Stations” for the tariff period 2014-19 has recommended that present norms of availability are considered adequate and may be retained.
- 7.12 The Central Electricity Regulatory Commission (CERC) has notified the Tariff Regulations 2014 for the control period FY 2014-15 to FY 2018-19. Regulation 36 A (E) of the said Regulation specifies NAPAF for lignite fired generation stations using CFBC technology:
- “Lignite fired Generating Stations using Circulatory Fluidized Bed Combustion (CFBC) Technology and Generating stations based on coal rejects*
- 1. First Three years from COD – 75%*
 - 2. For next year after completion of three years of COD – 80%”*
- 7.13 The Commission also notes that even though the above norms for CFBC stations by CERC are specified for lignite based stations, the APTEL in its Judgement in Appeal No. 182 of 2010 clarified that the relaxation in norms for PLF for CBFC will be applicable for both coal based and lignite based stations as relaxation is allowed for technology being used and not for fuel. Thus, CERC norms read along with the APTEL Judgment in above appeal provides strength to the Petitioner's claim for relaxed norms for PLF. Further, the Commission has also taken cognizant of above-mentioned APTEL's Judgement while deciding on other operating norms for IPL station after reviewing CERC norms for lignite based CBFC stations.

- 7.14 Thus, in the absence of CFBC technology specific NAPAF norms in the JSERC Generation Tariff Regulations 2010 and after considering the recommendations of the CEA, the technology specific norms specified by the CERC along with the clarification made by APTEL in Appeal No. 182 of 2010, the Commission finds merit in considering the Petitioner's submission regarding NAPAF norms.
- 7.15 Accordingly the Commission provisionally approves the NAPAF for Unit -1 of IPL for the Control Period as follows:

Table 17 Approved NAPAF for the Control Period

Particulars	Unit	FY 2014-15	FY 2015-16
Unit 1	%	75%	75%

- 7.16 The provisionally approved norms for NAPAF may be reviewed at the time of true up of FY 2014-15 and FY 2015-16 after considering the actual performance of Unit-1 of the generation station.

Auxiliary Consumption

Petitioner's submission

- 7.17 The Petitioner submitted that the JSERC Generation Tariff Regulations 2010 do not specify auxiliary consumption norms specifically for CFBC technology based generation plants.
- 7.18 The Petitioner further submitted that it has proposed auxiliary consumption in accordance with CERC Tariff Regulations 2009. The auxiliary consumption for the Control Period proposed by the Petitioner is summarized in the following table:

Table 18 Proposed auxiliary energy consumption for the Control Period

Particulars	Unit	FY 2013-14	FY 2014-15	FY 2015-16
Unit 1	%	10.5%	10.5%	10.5%

Commission's Analysis

- 7.19 The Regulation 8.6 of the Generation Tariff Regulations, 2010 (quoted below) prescribes the norm for approving the operational parameters including auxiliary 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%:

7.20 The Central Electricity Authority (CEA) in its Report on recommendations for “Operation Norms for Thermal Power Stations” for the tariff period 2014 -19 has recommended that Lignite based PC and CFBC units may be allowed additional AEC over coal fired stations as per prevalent norms.

7.21 Regulation 36 (E) of the CERC Tariff Regulations 2014 provides for relaxation of auxiliary energy consumption norms for lignite fired generation stations using CFBC technology:

“Provided that for the lignite fired stations using CFBC technology, the auxiliary energy consumption norms shall be 1.5 percentage point more than the auxiliary energy consumption norms of coal-based generating stations at (E) (a) above”

7.22 In the absence of auxiliary energy consumption norms specific to CFBC technology in the Generation Tariff Regulations 2010 and considering the recommendations of the CEA and the technology specific norms specified by the CERC, the Commission finds merit in considering the Petitioners submission regarding Auxiliary Energy Consumption norms.

7.23 Accordingly the Commission provisionally approves the auxiliary energy consumption for Unit -1 of IPL to be 1.5 percentage points more than the auxiliary energy consumption norms specified in Regulation 8.6 of the Generation Tariff Regulations 2010. The provisionally approved auxiliary energy consumption norms for the Control Period are as follows:

Table 19 Approved auxiliary energy consumption for the Control Period

Particulars	Unit	FY 2014-15	FY 2015-16
Unit 1	%	10.5%	10.5%

7.24 The provisionally approved norms for auxiliary energy consumption may be reviewed at the time of true up of FY 2014-15 and FY 2015-16 after considering the actual performance of Unit-1 of the generation station.

