Jharkhand State Electricity Regulatory Commission

Tariff Order
on
Annual Revenue Requirement
and
Determination of Generation Tariff
for
Financial Year 2011-12
for
Tata Power Company Limited
(TPCL)

Ranchi

August 2011

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List of Abbreviations

Abbreviation	Description
A&G	Administrative and General
ARR	Aggregate Revenue Requirement
COD	Date of Commercial Operation
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
MCL	Mahanadi Coalfields Ltd. (IB Valley Coalfields)
Ml	Millilitre
MT	Million Tonnes
MUs	Million Units
MW	Megawatt
O&M	Operations and Maintenance
PLF	Plant Load Factor
PPA	Power Purchase Agreement
RJC	Reprocessed Jig Coal
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
TPCL	Tata Power Company Limited
TSL	Tata Steel Limited
WB	West Bokaro

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 22.08.2002 defined the functions of JSERC as per Section 22 of the Electricity Regulatory Commission Act, 1998 to be the following, namely:-

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

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

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

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

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the Electricity Act, 2003 being brought into force, the earlier Electricity Regulatory Commission Act of 1998 stands repealed and the functions of JSERC are now defined as per Section 86 of the Act.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(b) promotion of investment in electricity industry;

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

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

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

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

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

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

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

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

Tata Power Company Limited

1.8 The Tata Power Company Limited (hereinafter referred to as 'TPCL' or the 'Petitioner'), is a company incorporated under the Indian Companies Act, VII of 1913 and is engaged in the generation, transmission and distribution of electricity in the country.

1.9 TPCL operates two units (Unit 2 and Unit 3) of Jojobera Power Plant which are the subject of tariff determination in this Tariff Order. Both Units have a capacity of 120 MW each. Unit 2 commenced its operations on February 1, 2001 and Unit 3 on February 1, 2002.

1.10 Tata Steel Limited (TSL), which is engaged in the production of iron and steel and related activities in Jamshedpur (Jharkhand) since 1907, obtained permission from the Government of Bihar to establish power plants in Jojobera in 1991 through its subsidiary company named Jamshedpur Power Company Ltd. (JAPCOL) which was subsequently transferred to Tata Power Company Limited. TPCL thereafter commissioned the two Units of 120MW each at Jojobera for supply of power to TSL.

Scope of the Present Order

1.11 This Order relates to the ARR and Tariff petition filed by TPCL before JSERC for approval of :

(a) Implementation of Order in Case 20 of 2010;

(b) Truing-up of ARR for FY 2009-10;

(c) Revision of ARR for FY 2010-11;

(d) Determination of ARR and tariff for FY 2011-12.

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

1.12 While conducting the true up for FY 2008-09, FY 2009-10 and revision for FY 2010-11 the Commission has taken into consideration the following:

(a) Provisions of the Electricity Act, 2003,

(b) Provisions of the National Electricity Policy (NEP),

(c) Provisions of the National Tariff Policy (NTP);

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

(e) Power purchase agreement (PPA) between TPCL and TSL; and

1.13 For determination of tariff for FY 2011-12, the Commission has taken into consideration the following:

(a) Provisions of the Electricity Act, 2003,

(b) Provisions of the National Electricity Policy (NEP),

(c) Provisions of the National Tariff Policy (NTP);

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

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

A2: PROCEDURAL HISTORY

Background

2.1 TISCO, now TSL, was granted sanction under section 28(1) of the Indian Electricity Act 1910 for distribution of electricity in the Jamshedpur township area in 1923. A Government of Bihar notification dated February 5, 1993 permitted the establishment of Jamshedpur Power Generating Co. Ltd (JAPCOL) as proposed by TISCO in order to set up Units 2 and Unit 3 at Jojobera, Jamshedpur.

2.2 The two parties, signed a PPA on September 12, 1997 under which both the parties agreed to set up, in a phased manner, a power plant with a total capacity of up to 500 MW at Jojobera. The PPA contained certain provisions which govern the determination of tariff for power generated at Jojobera power plant and purchased by TSL.

2.3 In April 2000, JAPCOL was amalgamated into TPCL (the Petitioner) as its subsidiary. Currently, the Petitioner operates five units at the Jojobera Power Plant, out of which two Units (Units 2 and Unit 3) have been subject to tariff determination by the Commission. Both Units have a capacity of 120 MW each.

TSL and TPCL's Appeal for treatment of Unit 2 and Unit 3 as captive units and ruling of ATE

2.4 TSL and the Petitioner jointly filed a petition with the Commission for treatment of Unit2 and Unit 3 at Jojobera power plant as captive units of TSL. The extract of the Appeal is as stated below

"The units 2 & 3 at Jojobera, Jamshedpur with a total installed capacity of 240 MW were conceived to meet the needs of steel works and are essentially captive power plants for steel works and related and associated activities of TSL i.e. steel works. The permission to establish the units 2 & 3 were granted to Jamshedpur Power Generating Co. Ltd. (JAPCOL for short) vide a notification issued by the Government of Bihar dated 05.02.93, subsequently amended on 22.03.96 under section 15-A, 43(A)(1)(C) and 44(1) of the Act of 1948. JAPCOL was later amalgamated into TPC in April 2000. The electricity generated from units 2 & 3 were from the very beginning primarily and essentially used for activities associated with manufacture of steel at TSL and for activities incidental and related thereto such as for supply to residential colonies of steel works. TSL became a sanction holder under section 28(1) of Act of 1910 and the area contiguous to the steel works forming part of the Jamshedpur city was taken over by TSL for electricity distribution. TSL is now distribution licensee in the area of Jamshedpur as an ancillary unit in principal business of production of steel. The electricity distribution and retail supply to consumers was done from the energy available after own consumption for TSL's principal business activity. TSL also purchases electricity from

TPCL's unit 1 at Jojobera for consumers of steel works. It also purchases electricity from the Damodar Valley Corporation (DVC for short) to supplement the electricity generated at TPCL's generating units. The supply of electricity to steel works from units 2 & 3 be not considered as supply of electricity by TSL as distribution licensee and therefore be not made part of annual revenue requirement and tariff proposal of TSL's activity as distribution licensee."

2.5 The Commission, in its order dated November 2, 2007, dismissed the appellants' contention that Units 2 and Unit 3 of the Jojobera plant be treated as captive power plants, on the basis of Section 9 of the Electricity Act 2003 and Rule 3 of the Electricity Rules 2005.

2.6 In response to the Commission's order on the Joint petition filed by TSL and the Petitioner, the two appellants went in to appeal to the Hon'ble ATE, challenging the orders of the Commission.

2.7 The Hon'ble ATE, too, ruled that the generating Units in question could not be treated as CPPs. The two appellants subsequently submitted a petition in the Hon'ble Supreme Court to get a stay on the Hon'ble ATE's Judgment, which was refused by the Hon'ble Court. The matter is currently pending in the Hon'ble Supreme Court.

Filing of ARR and Tariff petition by TPCL and Tariff Order for FY 2009-10

2.8 In view of the Hon'ble ATE's Judgement and in accordance with the JSERC Generation Tariff Regulations, 2004 and its powers under the Section 62 1 (a) of the Act, 2003, the Commission directed the Petitioner to file the ARR and Tariff petition with the Commission for determination of tariff of the two units (Unit 2 and Unit 3) at Jojobera.

2.9 TPCL filed the petition for determination of ARR for FY 2007-08, FY 2008-09 and FY 2009-10. The norms and guiding principles for tariff determination adopted by TPCL were not as per the JSERC Generation Tariff Regulations, 2004 but in accordance with the Power Purchase Agreement of 30 years signed with TISCO/TSL as sanction holder for distribution and generation of electricity at Jamshedpur.

2.10 During the tariff determination exercise for FY 2009-10 the Petitioner submitted that "As the PPA is legally binding on both parties, the Commission is requested to determine generation tariff for sale of power from both the Units, as per the provisions of the existing PPA."

2.11 The Commission accepted TPCL's request and determined the tariff for the FY2009-10 as per the provisions of the PPA between TPCL and TSL. The Commission, however, directed the two parties to re-negotiate the PPA:

"10.1 The Petitioner had signed a Power Purchase Agreement (PPA) with TSL Limited (TSL) on 12th September, 1997 under which the Petitioner and TSL agreed to set up, in a phased manner, a power plant with a total capacity up to 500 MW at Jojobera. The PPA laid down certain provisions governing the determination of tariff for power generated by TPCL's Jojobera Power Plant and purchased by TSL.

10.2 Since the tariff period for FY 2007-08 and FY 2008-09 is effectively over and the tariff period remaining for FY 2009-10 is also not adequate to enforce any changes in the PPA, the Commission has decided to accept the provisions of the PPA for the tariff determination exercise for FY 2007-08, FY 2008-09 & FY 2009-10 for power generated from Unit 2 and Unit 3 of Jojobera Plant.

10.3 Furthermore, since the petition for FY 2010-11 is already due for submission by TPCL, the Commission has decided to continue with the provisions of the PPA for the tariff period FY 2010-11 as well.

10.4 Meanwhile, for future tariff periods, the Commission directs the Petitioner to renegotiate the terms and conditions for the determination of tariff specified in the PPA with TSL within 6 months of the issue of this order and submit the ARR filing for FY 2011-12 as per the new agreement (to be ratified by the Commission). The terms and conditions of the tariff determination in the new agreement between TPCL and TSL should be guided by 'Generation Tariff Regulations, 2004' as amended from time to time."

Tariff Order for FY 2010-11

2.12 During the tariff determination exercise for FY 2010-11 the Petitioner reiterated its request that the Commission determine the generation tariff for sale of power from both the Units (Unit 2 and Unit 3), as per the provisions of the existing PPA.

2.13 The Commission in its previous tariff order of FY 2009-10 had accepted the Petitioner's request and had decided to follow the provisions of PPA for determination of tariff up to the FY 2010-11 for power generated by Unit 2 and Unit 3. Thus the Commission decided to determine the tariff for FY 2010-11 as per the provisions of the PPA.

2.14 However, the Commission reiterated that from FY 2011-12 onwards, the tariff for Unit 2 and Unit 3 must be determined in accordance with the Generation Tariff Regulations of the Commission. It had stated in the tariff order for FY 2010-11 that

"The Commission is in the process of revising the Generation Regulations and the same would be applicable to all the generation stations."

Tariff Petition for FY 2011-12

2.15 The Petitioner has now filed a petition for determination of tariff for FY 2011-12 for only 60 MW capacity each of Unit 2 and Unit 3 at Jojobera. It has stated that it is free to sell the remaining capacity (120 MW) to any person that it wishes to and has made the following submission in this regard:

"6. Approach to Annual Revenue Requirement of FY 2011-12

…. In the Tariff Order issued on January 20, 2010 the Hon'ble Commission had directed Tata Power to renegotiate the terms and conditions of determination of tariff in the PPA executed with Tata Steel and the same was to be in line with the Tariff Regulations. We note that the tariff determined under such Tariff Regulations is at variance to the Tariff that would have been available under the PPA signed way back in March 1997.

In our humble submission, Tata Power cannot be compelled to supply to Tata Steel under a tariff determined under Tariff Regulations. In fact, no Generating Company can be forced to supply under terms and conditions not agreeable to it. This freedom of entering into a contract has been upheld by the Hon'ble Supreme Court in Appeal No 3510-11 of 2008 in the matter of Tata Power Vs Reliance Energy. In the judgment under the said Appeal the Apex Court has held the following:

"A generating company, if the liberalisation and privatisation policy is to be given effect to, must be held free to enter into an agreement and in particular long term agreement with the distribution agency, terms and conditions of such an agreement , however, are not unregulated. Such an agreement is subject to grant of approval by the Commission. The Commission has a duty to check if the allocation of power is reasonable. If the terms and conditions relating to quantity, price, mode of supply the need of the distribution agency vis-a-vis the consumer, keeping in view its long term need are not found to be reasonable, approval may not be granted. A generating company has to make huge investment and assurances given to it that subject to the provisions of the Act he would be

free to generate electricity and supply the same to those who intend to enter into an agreement with it. Only in terms of the said statutory policy, he makes huge investment. If all his activities are subject to regulatory regime, he may not be interested in making investment

...

Generating Companies have the freedom to enter into contract and in particular long term contracts with a distribution company subject to the regulatory provisions contained in the 2003 Act."

The Hon'ble Supreme Court judgment gives the freedom to Generating Company to enter into contract it wishes to. Similarly it cannot be compelled to supply at terms which it does not wish. However, Tata Power recognizes the need of power for the Distribution Business of Tata Steel. Keeping the same in mind, Tata Power is in a position to offer only 120 MW out of the said 240 MW from Unit 2 and 3 under the new terms to be negotiated with Tata Steel, i.e., at Tariff determined under the Generation Tariff Regulations, 2010 of the Hon'ble Commission. Tata Power reserves the right not to supply the balance 120 MW power from these Units to Tata Steel Distribution and sell the same to any person at its discretion."

2.16 The Petitioner has specified the methodology for computation of tariff for the 120 MW. It has submitted that in arriving at the Tariff for 120 MW, as a first step, the Annual Fixed Charges, for 240 MW (120 MW each) have been worked out and secondly, 60 MW from Unit 2 and 60 MW from Unit 3 have been considered as being available to Tata Steel Distribution. The Annual Fixed Charges for 240 MW have been prorated to the capacity of 120 MW (60 MW each from Unit 2 and Unit 3) that is applicable to Tata Steel for FY 2011-12 to the installed capacity of 240 MW of Unit 2 and Unit 3. As regards the rate of Energy Charges (Rs/kWh), it would not change irrespective of the capacity that is offered.

2.17 The Commission has discussed its views on the above in Section 3 of the Order.

Information Gaps in the Petition for FY 2011-12

2.18 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 FY 2010-11, several deficiencies/information gaps were observed in the tariff petition submitted by the Petitioner. These information gaps were communicated to the Petitioner vide letter no. JSERC/08/2011/180 dated June 3, 2011.

2.19 The Petitioner subsequently submitted its response to the aforesaid letter and provided the requisite additional data/information vide letter no. REG/JSERC/11/133 dated June 17, 2011.

2.20 The Commission scrutinized the additional data/information and on its validation, accepted the ARR & tariff petition filed by the Petitioner.