Gross Station Heat Rate

Petitioner's submission

- 7.25 The Petitioner has submitted that the TG cycle heat rate of the proposed boiler is 2166 kCal/kWh and boiler efficiency is 79.5%. Based on the base heat rate, boiler efficiency and the formula specified in Clause 8.6 (b) of the Generation Tariff Regulations 2010, the gross station heat rate for the Control Period proposed by the Petitioner is summarized in the following table:

Table 20 Proposed gross station heat rate for the Control Period

Particulars	Unit	FY 2013-14	FY 2014-15	FY 2015-16
Unit 1	kCal/kWh	2902	2902	2902

Commission's Analysis

- 7.26 The Regulation 8.6 of the Generation Tariff Regulations, 2010 (quoted below) prescribes the norm for approving the operational parameters including gross station heat rate of a generating station:

8.6 (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

- 7.27 The Commission vide letter no JSERC/legal/07 of 2013/222 dated August 26, 2013 directed the Petitioner to submit report/ study conducted by independent technical expert to verify the boiler efficiency of 79.5%. The Petitioner vide letter dated November 12, 2013 submitted the required information.
- 7.28 Thus, the Commission after scrutinizing the additional information submitted approves the gross station heat rate in accordance with the formula specified in Regulation 8.6 (b) (i) of the Generation Tariff Regulations 2010, the projected base heat rate and boiler efficiency as per the independent technical evaluation report, for the Control Period as follows:

Table 21 Approved gross station heat rate for the Control Period

Particulars	Unit	FY 2014-15	FY 2015-16
Unit 1	kCal/kWh	2902	2902

Secondary fuel Oil Consumption

Petitioner's submission

7.29 The Petitioner submitted that it has proposed specific oil consumption as per norms specified in Regulation 26 (iii) (a) of CERC Tariff Regulations 2009 as the JSERC Generation Tariff Regulations 2010 do not specify norms for specific oil consumption for CFBC technology based generation plants.

7.30 The specific oil consumption for the Control Period proposed by the Petitioner is summarized in the following table:

Table 22 Proposed secondary fuel oil consumption for the Control Period

Particulars	Unit	FY 2013-14	FY 2014-15	FY 2015-16
Unit 1	ml/kWh	1.25	1.25	1.25

Commission's Analysis

7.31 The Regulation 8.6 of the Generation Tariff Regulations, 2010 (quoted below) prescribes the norm for approving the operational parameters including secondary fuel oil consumption of a generating station:

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

7.32 The Central Electricity Authority (CEA) in its Report on recommendations for “Operation Norms for Thermal Power Stations” for the tariff period 2014 -19 has recommended that norms for SFC are liberal and may be revisited. Regarding specific secondary fuel oil consumption, the CEA states:

“CFBC Units - SFC for CFBC units could also be taken as 0.75 ml/kWh inclusive of 7 startups per unit”

7.33 Further Regulation 36 (D)(iii) of the CERC Tariff Regulations 2014 states as follows:

“Secondary fuel oil consumption

(iii) Lignite-fired generating stations based on CFBC Technology: 1.00ml/kWh”

7.34 Considering the observations of CEA and also the CFBC technology specific norms specified by the CERC, the Commission does not find any merit in considering the Petitioner's submission regarding the relaxation of norms for secondary fuel oil consumption.

- 7.35 Accordingly the Commission approves the secondary fuel oil consumption in accordance with norms specified in Regulation 8.6 (d) of the Generation Tariff Regulations 2010. The approved secondary fuel oil consumption norms for Unit-I of IPL for the Control Period are as follows:

Table 23 Approved secondary fuel oil consumption for the Control Period

Particulars	Unit	FY 2014-15	FY 2015-16
Unit 1	ml/kWh	1.00	1.00

Primary Fuel Mix, Primary fuel Cost, Transit loss and Gross Calorific Value

Petitioner's submission

- 7.36 The Petitioner submitted that the fuel for the plant shall be Coal of E/F grade from nearby SIKNI mine of Jharkhand State Mineral Development Corporation Limited (JSMDC) received by road by trucks/ dumpers. It was also submitted that Dolochar shall also be partially fired in the plant boiler, which shall be made available from the nearby sponge iron plant.
- 7.37 The Petitioner submitted that it has executed a coal linkage for 63 MW from JSMDC. The Petitioner also submitted the Letter of Assurance for 3.8 Lac tonnes of coal per annum dated September 05, 2011 from JSMDC.
- 7.38 The Petitioner further submitted that the fuel linkage from the JSMDC mines is expected to commence in October / November 2013 but production from the block may get delayed subject to the receipt of major approvals and clearances.
- 7.39 The Petitioner also stated that in case the block does not attain its rated capacity immediately, the Petitioner will endeavour to source primary fuel from various other sources like:
- Washery Rejects within Jharkhand
 - Middling within Jharkhand
 - E-Auction with Jharkhand Mines
 - E-Auction with CIL Overall
 - Imported Coal
- 7.40 The Petitioner proposed a transit loss of 1% stating that transportation would involve a mix of road and rail, thereby causing a number of loading and unloading as per transportation plan

- 7.41 The details of Gross Calorific Value, fuel price, blending ratio of coal and dolochar and transit losses of primary fuel submitted by the Petitioner are summarized in following table:

Table 24 Proposed GCV, Fuel price, blending ratio and transit losses of primary fuel

Particulars	Units	FY 2013-14	FY 2014-15	FY 2015-16
Gross Calorific Value of coal	kCal/kg	3200	3200	3200
Gross Calorific Value of Dolochar	kCal/kg	1500	1500	1500
Price of coal	Rs/Tonne	2100	2100	2100
Price of Dolochar	Rs/Tonne	750	750	750
Blending Ratio (%age of coal to Dolochar)	%	70:30	70:30	70:30
Transit Losses	%	1%	1%	1%

Commission's Analysis

- 7.42 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.”

- 7.43 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.”*

- 7.44 The Commission vide Letter No. JSERC/Legal/07of 2013 /222 dated August 26, 2013 directed the Petitioner to submit details regarding the break-up of coal price. The Petitioner vide letter dated November 12, 2013 submitted additional information on the pricing of coal.
- 7.45 As it is a new plant and since it has not become commercially operational yet, no information was available on the actual gross calorific value of preceding months.
- 7.46 Accordingly, the Commission after scrutinizing the submissions made by the Petitioner provisionally approves the GCV, blending ratio and price of coal and dolochar as per the submissions of the Petitioner. Further the Commission directs the Petitioner to prioritize procurement of primary fuel from the least cost source.
- 7.47 The Commission allows 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 in accordance with Regulation 8.19 of the Generation Tariff Regulation.

Table 25 Approved GCV, Fuel price, blending ratio and transit losses of primary fuel

Particulars	Units	FY 2013-14	FY 2014-15	FY 2015-16
Gross Calorific Value of coal	kCal/kg	3200	3200	3200
Gross Calorific Value of dolochar	kCal/kg	1500	1500	1500
Price of coal	Rs/Tonne	2100	2100	2100
Price of dolochar	Rs/Tonne	750	750	750
Blending Ratio (%age of coal to dolochar)	%	70:30	70:30	70:30
Transit Losses	%	0.8%	0.8%	0.8%

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

Petitioner's submission

- 7.48 The Petitioner has projected the energy charge rate for the control period FY 2013-14 to FY 2015-16 of Unit -I as per the following table:

Table 26 Energy Charge Rate submitted by the Petitioner

Description	UoM	FY 2013-14	FY 2014-15	FY 2015-16
Installed Capacity	MW	63	63	63
NAPAF / PLF	%	75%	75%	75%
Gross Generation	MU	103.48	413.91	413.91
Auxiliary Consumption	%	10.50%	10.50%	10.50%
Auxiliary Consumption	MU	10.87	43.46	43.46
Net Units Sent Out	MU	92.61	370.45	370.45
Gross station heat rate	kCal/kWh	2902	2902	2902

Description	UoM	FY 2013-14	FY 2014-15	FY 2015-16
Calorific value of secondary fuel	kCal/Litre	10000	10000	10000
Specific Oil Consumption	ml/kWh	1.25	1.25	1.25
Transit Loss	%	1.00%	1.00%	1.00%
Weighted average landed price of primary fuel (coal & dolochar)	Rs/MT	1711.95	1711.95	1711.95
Calorific value of primary fuel (coal & dolochar)	kCal/kg	2690	2690	2690
Energy charge rate (ECR) for Coal	Rs/kWh	2.05	2.05	2.05
Fuel Cost	Rs Cr.	19.03	76.11	76.11

Commission's Analysis

- 7.49 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 (with fuel price adjustment).
- 7.50 The formula for calculation of energy charge and energy charge rate (ECR) payable to a Generating Company is specified in Regulation 8.17 and 8.18 of the Generation Tariff Regulation, 2010 as quoted below:

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

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

(a) For coal based stations

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

Where, AUX - Normative auxiliary energy consumption in percentage

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

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

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

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

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

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

- 7.51 Accordingly, the Commission has calculated the base ECR to be charged by the Petitioner as per the formula stated above and after considering the operational parameters as per the Generation Tariff Regulations, 2010 and as approved in the preceding paragraphs of this Order.
- 7.52 The Table below details the base ECR rate approved by the Commission for the period FY 2014-15 to FY 2015-16:

Table 27 Energy Charge Rate approved by the Commission

Description	UoM	FY 2013-14	FY 2014-15	FY 2015-16
Installed Capacity	MW	-	63	63
NAPAF / PLF	%	-	75%	75%
Gross Generation	MU	-	343.60	413.91
Auxiliary Consumption	%	-	10.50%	10.50%
Auxiliary Consumption	MU	-	36.08	43.46
Net Units Sent Out	MU	-	307.52	370.45
Gross station heat rate	kCal/kWh	-	2901.62	2901.62
Calorific value of secondary fuel	kCal/Litre	-	10000	10000
Specific Oil Consumption	ml/kWh	-	1.00	1.00
Transit Loss	%	-	0.80%	0.80%
Weighted average landed price of primary fuel (coal & dolochar)	Rs/MT	-	1708.56	1708.56
Calorific value of primary fuel (coal & dolochar)	kCal/kg	-	2690	2690
Energy charge rate (ECR) for Coal	Rs/kWh	-	2.05	2.05
Fuel Cost	Rs Cr.	-	63.11	76.02

*As the generation plant was not commercially operational in FY 2012-13, the Commission has determined the Energy Charge Rate for FY 2014-15 and FY 2015-16 as specified in Paragraph 7.3 and Paragraph 7.4 of this Order

- 7.53 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 in the Generation Tariff Regulations, 2010.

Determination of Fixed Charges

Debt Equity Ratio

Petitioner's submission

- 7.54 The Petitioner submitted that 71.11% of the project cost has been funded from debt and remaining 28.89% is the equity contribution. The following table shows the debt equity ratio for Unit-I as submitted by the Petitioner.

Table 28 Debt Equity submitted by the Petitioner for the Plant

Particulars	%	Amount (Rs Cr)
Debt	71.11%	227.44
Equity	28.89%	92.40
Total	100.00%	319.84

Commission's Analysis

7.55 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.”

7.56 As per the relevant Clause of Generation Tariff Regulations, 2010 quoted above the Commission may approve equity contribution up to 30% of the capital cost. The Petitioner has submitted the actual equity contribution at 28.89% for the Plant.

7.57 The Commission observes that the plant has not achieved the CoD as on date of notifying this order. The Commission is therefore constrained to approve the Debt Equity Ratio of the power plant on a provisional basis. The Commission directs the Petitioner to file a petition for approval of Debt Equity Ratio of the plant along with the audited accounts for the power plant and statutory auditor's certificate for actual cost incurred up to COD.

7.58 For the purpose of this order, the Commission provisionally approves the Debt Equity Ratio of the power plant on the basis of submission by the Petitioner. Accordingly, the Debt Equity Ratio is provisionally approved at 71.11: 28.89.

Table 29 Debt Equity ratio of the plant approved by the Commission

Particulars	Submitted by IPL		Approved by JSERC	
	%	Amount (Rs Cr)	%	Amount (Rs Cr)
Debt	71.11%	227.44	71.11%	227.44
Equity	28.89%	92.40	28.89%	92.40
Total	100.00%	319.84	100.00%	319.84

Depreciation

Petitioner's submission

7.59 The Petitioner submitted the depreciation for the Plant on pro rata basis considering the COD in the month of December 2013. The depreciation submitted by the Petitioner is given in the table below:

Table 30 Depreciation submitted by the Petitioner for the Plant

Particulars	FY 2013-14 (3 months)	FY 2014-15	FY 2015-16
1x63 MW Plant	3.98	15.91	15.91

Commission's Analysis

7.60 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 capitalsubsidy / 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.

- 7.61 Accordingly, the Commission calculated the depreciation for the Plant by considering the provisionally approved capital cost and the depreciation rates specified in Appendix-I of Generation Tariff Regulations, 2010.
- 7.62 Further, the Commission calculated the depreciation for the plant for FY 2014-15 on pro-rata basis (for 303 days) considering the expected COD of the Plant as June 1, 2014.
- 7.63 The following table shows the depreciation for the Plant as calculated by the Commission as against that submitted by the Petitioner:

Table 31 Depreciation approved by the Commission for the Plant

Asset Type	Submitted by IPL	Approved by JSERC	Submitted by IPL	Approved by JSERC	Submitted by IPL	Approved by JSERC
	2013-14 (Rs Cr)		2014-15 (Rs Cr)		2015-16 (Rs Cr)	
Total	3.98	-	15.91	13.20	15.91	15.91

Interest on Debt

Petitioner's submission

- 7.64 The Petitioner, in the submission of additional information dated November 12, 2013, submitted that the project has been funded with total debt of Rs. 227.44 Cr, out of which the Petitioner has signed Common Loan Agreement with the consortium of four banks namely, State Bank of India, State Bank of Bikaner & Jaipur, State Bank of Patiala and Bank of Baroda.