2.21 The Commission further asked the Petitioner to provide additional information which was considered necessary for the tariff review exercise. This additional requirement was communicated to the Petitioner vide letter no. JSERC/08/2011/311 dated August 2, 2011. The Petitioner subsequently responded to the aforesaid letter vide letter number JPP/JSERC/REG/116/11 dated August 5, 2011 and informed the Commission that they shall provide responses to all the queries raised by the Commission in two parts. To this end, they have provided the requisite additional data/information vide letter no. REG/JSERC/11/194 dated August 8, 2011, JPP/JSERC/REG/119/11 dated August 16, 2011.

2.22 The Commission held another meeting with the Petitioner on August 16, 2011 and asked them to provide further clarifications pertaining to the information they had previously submitted. The Petitioner submitted these clarifications to the Commission on August 17, 2011 vide letter number JPP/JSERC/REG/124/11.

Inviting Public Comments/Suggestions

2.23 After the acceptance of the ARR and tariff petition filed by the Petitioner, the Commission directed the Petitioner to make available copies of the same to the members of general public on request, and also issue a public notice inviting comments/ suggestions on the ARR and tariff petition.

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

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

Newspaper	Date
Dainik Jagran	May 12, 2011 and May 13, 2011
Hindustan	May 12, 2011 and May 13, 2011
Hindustan Times	May 12, 2011 and May 13, 2011
The Telegraph	May 12, 2011 and May 13, 2011

2.25 Subsequently, the Commission also issued a notice on its website www.jserc.org and various newspapers for conducting the public hearing on the ARR and Tariff petition filed by TPCL. 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

Newspaper	Date
Hindustan (Hindi)	July 6, 2011
Prabhat Khabar (Hindi)	July 6, 2011
Ranchi Express (Hindi)	July 6, 2011
Dainik Jagran (Hindi)	July 7, 2011
Uditvani (Hindi)	July 6, 2011

Newspaper	Date
Hindustan Times (English)	July 7, 2011
Sanmarg	July 7, 2011

Submission of Comments/Suggestions and Conduct of Public Hearing

2.26 A public hearing was held on July 10, 2011 at Jamshedpur and many respondents voiced their views on the ARR and tariff petition filed by the Petitioner. The comments/suggestions voiced by the respondents and the Petitioner's response thereon along with the Commissions analysis on the response provided by the Petitioner are detailed in the Section **Error! Reference source not found.**of this Order.

A3: TREATMENT OF GENERATING CAPCITY

Petitioner Submission

3.1 The Petitioner has filed a petition for determination of tariff for FY 2011-12 for only 60 MW capacity each of Unit 2 and Unit 3 at Jojobera. It has stated that it is free to sell the remaining capacity (120 MW) to any person that it wishes to and has made the following submission in this regard:

"6. Approach to Annual Revenue Requirement of FY2011-12

…. In the Tariff Order issued on January 20, 2010 the Hon'ble Commission had directed Tata Power to renegotiate the terms and conditions of determination of tariff in the PPA executed with Tata Steel and the same was to be in line with the Tariff Regulations. We note that the tariff determined under such Tariff Regulations is at variance to the Tariff that would have been available under the PPA signed way back in March 1997.

In our humble submission, Tata Power cannot be compelled to supply to Tata Steel under a tariff determined under Tariff Regulations. In fact, no Generating Company can be forced to supply under terms and conditions not agreeable to it. This freedom of entering into a contract has been upheld by the Hon'ble Supreme Court in Appeal No 3510-11 of 2008 in the matter of Tata Power Vs Reliance Energy. In the judgment under the said Appeal the Apex Court has held the following:

"A generating company, if the liberalisation and privatisation policy is to be given effect to, must be held free to enter into an agreement and in particular long term agreement with the distribution agency, terms and conditions of such an agreement , however, are not unregulated. Such an agreement is subject to grant of approval by the Commission. The Commission has a duty to check if the allocation of power is reasonable. If the terms and conditions relating to quantity, price, mode of supply the need of the distribution agency vis-a-vis the consumer, keeping in view its long term need are not found to be reasonable, approval may not be granted. A generating company has to make huge investment and assurances given to it that subject to the provisions of the Act he would be free to generate electricity and supply the same to those who intend to enter into an agreement with it. Only in terms of the said statutory policy, he makes huge investment. If all his activities are subject to regulatory regime, he may not be interested in making investment

…

Generating Companies have the freedom to enter into contract and in particular long term contracts with a distribution company subject to the regulatory provisions contained in the 2003 Act."

The Hon'ble Supreme Court judgment gives the freedom to Generating Company to enter into contract it wishes to. Similarly it cannot be compelled to supply at terms which it does not wish. However, Tata Power recognizes the need of power for the Distribution Business of Tata Steel. Keeping the same in mind, Tata Power is in a position to offer only 120 MW out of the said 240 MW from Unit 2 and 3 under the new terms to be negotiated with Tata Steel, i.e., at Tariff determined under the Generation Tariff Regulations, 2010 of the Hon'ble Commission. Tata Power reserves the right not to supply the balance 120 MW power from these Units to Tata Steel Distribution and sell the same to any person at its discretion."

3.2 The methodology for computation of tariff for the 120 MW (60 MW each from Unit 2 and Unit 3) of regulated capacity has been submitted as below:

"…. in arriving at the Tariff for 120 MW, as a first step, the Annual Fixed Charges, for 240 MW (120 MW each) have been worked out and secondly, 60 MW from Unit 2 and 60 MW from Unit 3 have been considered as being available to Tata Steel Distribution. The Annual Fixed Charges for 240 MW have been prorated to the capacity of 120 MW (60 MW each from Unit 2 & 3) that is applicable to Tata Steel for FY 2011-12 to the installed capacity of 240 MW of Unit 2 and 3.

As regards the rate of Energy Charges (Rs/kWh), it would not change irrespective of the capacity that is offered."

Views of the Commission

3.3 The functions of the State Commission are laid out in Section 86 of the Electricity Act 2003. The relevant portions of Section 86 (1) are quoted below:

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

(b) regulate electricity purchase and procurement process of distribution license including the price at which the 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."

3.4 It is clear from the above provisions of the Electricity Act, 2003 that the Commission has the powers to determine the generation tariff within the state and also regulate the electricity purchased and the procurement process of distribution licensee including the price at it shall be procured from the generating stations.

3.5 The Petitioner, Tata Power Company Limited, has filed the petition for determination of tariff for FY 2011-12 for only 60 MW capacity each of Unit 2 and Unit 3 at Jojobera and has stated that it is free to sell the remaining capacity (120 MW) to any person. Meanwhile, in the Public Hearing held on July 10, 2011, the Petitioner has stated that it is also selling the remaining power to the Tata Steel Limited (TSL), which is the distribution licensee of Jamshedpur Town. The relevant extract from the power point presentation made by the Petitioner in the Public Hearing is quoted below:

*"**The Price of Balance 120 MW Capacity from Unit 2 & Unit 3 for FY 2011-12***

- *The balance 120 MW Capacity of Unit 2&3 is being offered to Tata Steel Distribution keeping in mind the interest of the consumers & availability of power till it can make arrangement through Case 1 Competitive Bidding Route.*

- *The balance 120 MW is being offered at a single rate of Rs 4.02/kWh for FY 2011-12"*

3.6 The Commission has verified through the power purchase bills of FY 2011-12 submitted by Tata Steel Limited and has also found that the remaining 120 MW capacity of TPCL is being sold to TSL.

3.7 The Commission has noted from the verification of power purchase bills of FY 2011-12 submitted by Tata Steel Limited that the Petitioner is charging a rate higher than that fixed by the Commission in the Tariff Order of FY 2010-11. The Commission views this action of the Petitioner as a violation of the Tariff Order of the Commission and will take up the matter separately.

3.8 With regard to the Judgement passed by the Hon'ble Supreme Court in Appeal No. 3510-11 of 2008, the Commission notes that while the Hon'ble Supreme Court has upheld the freedom of a generating company to enter into a contract with a distribution licensee, it has also mentioned that the terms and conditions of such an agreement are not unregulated. The Hon'ble Court has ruled that

"Such an agreement is subject to grant of approval by the Commission.

... If the terms and conditions relating to quantity, price, mode of supply the need of the distribution agency vis-a-vis the consumer, keeping in view its long term need are not found to be reasonable, approval may not be granted."

3.9 In view of the relevant provisions of Section 86 of the Act, the Judgement passed by the Hon'ble Supreme Court in Appeal No. 3510-11 of 2008 and the fact that the remaining power is also being sold within the State to a distribution licensee, (to the same licensee in this case) the Commission views that the price at which TPCL has to sell the power for the capacity of 240 MW for its two units - Unit 2 and Unit 3, would be the regulated price determined by the Commission in this Tariff Order.

3.10 Meanwhile, the Commission, in its previous Tariff Orders, had directed the Petitioner to renegotiate the terms and conditions for the determination of tariff specified in the PPA with TSL and submit the ARR filing for FY 2011-12 as per the new agreement (to be ratified by the Commission). The terms and conditions of the tariff determination in the new agreement between the Petitioner and TSL were to be guided by 'Generation Tariff Regulations, 2004' as amended from time to time. The Petitioner has, however, not yet submitted the renegotiated PPA before the Commission.

3.11 The Commission has notified Generation Tariff Regulations, 2010, in October 2010, to bring the Generation Regulations in the state, as far as possible, in line with the latest CERC (Terms and Conditions of Tariff) Regulations, 2009. The provisions contained in these Regulations have been designed to provide reasonable incentive to Generating Companies while ensuring that the consumers are also protected from the burden of high tariffs.

3.12 The Commission is thus of the view that the Generation Tariff payable to any generating company (by the distribution licensees within the state) would be determined only as per the terms and conditions specified in the Generation Tariff Regulations, 2010 as amended from time to time.

3.13 Hence, in view of the above facts and circumstances and legal provisions including the Judgement of the Hon'ble Supreme Court, the contention of the Petitioner that tariff should only be determined for 120 MW of generating capacity of Unit 2 and Unit 3 (out of the total combined capacity of 240 MW) is inadmissible.

A4: SUMMARY OF THE PETITION FILED BY THE PETITIONER

Overview of the Thermal Stations

4.1 TPCL currently operates five units at the Jojobera power plant. Of these, two units i.e. Unit 2 and Unit 3 are the subject of ARR and tariff determination in the petition filed by TPCL. The following table summarizes the information pertaining to both the units which are subject to ARR and tariff determination exercise.

Table 3: Unit 2 and Unit 3

S. No.	Unit	Installed Capacity(MW)	Status of Operation	Commercial Date of Operation
1	Unit 2	120	Operational	February 1, 2001
2	Unit 3	120	Operational	February 1, 2002

Implementation of Order in Case 20 of 2010

4.2 The Petitioner has submitted that it had filed a Review Petition (Case 20 of 2010) against the Tariff Order dated July 22, 2010 and had requested for revision of energy charges for FY 2008-09. The Commission through its Order dated October 28, 2010 decided to true up the energy charges for Unit 2 and Unit 3 with the next tariff petition. The Petitioner has requested for revision of the energy charges and interest and working capital for the year as shown in the Table below.

Table 4: Revised Expenses for FY 2008-09

Particulars	Unit 2	Unit 3
Energy Charges	91.97	99.72
Interest on Working Capital	5.00	5.35
Total	**96.97**	**105.07**

True up of FY 2009-10

4.3 The Petitioner has requested for true up of FY 2009-10 and has submitted the actual performance of Units 2 and Unit 3 for FY 2009-10 on various operational and financial related parameters. It has calculated the revised generation tariff based on the principles enshrined in the PPA between TPCL and TSL.

4.4 The energy charges and fixed cost as proposed by the Petitioner for FY 2009-10, are summarised in the following table:

Table 5: Submitted Energy Charges for FY 2009-10

Particulars	Units	Unit 2	Unit 3
Plant Load Factor	%	74.75	79.39
Heat Rate	kCal / kWh	2632	2648
Gross Generation	MUs	785.80	834.59
Auxiliary Consumption	%	10.58%	10.58%
Net Generation	MUs	702.68	746.25
Specific Oil Consumption	ml / kWh	0.89	1.06
Energy Charges	Rs Cr	103.33	111.82

Table 6: Submitted Fixed Charges for FY 2009-10 (Rs Cr)

Particulars	Unit 2	Unit 3
O&M expenses	22.23	20.14
Depreciation	32.54	32.19
Interest on Loan	2.00	5.90
Return on Equity	25.10	28.13
Interest on Working Capital	5.30	5.66
Income Tax (MAT)	5.14	5.76
Total Fixed Charges	92.32	97.79

Revised estimation for FY 2010-11

4.5 The Petitioner has requested for revision of ARR of FY 2010-11 based on the actual performance from April 2010 to January 2010 and projected performance for February 2011 to March 2011, based on the principles enshrined in the PPA between TPCL and TSL. The energy charges and fixed cost as submitted by the Petitioner for tariff period of FY 2010-11, are summarised in the following tables:

Table 7: Submitted Energy Charges for FY 2010-11*

Particulars	Units	Unit 2	Unit 3
Plant Load Factor	%	77.23	82.78
Heat Rate	kCal / kWh	2680	2680
Gross Generation	MUs	811.89	870.15
Auxiliary Consumption	%	10.40%	10.40%
Net Generation	MUs	727.45	779.66
Specific Oil Consumption	ml / kWh	0.79	0.88
Energy Charges	Rs Cr	117.12	125.37

*As submitted in the ARR Petition

Table 8: Submitted Fixed Charges for FY 2010-11 (Rs. Cr)*

Particulars	Unit 2	Unit 3
O&M expenses	23.79	21.55
Depreciation	32.54	32.17
Interest on Loan	0.00	1.96
Return on Equity	27.06	31.10
Interest on Working Capital	5.57	5.89
Income Tax (MAT)	6.74	7.74
Total Fixed Charges	95.70	100.42

*As submitted in the ARR Petition

Annual Revenue Requirement of FY 2011-12

4.6 The Petitioner has submitted that it has filed the ARR petition for FY 2011-12 in line with Generation Tariff Regulation, 2010. Further, the ARR and Generation Tariff for FY 2011-12 has been proposed for 60 MW power each from Units 2 and Unit 3 allocated to TSL (Distribution Area) only. The energy charge rate and the fixed cost as submitted by the Petitioner is shown in the following tables

Table 9: Submitted Energy Charges for FY 2011-12

Particulars	Units	Unit 2	Unit 3
Plant Load Factor	%	83.01%	86.04%
Heat Rate	kCal / kWh	2652	2652
Gross Generation	MUs	875.04	906.96
Auxiliary Consumption	%	10%	10%
Net Generation	MUs	787.54	816.26
Specific Oil Consumption	ml / kWh	1.02	0.99
Energy Charge Rate (Rs/kWh)	Rs/kWh	1.71	1.71

Table 10: Submitted Fixed Charges for FY 2011-12 (Rs. Cr)

Particulars	Unit 2	Unit 3
O&M expenses	33.22	31.14
Depreciation	23.25	23.10
Interest on Loan	1.83	2.01
Return on Equity	26.84	26.15
Interest on Working Capital	8.40	8.28
Incentive	6.78	3.29
Cost of LDO at Normative Availability	4.03	4.03
Total Fixed Charges	104.35	98.00

A5: PUBLIC CONSULTATION PROCESS

5.1 The public hearing was held on July 10, 2011 in Jamshedpur. The list of participants is attached as **Annexure-I**.

5.2 The comments and suggestion of the members of the public along with the response thereon of the Petitioner and the views of the Commission are detailed hereunder:

General Comments/Suggestions

Public Comments/Suggestions

5.3 Some consumers who attended the public hearing highlighted that the petition submitted by TPCL only mentions sale of 120 MW of power to TSL whereas TSL in its tariff petition has mentioned that the entire 240 MW of power being generated by TPCL is purchased by TSL. Consumers asked the Petitioner to clarify this point.