Table 32 Funding raised submitted by the Petitioner - State Bank of India

Sl No	Particular	Remarks
1	Amount of Loan	Rs 100 Cr
2	Interest rate	Floating price of RTL at 4.25% above base rate, present effective rate at 12.50% p.a. at monthly rests and interest spread reset option every year (1st reset will take place on Scheduled CoD). Interest will be payable at monthly basis.
3	Tenor (D-T-D)	12 years (2 years + 6 months + 9 years and 6 months)
4	Repayment	38 equal quarterly installments commencing from the Q3 2013-14.

Table 33 Funding raised submitted by the Petitioner - State Bank of Bikaner and Jaipur

Sl No	Particular	Remarks
1	Amount of Loan	Rs 42 Cr
2	Interest rate	12.75% p.a. monthly rests i.e. 4.00% above our Base Rate with 1st reset on Scheduled CoD and annual afterwards.
3	Tenor (D-T-D)	12 years (2 years + 6 months + 9 years and 6 months)
4	Repayment	38 equal quarterly installments commencing from the Q3 2013-14.

Table 34 Funding raised submitted by the Petitioner - State Bank of Patiala

SI No	Particular	Remarks
1	Amount of Loan	Rs 34 Cr
2	Interest rate	13.25% p.a. monthly rests i.e. 3.75% above our Base Rate with 1st reset on Scheduled CoD) and annual afterwards.
3	Tenor (D-T-D)	12 years (2 years + 6 months + 9 years and 6 months)
4	Repayment	38 equal quarterly installments commencing from the Q3 2013-14.

Table 35 Funding raised submitted by the Petitioner - Bank of Baroda

SI No	Particular	Remarks
1	Amount of Loan	Rs 52 Cr
2	Interest rate	4.25% over SBI Base Rate i.e. 13.95% p.a. with monthly rest with first reset of interest on scheduled CoD and annually afterwards
3	Tenor (D-T-D)	12 years (2 years + 6 months + 9 years and 6 months)
4	Repayment	38 equal quarterly installments commencing from the Q3 2013-14.

7.65 The Petitioner has submitted the weighted average rate of interest of 12.75% for the computation of the interest on normative debt component. The following table summarizes the interest on debt submitted by the Petitioner :

Table 36 Interest on Debt of both units as submitted by the Petitioner

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
1x63 MW Plant	7.25	27.47	24.42

Commission's Analysis

7.66 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.

- 7.67 The Commission has calculated the opening balance of normative debt for each year of the control period based on the provisionally approved capital cost. The provisionally approved depreciation has been considered as repayment in line with the methodology specified in Generation Tariff Regulations, 2010 to arrive at the closing balance of normative debt component.
- 7.68 As the generation plant is yet to be declared under commercial operation, the rate of interest has been provisionally considered as the weighted average rate of interest as per submission made by the Petitioner. The Commission shall review the rate of interest while truing up the MYT for FY 2014-15 and FY 2015-16.
- 7.69 The interest on debt approved by the Commission is shown in the table below for the Plant:

Table 37 Interest on Debt approved by the Commission for the Plant

Particulars	Submitted by IPL	Approved by JSERC	Submitted by IPL	Approved by JSERC	Submitted by IPL	Approved by JSERC
	FY 2013-14		FY 2014-15		FY 2015-16	
Opening Balance	227.44	-	227.44	227.44	203.50	214.24
Additions	0.00	-	0.00	0.00	0.00	0.00
Repayment	0.00	-	23.94	13.20	23.94	15.91
Closing Balance	227.44	-	203.50	214.24	179.56	198.33
Interest on Debt						
%	12.75%	-	12.75%	12.75%	12.75%	12.75%
Rs Cr	7.25	-	27.47	23.37	24.42	26.30

Return on Equity

Petitioner's submission

- 7.70 The Petitioner in the petition submitted that it has calculated return on equity considering a post-tax return of 16.00% as per Generation Tariff Regulations, 2010.