5.4 The Consumers further pointed out that the cost incurred by the TPCL on account of transportation of coal is exorbitant and that they should look for more economical means of transportation of coal.

5.5 Consumers also opposed any hike in tariff and said that tariff should be maintained at the current level itself.

5.6 Some consumers also pointed out that the company had not taken any measures or initiatives for controlling pollution and any expenses claimed by them on such expenses should be disallowed.

5.7 Consumers also mentioned that the petition filed by the company does not disclose the cost of coal purchased from mines owned by their own group company, Tata Steel.

Petitioner's response

5.8 The Petitioner clarified that they are going to sell the entire 240 MW of capacity to TSL. Out of this 240 MW, 120 MW shall be sold at the tariff determined by the Commission and the balance 120 MW shall be sold at firm price to be determined between the buyer and seller. The Petitioner further stated, that though the petition is silent on matter of sale of the balance 120 MW, it has clarified this point in the presentation made by it in the public hearing that the balance 120 MW will also be sold to TSL.

5.9 The Petitioner also mentioned that the cost incurred on transportation is at the standard rate charged by the Indian Railways for transport of coal. Further, they mentioned that all bills pertaining to transport cost shall be made available at the behest of the Commission.

5.10 The Petitioner stated that they are taking all requisite measures to control pollution.

5.11 The Petitioner also stated that price of coal procured from all sources has been clearly disclosed in the Petition irrespective of whether or not these sources is a related group company.

Commission's View

5.12 The Commission has already mentioned its stand on the sale of 240 MW from the two Units of Jojobera in Section A3: of this Order.

5.13 The Commission has prudently checked the transportation cost of TPCL and approved it accordingly. However, the Commission appreciates the concerns raised by the consumers and directs the Petitioner to look for avenues to control the transportation cost.

5.14 The Commission has approved Tariffs in line with the earlier methodology followed by the Commission for period upto FY 2010-11 and has followed the Generation Tariff Regulations, 2010 for allowing the costs and tariff for FY 2011-12.

5.15 The Commission has given directives with regard to the Pollution Control to the Petitioner in the Directives Section of the Tariff Order.

5.16 The Commission has prudently checked the sources of coal purchase before approving the costs pertaining to the same.

A6: IMPLEMENTATION OF ORDER IN CASE 20 OF 2010 FOR TRUE UP OF FY 2008-09

6.1 TPCL has sought approval for the true up of energy charges for the year FY 2008-09 in implementation of the Order of the Commission in Case No 20 of 2010. Such true up of energy charges has also resulted in a change in the interest on working capital previously approved by the Commission.

Weighted Average Gross Calorific Value (GCV)

Petitioner's submission

6.2 TPCL had filed a review petition (Case 20 of 2010) to reconsider the energy charges approved for FY 2008-09 by taking into account the weighted average of the gross calorific value of coal instead of using simple average that had been previously used at the time of approving energy charges in the Tariff Order for FY 2010-11.

6.3 The GCV of various types of coal submitted by the Petitioner has been arrived at by dividing the total heat input contributed by a particular type of coal during the year by the corresponding coal consumption of the year. Thus, weighted average GCV of coal has been computed by considering coal consumption as weights.

6.4 The Petitioner has submitted data pertaining to the computation of yearly weighted average GCV of different types of coal used. The yearly weighted average has been computed on the basis of the monthly weighted average GCV (this information has been submitted to the Commission vide letter no.JPP/JERC/REG/150/10 on September 3, 2010) of coal for various sources from daily GCV of coal for FY 2008-09.

6.5 The Petitioner further submitted that the energy charges applicable for FY 2008-09 shall also require to be trued up on the basis of the revised weighted average GCV computation submitted by them. The Petitioner has submitted the revised calculation of energy charges for Unit 2 and Unit 3 that has been computed by considering the weighted average GCV of various sources of coal instead of taking into account the simple average of GCV of various sources of coal as was done previously.

6.6 The Petitioner has requested the Commission to approve energy charges for FY 2008-09 for Unit 2 to the tune of Rs.91.97 Cr (as against Rs.91.12 Cr that had been approved in the Tariff Order issued in FY 2010-11) and for Unit 3 to the tune of Rs.99.72 Cr (as against Rs.99.08 Cr that had been approved in the Tariff Order issued in FY 2010-11)

Commission's View

6.7 The Commission through its Order dated October 28, 2010 decided to true up the energy charges of Units 2 and 3 in the Tariff Order for FY 2011-12.

6.8 The Commission conducted a prudence check to determine the process by which the GCV of various sources of coal is measured and recorded by the Petitioner. The process of measurement and recording of GCV of coal used from various sources in both Unit 2 and Unit 3 was reviewed. A sample check was conducted to verify whether the GCV of all sources of coal used in either of the two units is being recorded correctly on a daily basis. The GCV of coal recorded on a daily basis, in turn, forms the basis of determination of monthly GCV of coal used which in turn is used to determine the weighted average GCV of all sources of coal consumed during the year in each of the two units.

6.9 Accordingly, for the purpose of true up, the GCV of coal consumed at Unit 2, the Commission approves the actual GCV of Middling Coal at 4466 kCal/kg, MCL Coal at 2998 kCal/kg, imported coal at 2993 kCal/kg, RJC coal at 3111 kCal/kg.

6.10 For Unit 3, the Commission approves the actual GCV of Middling Coal at 4472 kCal/kg, MCL Coal at 2981 kCal/kg, imported coal at 2980 kCal/kg, RJC coal at 3077 kCal/kg.

6.11 The Table below provides calculations of the weighted average GCV that has been approved for FY 2008-09 for different sources of coal based on the submissions made by the Petitioner.

Table 11: Weighted Average GCV (kCal/kg) for FY 2008-09

	Unit 2			Unit 3		
Particulars	Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO	Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO
Middling Coal	4494	4466	4466	4493	4472	4472
MCL Coal	3035	2998	2998	3011	2981	2981
RJC Coal	3058	3111	3111	3058	3077	3077
Imported Coal	2925	2993	2993	2923	2980	2980
Tailing Coal	3486	3126	3126	3477	3299	3299

6.12 The change in calculation of GCV has led to a change in the computation of energy charges vis-à-vis that allowed to the Petitioner for FY 2008-09 in Tariff Order issued in FY 2010-11.

6.13 The Commission has considered the computation submitted by the Petitioner with respect to energy charges for FY 2008-09. The Commission concludes that the energy charges for both Units 2 and 3 for FY 2008-09 need to be trued up in the light of revision of weighted average GCV considered for different sources of coal.

6.14 The table below provides trued up energy charges for FY 2008-09 as per the GCV that has been approved on the basis of the revised weighted average GCV computation.

Table 12 : Energy Charges (Rs Cr) for FY 2008-09

	Unit 2			Unit 3		
Particulars	Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO	Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO
Energy Charges	91.12	91.97	91.97	99.09	99.72	99.72

Interest on Working Capital

Petitioner's submission

6.15 The Petitioner has requested the Commission to approve the revision in interest on working capital due to the change in energy charges. As discussed above, energy charges have changed because of the change in weighted average GCV computed for various sources of coal for FY 2008-09.

Commission's View

6.16 The Commission has approved energy charges for Unit 2 and Unit 3 that have been re-computed based on the weighted average GCV allowed to the Petitioner for FY 2008-09 and agrees with the Petitioner that the interest on working capital needs to be recomputed. Thereby, the following Table provides calculations of the interest on working capital that has been approved by the Commission for FY 2008-09.

Table 13: Interest on working capital for FY 2008-09 (Rs Cr)

	Unit 2			Unit 3		
Particulars	Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO	Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO
Coal cost for 1 month		7.48	7.48		8.20	8.20
LDO Cost for 2 months		0.36	0.36		0.21	0.21
O&M expenses for 1 month		1.73	1.73		1.57	1.57
Receivables for 2 months		31.21	31.20		33.70	33.70
Total working capital		40.79	40.77		43.69	43.69
Interest on working capital	4.97	5.00	5.00	5.33	5.35	5.35

A7: TRUE UP FOR FY 2009-10

7.1 The Petitioner has sought approval from the Commission for true up of variation in certain elements of the ARR for FY 2009-10 which were provisionally trued up by the Commission in the Tariff Order of FY 2010-11.

7.2 The Commission has analysed all the components of ARR for FY 2009-10 and has undertaken the true up exercise of various components after due prudence check. The component-wise description of the Petitioner's submission and the Commission's analysis thereof is provided hereunder.

Basis of Variable Cost and Fixed Cost Determination

Petitioner's submission

7.3 The Petitioner has submitted its proposal of variable and fixed charges in accordance with the terms and conditions of the PPA and for parameters not specified in the PPA on the basis of actual audited data.

Commission's analysis

7.4 For FY 2009-10, the Commission had decided to undertake the true up exercise also in accordance with the terms of PPA between TSL and the Petitioner (for parameters specified in PPA) and in accordance with 'Generation Tariff Regulations, 2004' (for parameters not specified in PPA).

7.5 However, for parameters where the actual figures show improvement in the efficiency of the Generation Company or are more cost-effective vis-à-vis the terms and conditions of the PPA/Generation Tariff Regulations, 2004, the Commission has decided to approve as per actuals for the purpose of the true up exercise.

Plant Load Factor (PLF)

Petitioner's submission

7.6 For the purpose of true up of costs for FY 2009-10, the Petitioner has submitted the actual PLF in FY 2009-10, which is 74.75% for Unit 2 and 79.39% for Unit 3.

7.7 The Petitioner has submitted that the actual PLF for FY 2009-10 has been determined to be the same as the PLF approved by the Commission for FY 2009-10 for both Unit 2 and Unit 3.

Commission's analysis

7.8 The Commission has approved PLF for both units at the same level as that approved for FY 2009-10 in the previous Tariff Order of FY 2010-11. In its previous tariff order, the Commission has approved a PLF of 74.75% for Unit 2 and 79.39% for Unit 3.

7.9 The following table provides the trued up PLF for Unit 2 and Unit 3 for FY 2009-10.

Table 14: PLF for FY 2009-10

Particulars	Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO
Unit 2	74.75%	74.75%	74.75%
Unit 3	79.39%	79.39%	79.39%

Gross Generation

Petitioner's submission

7.10 The Petitioner has submitted that the gross generation of FY 2009-10 of Unit 2 was 785.80 MUs and that of Unit 3 for FY 2009-10 is 834.59 MUs on the basis of the actual PLF of 74.75% and 79.39% respectively for Unit 2 and Unit 3.

Commission's analysis

7.11 The gross generation for FY 2009-10 was provisionally trued up by the Commission in the previous tariff order issued for FY 2010-11 at 785.66 MUs for Unit 2 and 834.58 MUs for Unit 3. The Petitioner has submitted the actual gross generation values of FY 2009-10 for Unit 2 at 785.80 MUs and for Unit 3 at 834.59 MUs. The Commission has approved the gross generation values for both units as submitted by the Petitioner. The following Table provides gross generation for Units 2 and 3 for FY 2009-10.

Table 15 : Gross Generation (in MUs) for FY 2009-10

Particulars	Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO
Unit 2	785.66	785.80	785.80
Unit 3	834.58	834.59	834.59

Auxiliary Consumption

Petitioner's submission

7.12 The Petitioner has submitted that the actual auxiliary consumption during FY 2009-10 was 10.58% for Unit 2 and 10.58% for Unit 3.

Commission's analysis

7.13 The Commission in its previous Tariff Order of FY 2010-11 had approved auxiliary consumption for FY 2009-10 at 10.58% for both Unit 2 and Unit 3. The Petitioner has maintained the same level of auxiliary consumption in the submission made by them in the petition submitted for FY 2011-12. The Commission has therefore retained the auxiliary consumption approved in the previous tariff order, as is shown in the table below.

Table 16 : Auxiliary Consumption for FY 2009-10

Particulars	Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO
Unit 2	10.58%	10.58%	10.58%
Unit 3	10.58%	10.58%	10.58%

Net Generation

Petitioner's submission

7.14 The Petitioner has submitted net generation of 702.68 MUs and 746.25 MUs for Unit 2 and Unit 3 respectively.

Commission's analysis

7.15 The Commission in its previous tariff order had approved net generation of 702.67 MUs and 746.24 MUs for Unit 2 and Unit 3 respectively. The Commission determines net generation for FY 2009-10 at 702.68 MUs for Unit 2 and 746.25 MUs for Unit 3 on the basis of approved values of PLF, gross generation and auxiliary consumption. The Table below provides net generation for Units 2 and 3 for FY 2009-10.

Table 17 : Net Generation (In MUs) for FY 2009-10

Particulars	Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO
Unit 2	702.67	702.68	702.68
Unit 3	746.24	746.25	746.25

Station Heat Rate

Petitioner's submission

7.16 The Petitioner has submitted that the station heat rate in FY 2009-10 for Unit 2 was 2632 kCal/kWh and for Unit 3 was 2648 kCal/kWh.

7.17 The Petitioner has stated that at the time of execution of PPA, it was agreed with TSL that the actual gross station heat rate will be considered for the purpose of tariff computation.

7.18 The Petitioner has submitted the heat rate for FY 2009-10 has been actually determined to be lower than that approved at the time of provisional true up in the Tariff Order issued for FY 2010-11. The Petitioner has therefore requested the Commission to approve the actual SHR for 2009-10.

Commission's analysis

7.19 The Commission in its previous tariff order had approved SHR of 2680 kCal/kWh for Unit 2 and Unit 3 respectively for FY 2009-10.

7.20 A lower Station Heat Rate results in fuel cost efficiency and helps bring about overall reduction in costs. Since the actual SHR submitted by the Petitioner is lower than that approved by the Commission in its previous tariff order, the Commission approves the actual SHR, as submitted by the Petitioner. The Table below provides SHR for Units 2 and 3 for FY 2009-10

Table 18 : SHR (kCal/kWh) for FY 2009-10

Particulars	Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO
Unit 2	2680	2632	2632
Unit 3	2680	2648	2648

Specific Oil Consumption

Petitioner's submission

7.21 The Petitioner has submitted specific oil consumption of 0.89 ml/kWh and 1.06 ml/kWh for Unit 2 and 3 respectively during FY 2009-10.

Commission's analysis

7.22 The Commission in its previous tariff order had approved specific oil consumption of 0.97 ml/kWh for both Unit 2 and Unit 3 based on the provisional estimates submitted by the Petitioner.

7.23 The Petitioner has now submitted that the specific oil consumption of Unit 2 for FY 2009-10 earlier estimated to be 0.97 ml/kWh in the Tariff Order issued in FY 2010-11, was actually determined to be lower at 0.89 ml/kWh. However, the specific oil consumption of Unit 3 for FY 2009-10 was actually determined to be higher at 1.06 ml/kWh than the estimated consumption approved at 0.97 ml/kWh in the Tariff Order issued in FY 2010-11.

7.24 The Generation Tariff Regulations, 2004 specify that maximum secondary fuel oil consumption for coal-based generating stations shall be 2.0 ml/kWh. The Commission notes that the actual performance of the station is superior to the norm specified in the said Regulations.

7.25 The Commission therefore approves the actual consumption of oil as submitted by the Petitioner at 0.89 ml/kWh for Unit 2 and 1.06 ml/kWh for Unit 3. The Table below provides details regarding specific oil consumption for both units for FY 2009-10.

Table 19 : Specific Oil Consumption (ml/kWh) for FY 2009-10

Particulars	Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO
Unit 2	0.97	0.89	0.89
Unit 3	0.97	1.06	1.06

Gross Calorific Value (GCV) of Primary and Secondary Fuel

Petitioner's submission

7.26 The Petitioner has submitted that coal was primarily sourced from West Bokaro colliery of Tata Steel (Middling Coal) and Mahanadi Coal fields, Orissa (MCL Coal). However, the coal from other sources was also procured during FY 2009-10 including RJC Coal and imported coal to make up for the severe crisis in coal stock owing to the shortfall in the supply of Middling Coal.

7.27 The Petitioner has further submitted that the annual GCV from various sources of coal has been computed as weighted average of monthly GCV from a particular source using the monthly consumption from that source as weight. Monthly GCV has been determined by computing weighted average of GCV of coal from that source using the daily coal consumption from that source as weight.

7.28 The Petitioner has also submitted data pertaining to actual month wise weighted average GCV for different sources of coal for FY 2009-10.

7.29 Accordingly, for the purpose of true up the GCV of coal consumed at Unit 2, the Petitioner has submitted that the actual GCV of Middling Coal was determined at 4403 kCal/kg, GCV of MCL Coal was determined at 2813 kCal/kg, GCV of imported coal was determined at 3354 kCal/kg, and GCV of RJC coal at 2885 kCal/kg in FY 2009-10.

7.30 For Unit 3, the Petitioner has submitted that the actual GCV of Middling Coal was determined at 4366 kCal/kg, GCV of MCL Coal was determined at 2813 kCal/kg, GCV of imported coal was determined at 3338 kCal/kg, and GCV of RJC coal at 2881 kCal/kg in FY 2009-10.

7.31 The Petitioner has submitted that the GCV of secondary fuel for FY 2009-10 was determined at 9100 kCal/l for both units.

7.32 The Petitioner has submitted in the additional information and clarification provided by them that for the purpose of computation of GCV of secondary fuel (LDO), the specific gravity of LDO is assumed to be constant at 0.91 and GCV of LDO is taken at 10000 kCal/Kg. Hence the GCV of LDO in kCal/litre works out to 9100 kCal/l. Further, they have submitted that the specific gravity of LDO usually varies from 0.88 to 0.93. However, it is a standard industry practice to consider the specific gravity of LDO at 0.91.The Petitioner has followed the same approach for computation of GCV of LDO.

Commission's analysis

7.33 The Commission conducted a prudence check to determine the process by which the GCV of various sources of coal is measured and recorded by the Petitioner. The process of measurement and recording of GCV of coal used from various sources in both Unit 2 and Unit 3 was reviewed. A sample check was conducted to verify whether he GCV of all sources of coal used in either of the two units is being recorded correctly on a daily basis. The GCV of coal recorded on a daily basis, in turn, forms the basis of determination of monthly GCV of coal used which in turn is used to determine the weighted average GCV of all sources of coal consumed during the year in each of the two units.

7.34 Accordingly, for the purpose of true up, the GCV of coal consumed at Unit 2, the Commission approves the actual GCV of Middling Coal at 4403 kCal/kg, GCV of MCL Coal at 2813 kCal/kg, GCV of imported coal at 3354 kCal/kg, and GCV of RJC coal at 2885 kCal/kg in FY 2009-10.

7.35 For Unit 3, the Commission approves the actual GCV of Middling Coal at 4366 kCal/kg, GCV of MCL Coal at 2813 kCal/kg, GCV of imported coal at 3338 kCal/kg, and GCV of RJC coal at 2881 kCal/kg in FY 2009-10.

7.36 The Commission has considered the explanation provided by the Petitioner with respect to computation of GCV of LDO. In line with the norms adopted in previous Tariff Orders and after validating of data submitted by the Petitioner, the Commission approves the GCV of secondary fuel at 9100 kCal/l for both the Units for FY 2009-10.

7.37 The following Table provides the GCV of coal and secondary fuel (LDO) approved by the Commission for FY 2009-10.

Table 20 : GCV of Coal (kCal/kg) and secondary fuel (kCal/l) for FY 2009-10

	Unit 2			Unit 3		
Type of Coal	**Approved by JSERC in TO FY 2010-11**	**Submitted by TPCL**	**Approved by JSERC in this TO**	**Approved by JSERC in TO FY 2010-11**	**Submitted by TPCL**	**Approved by JSERC in this TO**
Middling	4405	4403	4403	4374	4366	4366

	Unit 2			Unit 3		
Type of Coal	Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO	Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO
Coal						
MCL Coal	2829	2813	2813	2809	2813	2813
Imported Coal	3138	3354	3354	3329	3338	3338
RJC Coal	2877	2885	2885	2873	2881	2881
Secondary Fuel (LDO)	9100	9100	9100	9100	9100	9100

Price of Primary and Secondary Fuel

Petitioner's submission

7.38 The Petitioner has submitted the actual landed cost for various types of coal consumed in Unit 2 and Unit 3 in FY 2009-10 for true up by the Commission.

7.39 The Petitioner has submitted that in FY 2009-10, with respect to Unit 2, the landed cost of Middling Coal was Rs.2044 per ton, landed cost of MCL Coal was Rs. 1064 per ton, landed cost of imported coal was Rs.6607 per ton and landed cost of RJC coal was Rs.1889 per ton.

7.40 For Unit 3, the landed cost of Middling Coal was Rs.2035 per ton, landed cost of MCL Coal was Rs. 1068 per ton, landed cost of imported coal was Rs.6607 per ton and landed cost of RJC coal was Rs.1928 per ton.

7.41 The Petitioner has submitted the price of secondary fuel as Rs. 39500/kl for Unit 2 and Rs 39849/kl for FY 2009-10.

Commission's analysis

7.42 The Commission had provisionally trued up the landed cost of coal as well as secondary fuel consumed for Unit 2 and Unit 3 for FY 2009-10 in the Tariff Order of FY 2010-11 on the basis of submissions made by the Petitioner and prudency check conducted by the Commission.

7.43 The Petitioner has now submitted that the actual landed cost of coal and secondary fuel consumed in FY 2009-10 is the same as that submitted by them at the time of provisional true up in FY 2010-11.

7.44 Accordingly, the Commission approves the landed cost of coal and secondary fuel as also approved in the Tariff Order of FY 2010-11. The details of landed cost of coal and secondary fuel approved by the Commission for FY 2009-10 are provided in the following Table.

Table 21 : Landed Cost of coal (Rs/Ton) and secondary fuel (Rs/kL) for FY 2009-10

	Unit 2			Unit 3		
Type of Coal	Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO	Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO
Middling Coal	2044	2044	2044	2035	2035	2035
MCL Coal	1064	1064	1064	1068	1068	1068
Imported Coal	6607	6607	6607	6607	6607	6607
RJC Coal	1889	1889	1889	1928	1928	1928
Secondary Fuel (LDO)	39500	39500	39500	39849	39849	39849

Transit Loss

Petitioner's submission

7.45 The Petitioner submitted that as per the PPA, fuel costs shall mean the actual landed cost of primary and secondary fuel consumed by the power station, including all agreed transportation losses.

Commission's analysis

7.46 The Commission has not considered transit loss separately since the fuel price submitted by the Petitioner is the actual landed cost of fuel which also includes transportation losses. This is in line with the methodology followed by the Commission in previous years as well.

Summary of Operational Parameters and Fuel Cost Determinants

7.47 The summary of operational parameters and fuel cost determinants for Unit 2 and Unit 3, as submitted by the Petitioner and as approved by the Commission, for the purpose of true up for FY 2009-10 is provided in the following Tables.

Table 22: Operational parameters and fuel cost determinants for FY 2009-10 for Unit 2

Parameters	Units	Unit 2		
		Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO
Capacity	MW	120	120	120
Plant Load Factor	%	74.75	74.75	74.75
Auxiliary Consumption	%	10.58	10.58	10.58
Station Heat Rate	kCal/kWh	2680	2632	2632
GCV of Coal (Middling Coal /MCL Coal/ RJC /Imported)	kCal/Kg	4405/2829/ 2877/3138	4403/2813/ 2885/3354	4403/2813/ 2885/3354
GCV of oil	kCal/litre	9100	9100	9100
Specific oil consumption	ml/kWh	0.97	0.89	0.89
Consumption of Indian coal	MT	560024	550070	550070
Consumption of Imported Coal	MT	12388	12388	12388
Oil consumption	Kl	762	699	699
Price of Coal (Middling Coal /MCL Coal/ RJC /Imported)	Rs/MT	2044/1064/ 1889/6607	2044/1064 1889/6607	2044/1064 1889/6607
Price of Oil	Rs/KL	39500	39500	39500
Total Coal Cost	Rs Cr	102.22	100.56	100.56
Total Oil cost	Rs Cr	3.01	2.77	2.77
Net Fuel Cost	Rs Cr	105.24	103.33	103.33
Energy Charges	Rs/Unit	**1.50**	**1.47**	**1.47**

Table 23: Operational parameters and fuel cost determinants for FY 2009-10 for Unit 3

Parameters	Units	Unit 3		
		Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO
Capacity	MW	120	120	120
Plant Load Factor	%	79.39	79.39	79.39
Auxiliary Consumption	%	10.58	10.58	10.58
Station Heat Rate	kCal/kWh	2680	2648	2648
GCV of Coal (Middling Coal /MCL Coal/ RJC /Imported)	kCal/Kg	4374/2809/ 2873/3329	4366/2813/ 2881/3338	4366/2813/ 2881/3338
GCV of oil	kCal/litre	9100	9100	9100

Parameters	Units	Unit 3		
		Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO
Specific oil consumption	ml/kWh	0.97	1.06	1.06
Consumption of Indian coal	MT	606622	599199	599199
Consumption of Imported Coal	MT	12089	12089	12089
Oil consumption	Kl	810	885	885
Price of Coal (Middling Coal /MCL Coal/ RJC /Imported)	Rs/MT	2035/1068/ 1928/6607	2035/1068 1928/6607	2035/1068 1928/6607
Price of Oil	Rs/KL	39849	39849	39849
Total Coal Cost	Rs Cr	109.54	108.30	108.30
Total Oil cost	Rs Cr	3.23	3.52	3.52
Net Fuel Cost	Rs Cr	112.77	111.82	111.82
Energy Charges	Rs/Unit	**1.51**	**1.50**	**1.50**

Operation and Maintenance (O&M) Expenses

Petitioner's submission

7.48 The Petitioner has submitted that the Commission in the Tariff Order for FY 2010-11 had approved Rs 22.23 Cr for Unit 2 and Rs 20.14 Cr for Unit 3 for FY 2009-10 and accordingly, the same has been submitted by the Petitioner for true up.

Commission's analysis

7.49 In accordance with the terms of PPA between TSL and the Petitioner, the O&M expenditure is to be allowed at the rate of 3% of original project cost to be escalated by 7% each year. The Commission in its previous tariff order has approved the O&M expenses on the same principle. Since, the original project cost has not undergone any change, the Commission retains the O&M expenses approved by it its previous Tariff Order issued in FY 2010-11.

7.50 Accordingly the Commission approves O&M cost at Rs 22.23 Cr for Unit 2 and Rs 20.14 Cr for Unit 3 for FY 2009-10.

Depreciation

Petitioner's submission

7.51 The Petitioner submitted that the Commission has approved a depreciation charge of Rs 32.54 Cr for Unit 2 and Rs.32.19 for Unit 3 in the Tariff Order for FY 2010-11 at the time of provisional true up of FY 2009-10 and has submitted the same for actual true up of FY 2009-10.