7.71 The Petitioner submitted that since the construction activities are supposed to get over within 24 months from December 2011 to December 31, 2013, hence it has taken a rate of 16.00% for RoE calculation. The Return on equity for the Plant submitted by the Petitioner is shown in the following table:

Table 38 Return on Equity for the Plant submitted by the Petitioner (Rs Cr)

Particulars	FY 2013-14 (for 3 months)	FY 2014-15	FY 2015-16
1x63 MW Plant	4.62	18.48	18.48

7.72 The Petitioner, in additional submission made on May 16, 2014, submitted that the expected Commercial Operation Date of Unit-I of generation plant shall be within the month of May 2014. The Petitioner further submitted that the plant had been synchronised and trial runs were already going on.

Commission's Analysis

7.73 The 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:

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

Where ‘t’ is the applicable tax rate in accordance with clause 7.17 of these Regulations.”

Appendix-II Timeline for completion of Projects

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.

(b) 31 months for Extension Projects. Subsequent Units at an interval of 4 months each

7.74 As the commercial operation date of the plant is yet to be declared, the Commission has worked out Return on Equity of the Plant as per Regulation 7.13, 7.14 and 7.16 of the Generation Tariff Regulation, 2010. The Commission has provisionally considered the return on equity at 15.50%.

7.75 Additional RoE in accordance with Regulation 7.16 shall be considered during the true up if the project is completed within the timelines specified in Appendix –II of the Generation Tariff Regulations 2010.

Table 39 Return on Equity approved by the Commission for the Plant (Rs Cr)

Particulars	Submitted by IPL	Approved by JSERC	Submitted by IPL	Approved by JSERC	Submitted by IPL	Approved by JSERC
	FY 2013-14		FY 2014-15		FY 2015-16	
Equity						
Opening Balance	92.40	-	92.40	92.40	92.40	92.40

Particulars	Submitted by IPL	Approved by JSERC	Submitted by IPL	Approved by JSERC	Submitted by IPL	Approved by JSERC
	FY 2013-14		FY 2014-15		FY 2015-16	
Net Additions	0.00	-	0.00	0.00	0.00	0.00
Closing Balance	92.40	-	92.40	92.40	92.40	92.40
Average Equity	92.40	-	92.40	92.40	92.40	92.40
Rate of return on equity(pre-tax)	16.00%	-	16.00%	15.50%	16.00%	15.50%
Applicable tax rate (t%)	20.008%	-	20.008%	20.008%	20.008%	20.008%
Grossed Up rate of return on equity	20.00%	-	20.00%	19.38%	20.00%	19.38%
Return on equity	4.62	-	18.48	14.86	18.48	17.90

O&M Expenses

Petitioner's submission

7.76 The Petitioner in the petition dated July 17, 2013 submitted that while calculating O&M Expenses for the Plant, norms corresponding to Coal and Lignite fired (including those based on CFBC technology) have been considered.

7.77 The summary of the O&M submitted by the Petitioner is detailed in the following table:

Table 40 O&M Expenses submitted by the Petitioner

Particulars	FY 2013-14 (3 months)	FY 2014-15	FY 2015-16
Normative O&M Expenses (Rs Lakhs/MW)	22.74	24.04	25.42
Proposed O&M Expenses (Rs Cr)	3.58	15.15	16.01

Commission's Analysis

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

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

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

(b) Administrative and General costs;

(c) Repairs and maintenance expenses; and

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

...

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 norms specifically for 63 MW sets based on CFBC technology. The Commission considered the O&M norms for 200/210/250 MW capacity CFBC Technology based thermal plants specified in the CERC Tariff Regulations 2014. It was observed that the technology specific O&M norms specified by CERC are largely in line with the O&M norms specified in the JSERC Tariff Regulations 2010.

7.80 Accordingly, the Commission has approved the O&M expenses based on the norms specified for 200/210/250 MW sets for FY 2014-15 and FY 2015-16. The O&M expenses for the first year after commissioning have been approved on pro-rata basis.

7.81 The O&M expenses approved by the Commission for the Plant are shown in the table below:

Table 41 O&M approved by the Commission (Rs Cr)

O&M Expenses	FY 2013-14	FY 2014-15	FY 2015-16
1x63 MW Plant	-	12.57	16.01

Interest on Working Capital

Petitioner's submission

7.82 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.

7.83 The Petitioner in the petition dated July 17, 2013 submitted that for calculation of Interest on Working Capital, the rate of interest has been considered at 14.45%.