Commission's analysis

7.52 The Commission, in its Previous Tariff Order, has calculated the depreciation on the approved capital cost of assets (the original project cost) using the straight-line method over the useful life of the assets and considering the rates of depreciation as per the terms of the PPA between TSL and the Petitioner.

7.53 Since the original project cost has not undergone any change, the Commission retains the depreciation charge as approved in its previous tariff order, which amounts to Rs 32.54 Cr for Unit 2 and Rs.32.19 for Unit 3 for FY 2009-10.

Interest on Loan

Petitioner's submission

7.54 The Petitioner has submitted that the Commission in its Previous Tariff Order of FY 2010-11 had approved an average interest rate of 13.02% for Unit 2 and 12.33% for Unit 3 and accordingly the interest on loan computed for Unit 2 amounts to Rs 2.00 Cr and for Unit 3 amounts to Rs 5.90 Cr. The Petitioner has submitted the same for true up of FY 2009-10.

Commission's analysis

7.55 The Commission had allowed interest on loan to the Petitioner amounting to Rs 2.00 Cr for Unit 2 and Rs 5.88 Cr for Unit 3 for FY 2009-10 in the Tariff Order issued for FY 2010-11. The Commission now approves interest on loan amounting to Rs 2.00 Cr for Unit 2 and Rs 5.90 Cr for Unit 3 for FY 2009-10. The difference in the interest on loan approved in the previous tariff order for Unit 3 and that being approved now is on account of rounding up approximations and the difference now stands eliminated.

Interest on Working Capital

Petitioner's submission

7.56 The Petitioner has requested the Commission to approve working capital and interest thereon on the basis of norms specified in the PPA entered into between TPCL and TSL.

7.57 The PPA states that: *"Working capital is estimated as per GoI norms and the interest thereon at the prevailing SBI advance rate."* Accordingly, working capital has been calculated after considering the following norms for generating stations.

(a) Fuel costs for one month, reasonable fuel stocks as actually maintained but limited to 15 days for pit head stations and 30 days for non-pit head stations;

(b) The cost of 60-day inventory for any fuel other than coal;

(c) Operation & Maintenance expenses for one month, and

(d) The project's receivables equivalent to two months' average billing for Capacity Payment and Energy Payment.

7.58 The interest on working capital has been considered as 12.25%, which the Petitioner submitted was the prevailing SBI Advance Rate as on April 1, 2009. Accordingly, the Petitioner requests the Commission to approve Rs 5.30 Cr and Rs 5.66 Cr as the interest on working capital for Units 2 and Unit 3 respectively for FY 2009-10.

7.59 The Commission had previously approved interest on working capital amounting to Rs.5.36 Cr for Unit 2 and Rs.5.69 Cr for Unit 3 at the time of provisional true up of FY 2009-10 in the Tariff Order issued in FY 2010-11.

7.60 However, after considering the impact of post tax return on equity on the receivables, the interest on working capital has been computed at Rs 5.30 Cr for Unit 2 and Rs 5.66 Cr for Unit 3. The Petitioner has requested the Commission to approve the same.

Commission's analysis

7.61 The Commission has calculated the interest on working capital as per the expenses and receivables trued up in this tariff order. The rate of interest on working capital is considered as 12.25% p.a. which was the prevailing SBI advance rate on April 1, 2009.

7.62 The Commission has computed and approved interest on working capital of Rs 5.30 Cr for Unit 2 and Rs 5.66 Cr for Unit 3.

Return on Equity (RoE)

Petitioner's submission

7.63 The Petitioner has submitted that as per the terms of PPA between TSL and the Petitioner, it is entitled to a RoE of 16% at a base PLF of 68.5%. Additional RoE is allowable for generation above 68.5% PLF. The PPA specifies the following mechanism for incentive in the RoE vis-à-vis PLF achieved in a financial year: For each 1.0% (or fraction thereof, on *prorata* basis) the PLF is greater than the Guaranteed PLF of 75%, the RoE for such year shall be increased by:

(a) 0.5% if the PLF is between 68.5% and 73.5%;

(b) 0.6% if the PLF is between 73.5% and 75.5%; and

(c) 0.7% if the PLF is between 75.6% and 95%.

The PPA also contains a disincentive clause for poor performance on this parameter. For each 1.0% that the PLF is below the Minimum Plant Load Factor, the RoE for such year shall decrease by 0.25%.

7.64 The Petitioner has further submitted that as per the PPA, it is eligible to recover fixed charges of Units 2 and Unit 3 in full at a guaranteed PLF of 75%. The Petitioner has stated that the actual PLF of the Units depends upon the energy demand of the distribution licensee and is thereby not in their control. Further, the availability for Unit 2 for FY 2009-10 was recorded at more than 75% (i.e. 88.79% for FY 2009-10) which implied that Unit 2 is entitled to receive deemed generation benefit and therefore is entitled to a return at 75%.

7.65 The Petitioner has submitted that the Commission, while approving RoE for Unit 2 for FY 2009-10 in its previous Tariff Order, has not considered that Unit 2 is entitled to receive deemed generation benefit and a return at 75% as per the clause mentioned in paragraph 7.64 above. The Petitioner had filed a review petition regarding the same (Case No 20 of 2010).

7.66 Accordingly, the Petitioner has requested the Commission to approve return on equity for Unit 2 at Rs 25.10 Cr for FY 2009-10 instead of Rs 24.91 Cr as approved in its previous Tariff Order. The Petitioner has further submitted that the Commission has allowed return on equity amounting to Rs 28.13 Cr for Unit 3 for FY 2009-10 in its previous Tariff Order. The Petitioner has considered the same amount for true up of FY 2009-10.

Commission's analysis

7.67 In line with the methodology followed in previous years, the Commission has computed the RoE in accordance with the terms and conditions of PPA and approved PLF of 74.75% for Unit 2 and 79.39% for Unit 3.

With regards to RoE for Unit 2, the Commission, in its Order in Case No. 20 of 2010 (dated October 28, 2010), has stated the following:

"The Commission in the Tariff Order for FY2010-11 had decided that the tariff determination exercise shall be conducted as per the terms and conditions of PPA and the clause 1.1 of PPA states that

> *"Guaranteed Plant Load Factor shall mean the annual weighted average of (i) 51.37% PLF for any unit during stabilization period and (ii) 75% PLF thereafter. Purchaser guarantees to off take energy at this PLF. In the event of purchaser not being able to purchase the power at Guaranteed Plant Load Factor the purchaser will pay the deemed generation benefit. Such weighted average shall be based on the rated capacity (or, if the rated capacity of such unit has not been established, the Name Plate Capacity) of each unit."*

The Commission agrees with the petitioner's contention that the PLF should be treated as uncontrollable factor because the actual PLF achieved by the plant primarily depends on the demand of Tata steel and is not a controllable factor for the petitioner. The Commission has analyzed the data submitted by the petitioner in the additional information vide letter No. JPP/JSERC/REG/89/10 dated May 6, 2010 which is given below

***Table 24**: Month-wise Availability and PLF of Unit-II for FY 2009-10 (in %)*

	Availability	PLF
April	100	97.74
May	96.72	87.45
June	100	92.6
July	98.74	78.65
August	100	78.65
September	99.65	79.87
October	69.36	52.97
November	2.62	2.47
December	99.46	77.81
January	99.57	79.87
February	98.56	81.81
March	100	86.98
	88.79	74.75

Since the availability of the plant was more than the PLF for Unit-II during FY 2009-10 which clearly means that the plant was available but due to the less power demand of Tata Steel, the PLF of Unit-II was low.

The Clause for Guaranteed PLF provided in the PPA was not taken into consideration during the tariff determination exercise for FY 2010-11 therefore, the Commission now approves the revised return on equity of Rs 25.10 Crores and the gap of Rs 0.19 Crores will be adjusted while truing up cost of Unit-II for FY 2009-10 in the next Tariff Order of FY 2011-12."

7.68 Therefore, the Commission now allows the Petitioner return on equity amounting to Rs.25.10 Cr for Unit 2 for FY 2009-10 in accordance with the review order and maintains return on equity for Unit 3 for FY 2009-10 at Rs.28.13 Cr.

Income Tax

Petitioner's submission

7.69 The Petitioner has submitted that the effective minimum alternate tax (MAT) rate for FY 2009-10 was 16.995%.

7.70 The Petitioner has further submitted that for the computation of income tax, RoE shall be first grossed up by the applicable MAT rate to calculate pre tax RoE and then the MAT rate shall be applied to determine the tax payable by the Petitioner.

7.71 Accordingly, income tax payable by the Petitioner has been determined at Rs.5.14 Cr for Unit 2 and Rs.5.76 Cr for Unit 3 for FY 2009-10.

Commission's analysis

7.72 The Commission has computed and approved the tax payable by the Petitioner in FY 2009-10 on the basis of revised RoE approved and the applicable MAT rate for the year. The income tax for FY 2009-10 has been approved at Rs 5.14 Cr for Unit 2 and Rs 5.76 Cr for Unit 3.

Summary of Fixed Cost determinants and Generation Tariff

7.73 The trued up Fixed Cost determinants and Generation Tariff for FY 2009-10, in terms of the Commission approvals in the Tariff Order of FY 2010-11, Petitioner's revised submission and the Commission's approved costs for the purpose of true up for Unit 2 are provided in the following Table.

Table 25: Fixed Cost determinants and Generation Tariff for FY 2009-10 for Unit 2

Parameters	Unit	Unit 2		
		Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO
O&M charges	Rs Cr	22.23	22.23	22.23
Depreciation	Rs Cr	32.54	32.54	32.54
Interest on Loan	Rs Cr	2.00	2.00	2.00
Return on Equity	Rs Cr	24.91	25.10	25.10
Interest on Working Capital	Rs Cr	5.36	5.30	5.30
Income Tax	Rs Cr	5.10	5.14	5.14

Parameters	Unit	Unit 2		
		Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO
Total Fixed cost	Rs Cr	92.15	92.32	92.32
Energy Cost	Rs Cr	105.24	103.33	103.33
Total Cost	Rs Cr	197.39	195.64	195.64
Net generation	MUs	702.67	702.67	702.67
Generation Tariff	**Rs/Unit**	**2.81**	**2.78**	**2.78**

7.74 The trued up fixed cost determinants and generation tariff for FY 2009-10, in terms of the Commission approvals in the Tariff Order of FY 2010-11, Petitioner's revised submission and the Commission's approved costs for the purpose of true up for Unit 3 are provided in the following Table.

Table 26: Fixed Cost determinants and Generation Tariff for FY 2009-10 for Unit 3

Parameters	Unit	Unit 3		
		Approved by JSERC in TO FY 2010-11	Submitted by TPCL	Approved by JSERC in this TO
O&M charges	Rs Cr	20.14	20.14	20.14
Depreciation	Rs Cr	32.19	32.19	32.19
Interest on Loan	Rs Cr	5.88	5.90	5.90
Return on Equity	Rs Cr	28.13	28.13	28.13
Interest on Working Capital	Rs Cr	5.69	5.66	5.66
Income Tax	Rs Cr	5.76	5.76	5.76
Total Fixed cost	Rs Cr	97.80	97.79	97.79
Energy Cost	Rs Cr	112.77	111.82	111.82
Total Cost	Rs Cr	210.57	209.61	209.61
Net generation	MUs	746.24	746.25	746.25
Generation Tariff	**Rs/Unit**	**2.82**	**2.81**	**2.81**

A8: REVISED ESTIMATES FOR FY 2010-11

8.1 The Petitioner has submitted the revised tariff petition for FY 2010-11 based on the revised estimates for FY 2010-11.

8.2 The Commission has scrutinized the petition filed by the Petitioner for the revised cost estimates and operational parameters for FY 2010-11 as per the actual data. The component-wise description of the Petitioner's submission and the Commission's analysis thereof is given below.

Basis of Variable Cost and Fixed Cost Determination

Petitioner's submission

8.3 The Petitioner has submitted the variable and fixed charges as per the terms and conditions of the PPA between TSL and the Petitioner and the latest available information for FY 2010-11 for parameters not specified in PPA.

Commission's analysis

8.4 In line with the approach followed in the previous Tariff Order for FY 2010-11, the Commission has decided to revise the ARR for FY 2010-11 for the Petitioner also in accordance with the terms of PPA between TSL and the Petitioner (for parameters specified in PPA) and in accordance with 'Generation Tariff Regulations, 2004' (for parameters not specified in PPA).

8.5 However, for parameters where the actual figures show improvement in the efficiency of the Generation Company or are more cost-effective vis-à-vis the terms and conditions of the PPA/Generation Tariff Regulations, 2004, the Commission has decided to accept same for the purpose of revision of ARR.

8.6 For revision of various operational and cost components for FY 2010-11, the Commission has considered the latest available data submitted by the Petitioner by way of additional information with regard to the petition submitted by them in FY 2011-12.

Plant Load Factor

Petitioner's submission

8.7 The Petitioner submitted as part of the additional information to the original tariff petition for the purpose of revision of estimates for FY 2010-11 that the actual PLF for FY 2010-11 was 81.85% for Unit 2 and 84.01% for Unit 3.

Commission's analysis

8.8 For revision of operational parameters for FY 2010-11, the Commission had asked the Petitioner for month wise plant availability and PLF.

8.9 The Commission has observed that both units have shown better performance than the PLF estimated and approved in the previous tariff order; hence the Commission approves actual PLF submitted by the Petitioner for both units. The actual PLF approved for both units for FY 2010-11 is given in following Table.

Table 27 : PLF for FY 2010-11

Particulars	Approved by JSERC in TO FY 2010-11	Submitted by TPCL*	Approved by JSERC in this TO
Unit 2	79.10%	81.85%	81.85%
Unit 3	83.72%	84.01%	84.01%

* Submitted by TPCL as additional information

Gross Generation

Petitioner's submission

8.10 In the present petition, the Petitioner has submitted the gross generation for FY 2010-11 on the basis of proposed PLF of the two Units. The Gross generation has been calculated by the Petitioner as 860.40 MUs for Unit 2 and 883.10 MUs for Unit 3.

8.11 The Commission had approved gross generation to the tune of 831.46 MUs for Unit 2 and 880.06 MUs for Unit 3 in the previous Tariff Order issued in FY 2010-11.

Commission's analysis

8.12 On the basis of the approved PLF and capacity of the two units, the Commission approves the gross generation of 860.40 MUs for Unit 2 and 883.10 MUs for Unit 3. Both units 2 and 3 have shown improved performance in terms of actual generation for FY 2010-11 than the generation figures estimated in the previous year. Thus the Commission approves the higher gross generation submitted by the Petitioner for Unit 2 and 3 for FY 2010-11.

Auxiliary Consumption

Petitioner's submission

8.13 The Petitioner has submitted that the auxiliary consumption for FY 2010-11 for Unit 2 is 10.15% for Unit 3 is estimated at 10.04%.

8.14 The Commission had approved auxiliary consumption for FY 2010-11 for both Units 2 and 3 at the rate of 10.40% in the previous Tariff Order issued in FY 2010-11.

Commission's analysis

8.15 The Commission has observed that both Unit 2 and 3 have reported improved performance as compared to that estimated in the previous Tariff Order issued in FY 2010-11.

8.16 The actual auxiliary consumption in case of both units has reduced as compared to the auxiliary consumption approved in the previous Tariff Order of FY 2010-11 thereby resulting in an increase in the net generation of saleable units of energy. Thus the Commission approves the actual auxiliary consumption as submitted by the Petitioner for Unit 2 and Unit 3 for FY 2010-11. The following Table provides the auxiliary consumption for FY 2010-11 for Units 2 and 3.

Table 28 : Auxiliary Consumption for FY 2010-11

Particulars	Approved by JSERC in TO FY 2010-11	Submitted by TPCL*	Approved by JSERC in this TO
Unit 2	10.40%	10.15%	10.15%
Unit 3	10.40%	10.04%	10.04%

* Submitted by TPCL as additional information

Net Generation

Petitioner's submission

8.17 The Petitioner submitted the net generation at 773.07 MUs for Unit 2 and 794.42 MUs for Unit 3 for FY 2010-11 in the additional information submitted with regard to the Petition filed for FY 2011-12.

Commission's analysis

8.18 The Commission approves the net generation of 773.07 MUs for Unit 2 and 794.42 MUs for Unit 3 based on the approved PLF and auxiliary consumption for FY 2010-11.

Station Heat Rate

Petitioner's submission

8.19 The Petitioner submitted that the actual Station Heat Rate (SHR) for Unit 2 was 2644 kCal/kWh and for Unit 3 was 2621 kCal/kWh for FY 2010-11. The Petitioner has submitted the the SHR for both units has improved as compared to that estimated in the previous Tariff Order issued in FY 2010-11.

Commission's analysis

8.20 The Commission has observed that the actual SHR for both units has reduced in FY 2010-11 thereby indicating an improvement in actual performance of both units. Thus the Commission approves the SHR of 2644 kCal/kWh for Unit 2 and 2621 kCal/kWh for Unit 3 for FY 2010-11.

Table 29 : SHR (kCal/kWh) for FY 2010-11

Particulars	Approved by JSERC in TO FY 2010-11	Submitted by TPCL*	Approved by JSERC in this TO
Unit 2	2680	2644	2644
Unit 3	2680	2621	2621

* Submitted by TPCL as additional information

Specific Oil Consumption

Petitioner's submission

8.21 The Petitioner has revised the specific oil consumption for FY 2010-11 as per the additional information submitted with respect to the petition filed for FY 2011-12. The Petitioner has submitted that the specific oil consumption for Unit 2 and 3 was 0.425 ml/kWh in FY 2010-11.

8.22 The Petitioner has submitted that the actual consumption of LDO for Unit 2 was 365.27 kL and for Unit 3 was 375.50 kL in FY 2010-11.

Commission's analysis

8.23 The Commission approves the specific oil consumption as proposed by the Petitioner since it is lower than that approved by the Commission in the previous tariff order.

8.24 The Commission approves 0.425 ml/kWh of oil for both Unit 2 and 3 for FY 2010-12 as per the revised estimate submitted by the Petitioner.

Table 30 : Specific Oil Consumption (ml/kWh) for FY 2010-11

Particulars	Approved by JSERC in TO FY 2010-11	Submitted by TPCL*	Approved by JSERC in this TO
Unit 2	0.97	0.425	0.425
Unit 3	0.97	0.425	0.425

* Submitted by TPCL as additional information

Gross Calorific Value (GCV) of Primary and Secondary Fuel

Petitioner's submission

8.25 The Petitioner has submitted that coal consumed in FY 2010-11 has been sourced from West Bokaro colliery of TSL and Mahanadi Coal Fields, Orissa (MCL Coal).

8.26 The Petitioner has further submitted that the annual GCV from various sources of coal has been computed as weighted average of monthly GCV from a particular source using the monthly consumption from that source as weight. Monthly GCV has been determined by computing weighted average of GCV of coal from that source using the daily coal consumption from that source as weight.

8.27 The Petitioner has submitted data pertaining to actual month wise weighted average GCV for different sources of coal for FY 2010-11.

8.28 For the purpose of revised estimation of FY 2010-11 with respect to the GCV of coal consumed at Unit 2, the Petitioner has submitted that the actual GCV of Middling Coal was determined at 4321 kCal/kg and that of MCL Coal was determined at 2781 kCal/kg in FY 2010-11.

8.29 In Case of Unit 3, the Petitioner has submitted that the actual GCV of Middling Coal was determined at 4348 kCal/kg and that of MCL Coal was determined at 2766 kCal/kg in FY 2010-11.

8.30 The Petitioner has submitted that the GCV of secondary fuel used in both Unit 2 and Unit 3 was 9100 kCal/kl in FY 2010-11.

Commission's analysis

8.31 The Commission conducted a prudence check to determine the process by which the GCV of various sources of coal is measured and recorded by the Petitioner. The process of measurement and recording of GCV of coal used from various sources in both Unit 2 and Unit 3 was reviewed. A sample check was conducted to verify whether the GCV of all sources of coal used in either of the two units is being recorded correctly on a daily basis. GCV of coal recorded on a daily basis in turn forms the basis for determination of monthly GCV of coal used which in turn is used to determine the weighted average GCV all sources of coal consumed during the year in each of the two units.

8.32 The Commission has taken into account the actual month-wise information furnished with the additional data for calculating the actual GCV of fuel. Taking the actual consumption of coal and LDO in FY 2010-11 for both Units 2 and 3, the weighted average GCV for various types of coal and LDO was parallely computed by the Commission and was found to be in line with the Petitioner's submission. The Commission has verified the weighted average GCV computations submitted by the Petitioner for coal and LDO consumed in FY 2010-11 and has approved the same.

8.33 The Commission approves the estimated GCV of Middling Coal at 4321 kCal/kg and that of MCL Coal at 2781 kCal/kg in for Unit 2 FY 2010-11.

8.34 For Unit 3, the Commission approves the estimated GCV of Middling Coal at 4348 kCal/kg and that of MCL Coal at 2766 kCal/kg.

8.35 In line with the norms adopted in previous Tariff Orders and after validating of data submitted by the Petitioner, the Commission has approved the GCV of secondary fuel of 9100 kCal/l for both the Units for FY 2009-10.

8.36 The following Table provides the weighted average GCV of various types of coal and LDO consumed in Units 2 and 3 in FY 2010-11.

Table 31 : GCV of Coal (kCal/kg) and secondary fuel for FY 2010-11

	Unit 2			Unit 3		
Type of Coal	**Approved by JSERC in TO FY 2010-11**	**Submitted by TPCL***	**Approved by JSERC in this TO**	**Approved by JSERC in TO FY 2010-11**	**Submitted by TPCL***	**Approved by JSERC in this TO**
Middling Coal	4405	4321	4321	4374	4348	4348
MCL Coal	2829	2781	2781	2809	2766	2766
Secondary Fuel (LDO)	9100	9100	9100	9100	9100	9100

* Submitted by TPCL as additional information

Price of Primary and Secondary fuel

Petitioner's submission

8.37 The landed cost of coal and secondary fuel submitted by the Petitioner in the additional information provided with respect to the petition filed for FY 2011-12 is provided in the following Table.

Table 32: Submitted Landed Coal Cost (Rs/Ton) for FY 2010-11*

Type of Coal	UoM	Unit 2	Unit 3
Middling Coal	Rs/Ton	2418	2416
MCL Coal	Rs/Ton	1142	1140
Secondary Fuel (LDO)	Rs/kL	42867	42547

* Submitted by TPCL as additional information

Commission's analysis

8.38 In order to determine the actual rate and quantity consumed of the primary and secondary fuel, the Commission directed the Petitioner to furnish monthly coal cost and consumption for various fuel sources for FY 2010-11. The Petitioner submitted the monthly data for primary and secondary fuel and also submitted the annual post-audited data for cost and consumption of various fuels by way of additional information with respect to the Petition filed in FY 2011-12.

8.39 The Commission has scrutinized the additional data submitted by TPCL and verified sample invoices evidencing purchase of coal and secondary fuel to verify the components of landed cost claimed by the Petitioner. The Commission approves the landed cost of coal and secondary fuel for Unit 2 and Unit 3 for FY 2010-11. The cost approved is subject to true up in the next tariff order.

8.40 The following Table provides details of approved landed cost of coal and secondary fuel. It also provides the costs approved in previous Tariff Order of FY 2010-11 and the information submitted by the Petitioner.

Table 33: Approved Landed Cost (Rs/ton) for FY 2010-11

Particulars	Unit 2			Unit 3		
Type of Coal	Approved as per TO 2010-11	Submitted by TPCL*	Approved by JSERC in this TO	Approved as per TO 2010-11	Submitted by TPCL*	Approved by JSERC in this TO
Middling Coal	2044	2418	2418	2035	2416	2416
MCL Coal	1064	1142	1142	1068	1140	1140
Secondary Fuel (LDO)	39500	42867	42867	39849	42547	42457

*Submitted in Additional Information

Transit Loss

Petitioner's submission

8.41 As per the Petitioner, the PPA with TSL specifies that fuel costs shall mean the actual landed cost of primary and secondary fuel consumed by the power station, including all agreed transport losses.

Commission's analysis

8.42 The Commission has not considered transit loss separately since the actual landed cost of fuel is inclusive of any transit losses that may have been incurred.

Summary of Operational Parameters & Fuel Cost Determinants

8.43 The summary of Plant parameters and fuel cost determinants for the two Units of Jojobera plant of TPCL submitted by the Petitioner and approved by the Commission for FY 2010-11 for Unit 2 and Unit 3 is given in the following Tables.

Table 34: Operational parameters and Fuel cost determinants for FY 2010-11 for Unit 2

Parameters	Units	Unit 2		
		Approved by JSERC in TO FY 2010-11	Submitted by TPCL*	Approved by JSERC in this TO
Capacity	MW	120	120	120
Plant Load Factor	%	79.10%	81.85%	84.01%
Auxiliary Consumption	%	10.40%	10.15%	10.15%
Station Heat Rate	kCal/kWh	2680	2644	2644
GCV of Coal (Middling Coal /MCL Coal)	kCal/Kg	4405/2829	4321/2781	4321/2781
GCV of oil	kCal/litre	9100	9100	9100
Specific oil consumption	ml/kWh	0.97	0.425	0.425
Consumption of Indian coal	MT	569203	597426	597426
Consumption of Imported Coal	MT	0	0	0
Oil consumption	Kl	807	365.27	365.27
Price of Coal (Middling Coal /MCL Coal)	Rs/MT	2044/1064	2418/1142	2418/1142
Price of Oil	Rs/KL	39500	42867	42867
Total Coal Cost	Rs Cr	100.05	118.80	118.80
Total Oil cost	Rs Cr	3.19	1.57	1.57
Net Fuel Cost	Rs Cr	103.24	120.36	120.36
Energy Charges	Rs/Unit	**1.37**	**1.56**	**1.56**

* Submitted by TPCL as additional information

Table 35: Operational parameters and Fuel cost determinants for FY 2010-11 for Unit 3

Parameters	Units	Unit 3		
		Approved by JSERC in TO FY 2010-11	Submitted by TPCL*	Approved by JSERC in this TO
Capacity	MW	120	120	120
Plant Load Factor	%	83.72%	84.01%	84.01%
Auxiliary Consumption	%	10.40%	10.04%	10.04%

Parameters	Units	Unit 3		
		Approved by JSERC in TO FY 2010-11	Submitted by TPCL*	Approved by JSERC in this TO
Station Heat Rate	kCal/kWh	2680	2621	2621
GCV of Coal (Middling Coal /MCL Coal)	kCal/Kg	4374/2809	4348/2766	4348/2766
GCV of oil	kCal/litre	9100	9100	9100
Specific oil consumption	ml/kWh	0.97	0.425	0.425
Consumption of Indian coal	MT	606668	606917	606917
Consumption of Imported Coal	MT	0	0	0
Oil consumption	Kl	854	375.50	375.50
Price of Coal (Middling Coal /MCL Coal)	Rs/MT	2035/1068	2416/1140	2416/1140
Price of Oil	Rs/KL	39849	42547	42547
Total Coal Cost	Rs Cr	106.14	120.19	120.19
Total Oil cost	Rs Cr	3.40	1.60	1.60
Net Fuel Cost	Rs Cr	109.54	121.78	121.78
Energy Charges	Rs/Unit	**1.39**	**1.53**	**1.53**

* Submitted by TPCL as additional information

Operation & Maintenance Expenses

Petitioner's submission

8.44 The Petitioner has submitted the O&M expenses as per the previous tariff order wherein the Commission had approved O&M expenses of Rs.23.79 Cr for Unit 2 and Rs 21.55 Cr for Unit 3.

8.45 The Petitioner has requested the Commission to approve O&M expenses of the same amount for Unit 2 and 3 for FY 2010-11.

Commission's analysis

8.46 In accordance with the terms of PPA, the O&M expenditure is to be allowed at the rate of 3% of original project cost to be escalated by 7% each year and the Commission in its previous tariff order has allowed the O&M accordingly. Since, the original project cost has not under gone any change, the Commission retains the O&M expenses approved by it its previous tariff order.

8.47 Accordingly, the Commission approves O&M expenses of Rs.23.79 Cr for Unit 2 and Rs 21.55 Cr for Unit 3 for FY 2010-11.