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

Table 42 Interest on Working Capital submitted by the Petitioner for the Plant (Rs Cr)

Particulars	FY 2013-14	FY 2014-15	FY 2015-16
Working Capital			
Coal Cost for 2 months	12.69	12.69	12.69
Cost of secondary fuel oil for 2 months	0.43	0.43	0.43
O&M Expenses for 1 month	1.19	1.26	1.33
Maintenance Spares (20% of O&M)	2.87	3.03	3.20
Receivables for 2 months	27.14	27.02	26.65
Total Working Capital	44.31	44.43	44.31
Rate of Interest	14.45	14.45	14.45
Interest on Working Capital	1.60	6.42	6.40

Commission's Analysis

7.85 The Commission has computed the interest on working capital for the Plant 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, 2014 i.e. at 14.75% for the Plant. The detailed calculation made by the Commission is shown in the tables below:

Table 43 Interest on Working Capital approved by the Commission for the Plant (Rs)

Particulars	Submitted by IPL	Approved by JSERC	Submitted by IPL	Approved by JSERC	Submitted by IPL	Approved by JSERC
	FY 2013-14		FY 2014-15		FY 2015-16	
Working Capital						
Coal Cost for 2 months	12.69	-	12.69	10.52	12.69	12.67
Cost of secondary fuel oil for 2 months	0.43	-	0.43	0.29	0.43	0.34
O&M Expenses for 1 month	1.19	-	1.26	1.26	1.33	1.33
Maintenance Spares (20% of O&M)	2.87	-	3.03	2.51	3.20	3.20
Receivables for 2 months	27.14	-	27.02	22.38	26.65	26.79
Total Working Capital	44.31	-	44.43	36.96	44.31	44.35
Rate of Interest	14.45%	-	14.45%	14.75%	14.45%	14.75%
Interest on Working Capital	1.60	-	6.42	5.45	6.40	6.54

Cost of Secondary Fuel Oil

Petitioner's submission

7.88 The Petitioner in the petition dated July 17, 2013 submitted that the secondary fuel cost has been considered in fixed charges as per the Generation Regulations 2010. The price of Secondary Oil has been considered at Rs 50,000/KL.

7.89 The table below shows the cost of secondary fuel oil as submitted by the Petitioner for the Plant:

Table 44 Cost of secondary Fuel Oil submitted by the Petitioner for the Plant

Particulars	Unit	FY 2013-14	FY 2014-15	FY 2015-16
Unit Capacity	MW	63	63	63
Normative Plant Availability	%	75.00%	75.00%	75.00%
Gross Generation at Normative Plant Availability	MU	103.48	413.19	413.19
Normative Secondary Fuel Oil Consumption	ml/kWh	1.25	1.25	1.25
Secondary Fuel Oil Consumption at Normative Plant Availability	kL	129.35	517.39	517.39
Secondary Fuel Oil Landed Cost	Rs./kL	50,000	50,000	50,000
Secondary Fuel Oil Cost at Normative Plant availability for blending in 70:30 ratio	Rs. Cr.	0.65	2.59	2.59

Commission's Analysis

7.90 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:

$$= SFC \times LPSFi \times NAPAF \times 24 \times NDY \times IC \times 10$$

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.”

7.91 The Commission approves the cost of secondary oil consumption as shown in the table below:

Table 45 Cost of secondary fuel oil approved by the commission for the Plant

Particulars	Submitted by IPL	Approved by JSERC	Submitted by IPL	Approved by JSERC	Submitted by IPL	Approved by JSERC
	FY 2013-14		FY 2014-15		FY 2015-16	
Specific Oil Consumption (ml/kWh)	1.25	-	1.25	1.00	1.25	1.00
Weighted average landed price of secondary fuel (Rs/ml)	0.05	-	0.05	0.05	0.05	0.05
Annual Plant Availability Factor (%)	75%	-	75%	75%	75%	75%
No of days in the year	-	-	-	303	-	365
Installed Capacity (MW)	-	-	63	63	63	63
Expenses on Secondary Fuel (Rs Cr)	0.65	-	2.59	1.72	2.59	2.07

Annual Fixed Charges

7.92 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.

7.93 The following table shows the annual fixed charges submitted by the Petitioner for the Plant and approved by the Commission for the Control Period:

Table 46 Annual Fixed Charges of the Plant (Rs Cr)

Particulars	Submitted by IPL	Approved by JSERC*	Submitted by IPL	Approved by JSERC	Submitted by IPL	Approved by JSERC
	FY 2013-14		FY 2014-15		FY 2015-16	
O&M Expenses	3.58	-	15.15	12.57	16.01	16.01
Depreciation	3.98	-	15.91	13.20	15.91	15.91
Interest on Loan	7.25	-	27.47	23.37	24.42	26.30
Return on Equity (pre-tax)	4.62	-	18.48	14.86	18.48	17.90
Cost of Secondary Fuel	0.65	-	2.59	1.72	2.59	2.07
Interest on Working Capital	1.60	-	6.42	5.45	6.40	6.54
Total Fixed Cost	21.68	-	86.02	71.17	83.82	84.73

*As the generation plant was not commercially operational in FY 2012-13, the Commission has determined fixed cost components for FY 2014-15 and FY 2015-16 as specified in Paragraph 7.3 and Paragraph 7.4 of this Order.