Depreciation

Petitioner's submission

8.48 The Petitioner has stated that Commission had approved a depreciation charge of Rs 32.54 Cr for Unit 2 and Rs 32.17 Cr for Unit 3 and accordingly, the same has been considered for revised estimation for FY 2010-11.

Commission's analysis

8.49 As in case of O&M expenses, the depreciation charge is also computed on the basis of original project cost. Since the original project cost has not undergone any change, the Commission retains the depreciation charge as approved in its previous tariff order at Rs 32.54 Cr for Unit 2 and Rs 32.17 Cr for Unit 3 for FY 2010-11.

Interest on Loan

Petitioner's submission

8.50 The Petitioner has submitted that the Commission in the Tariff Order of FY 2010-11 had approved an interest rate of 13.02% for Unit 2 and 12.33% for Unit 3.

8.51 Repayment of debt for Unit 2 has been completed and accordingly interest on debt for Unit 2 has been calculated as nil and for Unit 3, interest on debt for FY 2010-11 has been calculated as Rs 1.96 Cr. The Commission in the Tariff Order for FY 2010-11 had approved interest on loan as nil for Unit 2 and to the of Rs.1.95 Cr for Unit 3.

Commission's analysis

8.52 In the Tariff order for FY 2010-11, the Commission had not allowed any interest on loan to the Petitioner for Unit 2 and allowed Rs.1.95 Cr for Unit 3 for FY 2010-11 in the Tariff Order issued for FY 2010-11.

8.53 The Commission now approves interest on loan amounting to Rs Nil for Unit 2 and Rs 1.96 Cr for Unit 3 for FY 2010-11. The difference in the interest on loan approved in the previous tariff order for Unit 3 and that being approved now is on account of rounding off approximations.

Interest on Working Capital

Petitioner's submission

8.54 The Petitioner has requested the Commission to approve working capital and interest thereon on the basis of norms specified in the PPA entered into between TPCL and TSL.

8.55 The PPA states that: *"Working capital is estimated as per GoI norms and the interest thereon at the prevailing SBI advance rate."* Accordingly, working capital has been calculated after considering the following norms for generating stations.

(a) Fuel costs for one month, reasonable fuel stocks as actually maintained but limited to 15 days for pit head stations and 30 days for non-pit head stations;

(b) The cost of 60-day inventory for any fuel other than coal;

(c) Operation & Maintenance expenses for one month, and

(d) The project's receivables equivalent to two months' average billing for Capacity Payment and Energy Payment.

8.56 The interest on working capital has been considered as 11.75%, which the Petitioner submitted was the prevailing SBI Advance Rate as on April 1, 2010. Accordingly, the Petitioner has calculated the interest on working capital for both the units

8.57 Accordingly in the petition of FY 2011-12, the Petitioner has submitted the interest on working capital as Rs 5.57 Cr as against Rs 5.20 Cr approved by the Commission in the Tariff Order of FY 2010-11 for Unit 2 and Rs 5.89 Cr as against Rs 5.45 approved by the Commission for Unit 3 in the Tariff Order for FY 2010-11.

Commission's analysis

8.58 The Commission has calculated the interest on working capital by taking in to account the approved expenses and receivables as revised in this tariff order. The Commission approves interest on working capital of Rs 5.66 Cr for Unit 2 and Rs 5.77 Cr for Unit 3 for FY 2010-11 in accordance with the terms and conditions of PPA.

8.59 The amount of interest on working capital approved by the Commission for Unit 2 is higher than that claimed by the Petitioner in the ARR petition submitted by it. This is because, as per the additional information provided by the Petitioner, the fuel cost for FY 2010-11 was Rs 120.36 Cr as against Rs 117.09 Cr as submitted in the ARR petition. The revised fuel cost (Rs 120.36 Cr) has also been approved by the Commission. The revision in fuel cost has resulted in increase in the amount pertaining to the working capital and hence interest on working capital.

8.60 The following Table provides the computation of interest on working capital for both Unit 2 and 3 for FY 2010-11.

Table 36: Approved Interest on Working Capital (Rs. Cr) for FY 2010-11

Particulars	Unit 2	Unit 3
Coal stock – 1 month	9.90	10.02
Secondary Fuel – 2 months	0.26	0.27
O&M- 1 month	1.98	1.80
Receivables- 2 months	36.02	37.01
Total	48.17	49.09
Interest on Working capital	5.66	5.77

Return on Equity (RoE)

Petitioner's submission

8.61 As per the PPA, the Petitioner is entitled to a RoE of 16% at a base PLF of 68.5%. Additional RoE is given for generation above 68.5% PLF. The PPA specifies the following mechanism for incentive in the RoE vis-à-vis PLF achieved in a financial year: For each 1.0% (or fraction thereof, on *prorata* basis) the PLF is greater than the Guaranteed PLF of 75%, the RoE for such year shall be increased by

(a) 0.5% if the PLF is between 68.5% and 73.5%;

(b) 0.6% if the PLF is between 73.5% and 75.5%; and

(c) 0.7% if the PLF is between 75.6% and 95%.

The PPA also contains a disincentive clause for poor performance on this parameter. For each 1.0% that the PLF is below the Minimum Plant Load Factor, the RoE for such year shall decrease by 0.25%.

8.62 In the petition of FY 2010-11, the Petitioner has stated that the estimated PLF of Unit 2 is 77.23% and that of Unit 3 is 82.78%. Accordingly, the RoE along with PLF incentive is submitted as Rs 27.06 Cr for Unit 2 and Rs 31.10 Cr for Unit 3 for FY 2010-11. The Commission had previously approved RoE amounting to Rs.28.75 Cr for Unit 2 and Rs.31.93 Cr for Unit 3 for FY 2010-11 in the Tariff Order issued in FY 2010-11.

Commission's analysis

8.63 The Commission, in accordance with the terms and conditions of PPA, has calculated the RoE based on the approved PLF of 77.23% of Unit 2 and 82.78% of Unit 3 and accordingly approves the RoE of Rs 27.06 Cr for Unit 2 and Rs 31.10 for Unit 3 for FY 2010-11.

Income Tax

Petitioner's submission

8.64 The applicable minimum alternate tax rate for FY 2010-11 is 19.9305%. The Petitioner has submitted that for the computation of MAT, the post tax RoE is first grossed up by applicable MAT rate to arrive at pre tax RoE and then MAT rate has been applied to determine the tax payable.

8.65 In the Petition of FY 2011-12, the Petitioner has requested the Commission to approve income tax of the amount Rs 6.74 Cr for Unit 2 and Rs 7.74 Cr for Unit 3 during FY 2010-11.

8.66 The Commission in its Tariff Order of FY 2010-11 had approved income tax amount for Unit 2 at Rs.7.16 Cr and for Unit 3 at Rs.7.95 Cr. Income tax amount has reduced in the annual performance review of FY 2010-11 because RoE has reduced.

Commission's analysis

8.67 The Commission has calculated the Income tax on the basis of revised RoE approved for FY 2010-11. Accordingly, the Commission approves MAT payable by the Petitioner in FY 2010-11 as Rs 6.74 Cr for Unit 2 and Rs 7.74 Cr for Unit 3 subject to true up.

Summary of Fixed Cost Determinants and Generation Tariff

8.68 The Table below shows the revised fixed cost determinants and generation tariff for FY 2010-11:

Table 37 : Fixed cost determinants and Generation Tariff for FY 2010-11 for Unit 2

Parameters	UoM	Unit 2		
		Approved by JSERC in TO FY 2010-11	Submitted by TPCL*	Approved by JSERC in this TO
O&M charges	Rs Cr	23.79	23.79	23.79
Depreciation	Rs Cr	32.54	32.54	32.54
Interest on Loan	Rs Cr	0.00	0.00	0.00
Return on Equity	Rs Cr	28.75	27.06	27.06

Parameters	UoM	Unit 2		
		Approved by JSERC in TO FY 2010-11	Submitted by TPCL*	Approved by JSERC in this TO
Interest on Working Capital	Rs Cr	5.20	5.57	5.66
Income Tax	Rs Cr	7.16	6.74	6.74
Total Fixed cost	Rs Cr	97.44	95.70	95.79
Energy Cost	Rs Cr	103.24	120.36	120.36
Total Cost	Rs Cr	200.68	216.06	216.15
Net generation	MUs	745.02	773.07	773.07
Generation Tariff	**Rs/Unit**	**2.69**	**2.79**	**2.80**

* Submitted by TPCL as additional information

8.69 The Table below shows the revised fixed cost determinants and Generation tariff for FY 2010-11:

Table 38 : Fixed cost determinants and Generation Tariff for FY 2010-11 for Unit 3

Parameters	UoM	Unit 3		
		Approved by JSERC in TO FY 2010-11	Submitted by TPCL*	Approved by JSERC in this TO
O&M charges	Rs Cr	21.55	21.55	21.55
Depreciation	Rs Cr	32.17	32.17	32.17
Interest on Loan	Rs Cr	1.95	1.96	1.96
Return on Equity	Rs Cr	31.93	31.10	31.10
Interest on Working Capital	Rs Cr	5.45	5.89	5.77
Income Tax	Rs Cr	7.95	7.74	7.74
Total Fixed cost	Rs Cr	101.00	100.41	100.29
Energy Cost	Rs Cr	109.54	121.78	121.78
Total Cost	Rs Cr	210.54	222.19	222.07
Net generation	MUs	788.54	794.43	794.43
Generation Tariff	**Rs/Unit**	**2.67**	**2.80**	**2.80**

* Submitted by TPCL as additional information

A9: TARIFF DETERMINATION FOR FY 2011-12

9.1 The Petitioner has submitted the petition for determination of generation tariff for FY 2011-12 on the basis of the projection of operational and financial figures for the year.

9.2 The Commission has scrutinized the petition filed by TPCL for determination of Generation Tariff for FY 2011-12 in accordance with the Generation Tariff Regulations, 2010. The component-wise description of the Petitioner's submission and the Commission's analysis thereon is given below.

Norms of Operation and Fuel Cost

Availability

Petitioner's submission

9.3 The Petitioner has projected the Availability for both Unit 2 and Unit 3 at 90% considering past trends and demand projections by Tata Steel Limited.

Commission's analysis

9.4 The Commission has considered Normative Annual Plant Availability Factor (NAPAF) of 85% as specified in the Generation Tariff Regulation, 2010 for projection of Availability during FY 2011-12.

Plant Load Factor (PLF)

Petitioner's submission

9.5 The Petitioner has projected the PLF based on the demand projection of TSL-Distribution. It has considered an annual shutdown of 26 days for Unit 2 for carrying out major maintenance activities and statutory shutdown of 15 days for Unit 3 during the year. The Petitioner has submitted that scheduling of shutdown for both the units has been done after discussion with TSL. For FY 2011-12, the Petitioner has projected the PLF at 83.01% for Unit 2 and 86.04% for Unit 3.

Commission's analysis

9.6 For the Purpose of projection, the Commission has considered the PLF for FY 2011-12 for Unit 2 and Unit 3 to be equal to the Normative Annual Plant Availability Factor (NAPAF) of 85%.

Auxiliary Consumption

Petitioner's submission

9.7 The Petitioner has considered Auxiliary Consumption at 10% for both Unit 2 and Unit 3 for FY 2011-12 as specified in the Generation Tariff Regulation, 2010.

Commission's analysis

9.8 The Commission has considered Auxiliary Consumption at 10% for both Unit 2 and Unit 3 for FY 2011-12 as specified in the Generation Tariff Regulation, 2010.

Gross and Net Generation

Petitioner's submission

9.9 The Petitioner has projected the gross and net generation for FY 2011-12 considering the projected PLF and auxiliary consumption for the year.

Commission's analysis

9.10 The Commission has computed and approved the gross and net generation for FY 2011-12 considering the approved values of PLF and auxiliary consumption as shown in Table below.

Table 39: Gross and Net Generation for FY 2011-12

Particulars	Unit 2		Unit 3	
	Submitted by TPCL	Approved by JSERC	Submitted by TPCL	Approved by JSERC
Availability (%)	90.00%	85.00%	90.00%	85.00%
PLF (%)	83.01%	85.00%	86.04%	85.00%
Gross Generation (MU)	875.04	895.97	906.96	895.97
Auxiliary Consumption (%)	10.00%	10.00%	10.00%	10.00%
Net Generation (MU)	787.54	806.37	816.26	806.37

Station Heat Rate (SHR)

Petitioner's submission

9.11 The Petitioner has requested for approval of a higher Station Heat Rate than the norm approved by the Commission in the Generation Tariff Regulation, 2010 i.e. 2567 kCal/kWh for Unit 2 and 2577 kCal/kWh for Unit 3.

9.12 The Petitioner has submitted that Heat Rate of the Units cannot be controlled beyond a limit and depends on the load of the Unit, which is beyond the its control. The Petitioner has also submitted that, technically, it is not possible for these Units to achieve Heat Rate to the tune of 2567/2577 kCal/kWh as set by the Commission due to aging, natural wear and tear of key assets and equipments.

9.13 Further, the Petitioner has submitted that it engaged Central Power Research Institute (CPRI), Bangalore for organizing Energy Audit and Performance Test of Unit 3 during July-August 2010. The CPRI, in its report dated December 2010, has observed that Heat Rate of Unit 3 at 100% load, under ideal conditions (0% make-up, no change in fuel consumption etc., Test Coal as analyzed and used during Performance Test) is 2577 kCal/kWh. Further, according to the Petitioner, CPRI has recommended Annual Heat Rate of 2643 kCal/kWh for FY 2010-11 and has also determined an Annual Degradation Factor for Unit 3 at 0.4% which translates to 9 kCal/kWh/year. Considering the Annual Degradation Factor, the operative Heat Rate for Unit 3 for FY 2011-12, as determined by CPRI, works out to 2652 kCal/kWh.

9.14 The Petitioner has submitted that it is in the process of planning similar Energy Audit and Performance Test for Unit 2 at Jojobera. It has contended that since Unit 2 has identical technical specification/configuration/performance trend as that of Unit 3, it is appropriate to consider the operative Heat Rate as recommended by CPRI for FY 2011-12 (2652 kCal/kWh) for both Unit 2 and Unit 3.