**A8: GENERATION TARIFF OF UNIT-1 FOR CONTROL PERIOD
FY 2014-15 TO FY 2015-16***Tariff for 12% of total net capacity*

- 8.1 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 47 Approved tariff for 12% of total net capacity

Description	Unit	Unit-1	
		FY 2014-15	FY 2015-16
Variable cost/ Base Energy Charge Rate	Rs/kWh	2.05	2.05

Tariff for 88% of total net capacity

- 8.2 The tariff for 88% 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 48 Approved tariff for 88% of total net capacity – variable cost

Description	Unit	Unit-1	
		FY 2014-15	FY 2015-16
Variable cost/ Base Energy Charge Rate	Rs/kWh	2.05	2.05

Table 49 Approved tariff for 88% of total net capacity – fixed charges

Description	Unit	Unit-1	
		FY 2014-15	FY 2015-16
Total Annual Fixed Charges	Rs Cr	71.17	84.73

A9: DIRECTIVES

Date of commercial operation

- 9.1 The Petitioner is directed to notify the Commission of the date of final COD achieved for Unit 1 of 1 X 63 MW at the earliest.

Capital Cost

- 9.2 The Petitioner is directed to file for approval of final capital cost of the Unit-I of the generation station along with the Annual Performance Review (APR) petition for FY 2014-15. The Petitioner should also submit the certificate from SLDC regarding CoD of the plant, audited capital cost as on CoD of the plant, all relevant documents including schedule of disbursement of loans, repayment schedule, equity invested and revenue from sale of infirm power.

Data adequacy in next Tariff petition and timelines

- 9.3 The Commission observes with concern that the Petitioner did not submit a number of formats that are required to be submitted along with MYT Petition. The Petitioner had also not submitted the Business Plan for the Control Period along with the MYT Petition. The Commission directs the Petitioner to come up with the next tariff petition after removing the various data deficiencies highlighted throughout the Tariff Order.

Report on operational performance parameters

- 9.4 The Commission directs the Petitioner to submit a report on month wise actual achievement of all operational performance parameters including NAPAF, SHR, SFC, Auxiliary Consumption and Transit Losses along with the next Tariff petition.

Status of commissioning of Unit- II (1 X 63 MW)

- 9.5 The Commission directs the Petitioner to submit a status Report on the time lines for commissioning of Unit-II (Stage-II) of 1 X 63 MW of the power plant. The Commission further directs that Petitioner to file an application for the regulated tariff pertaining to Unit II (Stage II) as soon as the COD for this stage is finalised to ensure implementation of the MOU with the Government of Jharkhand.

Segregation of common costs between Unit-1 and Unit-II

- 9.6 The Commission directs the Petitioner to submit a report on the segregation and allocation of common costs (of capital expenditure) between Unit-I and proposed Unit-II of the generation station.

This Order is signed and issued by the Jharkhand State Electricity Regulatory Commission on this the 27th of May, 2014.

Date: 27th of May, 2014

Place: Ranchi

Sd/-

(T.MUNIKRISHNAIAH)
MEMBER (E)

Sd/-

(SUNIL VERMA)
MEMBER (F)

A10: ANNEXURES

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

Sl No.	Name S/Shri	Address/ Organization if any
1.	Sanjay Kumar Singh	Inland Power Ltd.
2.	Vijay Khera	301, Malabar Hills Namkum
3.	Arun Mohta	Ashok Nagar, 302/B
4.	Rajesh Kumar	Ashok Nagar
5.	Sayantana Banerjee	Deloitte, Kol-91
6.	M.L. Khetan	12 B/2, Motilal Nehru Road, Kolkata-29
7.	Rishi Nandan	ESE, (Coml.), JUVNL
8.	Anita Prasad	EEE (Coml.), JUVNL
9.	Mukul Kumar	AEE, JUVNL
10.	N. Somani	Inland Power Ltd.

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 Development					
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					
2.6.3	FGD Plant					

S.N.	Break Down	As per original Estimate	Actual capital expenditure as on COD	Liabilities/ provisions	Variation (3-4-5)	Reasons for Variation
	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					