Commission's analysis

9.15 The Commission specified the norms of operation for the two Units of Jojobera Plant in the Clause 8.4 of the Generation Tariff Regulations, 2010. It is pertinent to mention that the norms of operation were fixed by the Commission after study of the past performance for each plant in the state and as per the data made available by the Generation companies including TPCL for the two units - Unit 2 and Unit 3 of Jojobera Plant. Before finalization of the norms, the Commission had also conducted a public hearing in which all the stakeholders, including TPCL, participated. The Commission after due deliberation finalized the Regulations.

9.16 The Regulations have been notified accordingly and the norms of operation are applicable and binding on each of the generation plants covered under the Regulations. As per the said Regulations, the Station Heat Rate for the two units has been fixed at 2567kCal/kWh and 2577 kCal/kWh respectively.

9.17 Meanwhile, in view of the submission made by the Petitioner to consider the proposed SHR for the two units as per the recommendations of the CPRI Report, the Commission decided to scrutinize the report and following are the key observations regarding the same:

(a) The CPRI Report indicates that the key deviation factors between the Design Heat Rate of 2253 kCal/kWh and Test Heat Rate of 2577 kCal/kWh are:

(i) Difference in Boiler Efficiency (deviation caused - 48.10 kCal/kWh)

(ii) Difference in Turbine Efficiency (deviation caused - 275.01 kCal/kWh)

(iii) Difference in Generator Efficiency (deviation caused – 0.49 kCal/kWh)

(iv) Steam consumption in boiler, turbine and auxiliary steam requirements such as blow down, gland steam, vent steam etc.

The Commission notes that even with the Test Coal Performance test, the boiler accounts for only 15% of the variance. The Turbine being the automated portion of the cycle is mostly amenable for Heat Rate deficiency rectifications easily. The CPRI report does not provide any break-up of the TG Cycle Heat rate deviations. The Generator efficiency variation is negligible.

(b) The CPRI Report mentions deviation of Test Heat Rate (of 2577 kCal/kWh for FY 2010-11) to the annual Heat Rate of Unit 3 (of 2643 kCal/kWh) on account of the following reasons:

(i) HR Deviation DM due to DM Water consumption – This is for DM water consumption for non-motive purposes.

The Commission views that in any normal operating plant in the closed cycle steam losses via vents, gland seals, steam traps, HFO heating, boiler blow down takes place which necessitates DM water make up. However, when the Station Heat Rate is considered, the entire plant is considered as a boundary with Heat Rate being determined as input into Boiler vis-à-vis the electrical output. All the Heat losses in the system are duly factored in the Station Heat Rate. The Commission notes from the CPRI Report that reference is made to Make-up being 1% of MS Flow and hence no optimization is possible. Considering that the Plant was operating on similar parameters of Make up, the Station Heat Rate of 2577 kCal/kWh was being achieved and hence there is no reason why deviation should be allowed. Moreover, the Petitioner has not indicated any specific non-motive applications.

(ii) HR Deviation Reject due to Mill Rejects – This is for the energy content of the rejects in the milling system.

While in principle this may be admissible as the input into the Boiler is the net of the input into the Bunker and output from the reject system, the Commission also notes that the CPRI report indicates the need for improvements in milling systems as a medium term intervention (over 2-3 Years). The deviation due to HR Rejects is 8.04 kCal/kWh but total recovery across various medium term interventions is 10 kCal/kWh indicating that there will be partial recovery against the rejects loss. It is also noted that mill fineness optimization, coal flow equalization has been recommended as some of the intervention measures at the Unit 3 of the Power

Station. Medium term measures in the CPRI Report indicate coal mill performance improvement measures.

In view of the above, the deviation as requested is not allowed by the Commission and instead the Commission directs the Petitioner to put in place the intervention mechanisms in the milling system towards ensuring mill optimization and minimal rejects.

(iii) HR Deviation – MS & RH Pipe – This is on account of heat loss from the insulation of the piping between the Boiler and Turbine.

In any power plant, even with insulation, certain degree of heat loss is expected from the insulation of the pipelines. In case insulation deteriorates, the same is duly addressed in the annual maintenance plan of the Units. While ensuring that the MS and RH inlet temperatures are maintained at HP Turbine inlet (Main Steam Inlet Temperature) and IP Turbine inlet (Hot Reheat Inlet Temperature), the heat input into the Boiler increases concomitantly and so the Heat Rate achieved by the Station earlier and the Performance Test would have already accounted this in the Heat Rate assessment. Therefore, a separate factor for this is not admissible. Instead the Commission directs the Petitioner to conduct an energy audit and insulation checking and rectify the same by incorporating insulation repair in the Annual Maintenance Plan. This is mentioned in the Directives Section of this Order.

9.18 The Commission notes with concern that the CPRI Report clearly indicates that principal deviation (274.8 kCal/kWh) is a controllable loss and better SHR than the 2577 kCal/kWh currently allowed is achievable. The Commission directs the Petitioner to provide a detailed break-up of the TG cycle related deviation. The CPRI report indicates that with various measures only 45 kCal/kWh is recoverable across various plant components. The Commission also notes with concern that certain intervention measures are indicated like cleaning of internal parts of condenser, heaters which have a serious impact on the TG Cycle Heat Rate. Accordingly, the Commission directs the Petitioner to provide actual operational Heat Balance Diagrams of the units at 100% load, 80%, 75% & 50% and a month-wise loading profile of the Units. The Petitioner is also directed to provide the design Heat Balance Diagram at the above load conditions along with an explanation of the variances in the various TG cycle equipment performances from the design conditions. The same is mentioned in the Directives Section of this Order.

9.19 In view of the above observations, the Commission does not find any merit in allowing deviation in the norms fixed for SHR, for Unit 2 at 2567 kCal/kWh and Unit 3 at 2577 kCal/kWh, as per the Generation Tariff Regulations, 2010.

Specific Oil Consumption

Petitioner's submission

9.20 The specific oil consumption (of LDO) for FY 2011-12 has been considered by the Petitioner to be 1.00 ml/kWh both for Unit 2 and Unit 3.

Commission's analysis

9.21 The Commission has approved specific oil consumption (of LDO) as 1.00 ml/kWh for FY 2011-12 both for Unit 2 and Unit 3 as specified the Generation Tariff Regulation, 2010.

Determination of Energy Charges

Gross Calorific Value (GCV) of Primary Fuel

Petitioner's submission

9.22 The Petitioner has projected that during FY 2011-12 coal will be sourced from West Bokaro and Bhelatand Colliery of Tata Steel (i.e. Middling Coal) and Mahanadi Coalfields, Orissa (i.e. MCL Coal) and RJC Coal. The proportion of the various types of coal to be used has been projected as Middling Coal - 65%, MCL Coal - 25% and RJC Coal - 10%.

9.23 The Petitioner has projected the Gross Calorific Value (GCV) for Middling Coal, MCL Coal and RJC Coal as 4200 kCal/kg, 2800 kCal/kg, 2800 kCal/kg respectively for both Unit 2 and Unit 3. The same has been used for calculation of weighted average GCVof coal by the Petitioner as 2163 kCal/kg.

Commission's analysis

9.24 The Commission has considered the actual proportion of the various types of coal used in FY 2010-11 (as submitted in the additional information) by the Petitioner for projection of the proportion of various types of coal to be used during FY 2011-12. Accordingly, the proportion of various types of coal projected to be used in Unit 2 and Unit 3 is shown in Table below.

Table 40: Coal Mix for FY 2011-12 (in %)

Particulars	Unit 2		Unit 3	
	Submitted by TPCL	Approved by JSERC	Submitted by TPCL	Approved by JSERC
MCL Coal	25%	33.66%*	25%	34.11%*
Middling Coal	65%	66.34%*	65%	65.89%*
RJC Coal	10%	0.00%	10%	0.00%

Particulars	Unit 2		Unit 3	
	Submitted by TPCL	Approved by JSERC	Submitted by TPCL	Approved by JSERC
Total	100%	100.00%	100%	100.00%

*Actuals for FY 2010-11 as submitted in the additional information

9.25 The Commission has projected the GCV of the each type of coal to be used by the Petitioner in accordance with Regulation 8.22 of the Generation Tariff Regulation, 2010, which states that:

"8.22 .... Initially the Base value of gross calorific value of fuel oils and gross calorific value of coal incurred by the Generating Company/ generating Station shall be taken based on

actuals of the weighted average gross calorific value of the three preceding months and in the absence of weighted average gross calorific value for the three preceding months, latest weighted average gross calorific value for the generating station, before the start of the year."

9.26 Accordingly, the Commission has projected the GCV for each type of coal by considering the weighted average GCV observed during the last three months of FY 2010-11 as shown in the Table below. The Table also summarises the weighted average GCV of coal as submitted by the Petitioner and approved by the Commission for both the Units.

Table 41: GCV of various types of fuel (kCal/kg) for FY 2011-12

Particulars	Unit 2		Unit 3	
	Submitted by TPCL	Approved by JSERC	Submitted by TPCL	Approved by JSERC
MCL Coal	2800	2893	2800	2900
Middling Coal	4200	4265	4200	4267
RJC Coal	2800	-	2800	-
Weighted Average GCV	**3710**	**3803**	**3710**	**3801**

Transit Loss

Petitioner's submission

9.27 The Petitioner has considered Transit Loss at 0.8% for both Unit 2 and Unit 3 for FY 2011-12 as specified in the Generation Tariff Regulation, 2010.

Commission's analysis

9.28 The Commission has approved Transit Loss at 0.8% for both Unit 2 and Unit 3 for FY 2011-12 as specified in the Generation Tariff Regulation, 2010.

Price of Primary Fuel

Petitioner's submission

9.29 The Petitioner has projected the landed cost of coal by making the certain assumptions regarding the base price, taxes and other levies, and transport and handling charges. The submission of the Petitioner in this regard has been reproduced below:

"Base Price:

(a) *Middling Coal is procured from 2 sources – West Bokaro & Bhelatand (Jharia) approximately in the ratio of 90%:10%. Accordingly, the same has been factored in the Landed Cost of Middling in order to arrive at the Weighted Average Base Price of Coal.*

(b) *In order to arrive at the Base Price of Coal for FY 2011-12, present Base Price of all types of Coal has been escalated @6.16% for domestic coal as per CERC Bid Evaluation Rate dated 28th December 2010.*

Other Charges & VAT/CST:

(a) *Royalty Charges for MCL Coal have been computed as per Ministry of Coal Notification dated 1st August 2007.*

(b) *Stowing Excise Duty, Sizing Cost & Internal Transport Cost for MCL Coal have been considered as per prevailing trends. However, for Middling & RJC Coal, these costs are included in the base price & therefore, have not been factored separately.*

(c) *VAT @4% has been considered in case of Middling Coal as applicable.*

(d) *CST @ 2% has been considered in case of MCL & RJC Coal as applicable.*

(e) *As per Regulation 8.19 (e) of JSERC Generation Tariff Regulations 2010, Clean Energy Cess @ 50/Ton has been added to the base price of all types of Coal as per Gol notification on 22nd June 2010 w.e.f. 1st July 2010.*

Transportation & Handling Charges:

(f) *Coal Transportation Cost through Rail has been considered as per the revised Freight Rates issued by Indian Railways (w.e.f. December 27, 2010) along with provision for overloaded wagons. In order to arrive at Transportation Charges of FY 2011-12, the present Transportation charges have been escalated @2.25% as per CERC Bid Evaluation Rate dated 28th December 2010.*

(g) *Handling Charges as applicable for various sources of Coal for FY 2010-11 has been escalated @4.87% as per CERC Bid Evaluation Rate dated 28th December 2010."*

9.30 The Petitioner has projected that during FY 2011-12 coal will be sourced from West Bokaro and Bhelatand Colliery of Tata Steel (Middling Coal) and Mahanadi Coalfields, Orissa (MCL Coal) and RJC Coal. The proportion of the various types of coal to be used has been projected as Middling Coal - 65%, MCL Coal - 25% and RJC Coal - 10%. The same has been used for calculation of weighted average price of coal by the Petitioner.

9.31 The landed cost of each type of coal and the weighted average price of coal as projected by the Petitioner is shown in the Table below.

Table 42: Submitted Landed Cost of Coal for FY 2011-12

Particulars	Units	Unit 2 and Unit 3			
		Middling	MCL	Imported	RJC
Proportion in the Overall Coal Mix	%	65%	25%	-	10%
Landed Cost	Rs/Ton	2505	1174	-	2418
Weighted Average Cost of Coal	2163				

Commission's analysis

9.32 The Commission has projected the price of the various types of coal to be used by the Petitioner in accordance with Regulation 8.22 of the Generation Tariff Regulation, 2010, which states that:

"8.22 Initially, the Base value of price of fuel oils, price of coal incurred by the Generating Company/ generating station shall be taken based on actuals of the weighted average price of the three preceding months and in the absence of weighted average landed costs for the three preceding months, latest respective weighted average procurement price for the generating station, before the start of the year."

9.33 Accordingly, the Commission directed the Petitioner to submit the landed cost of coal for the last three months prior to the start of the current financial year i.e. January to March 2011 and the exact calculation of the same.

9.34 For projection of coal price for FY 2011-12, the Commission has first recomputed the landed cost of coal for January to March 2011 considering:

(a) The actual base price of coal, other charges and tax, transportation and handling charges as submitted by the Petitioner for January to March 2011.

(b) Transit loss equal to 0.8% i.e. the approved transit loss as per the Generation Tariff Regulations, 2010.

9.35 The Commission has considered the weighted average of the landed cost of coal for January to March 2011, arrived using the methodology stated above, for projecting the coal price for FY 2011-12.

9.36 The Commission has considered the actual proportion of the various types of coal used in FY 2010-11 by the Petitioner for projection of the proportion of various types of coal to be used during FY 2011-12, as has already been explained in section 9.24.

9.37 The landed price of each type of coal and the weighted average cost of coal as projected by the Commission based on the above assumptions is shown in the Table below.

Table 43: Approved Landed Cost of Coal for FY 2011-12

Particulars	Units	Unit 2		Unit 3	
		MCL	Middling	MCL	Middling
Landed Cost	Rs/Ton	1179	2492	1180	2492
Proportion in the Overall Coal Mix	%	33.66%	66.34%	34.11%	65.89%
Weighted Average Cost of Coal	**Rs/Ton**	**2050.19**		**2044.61**	

Energy Charge Rate (ECR) and Cost of Primary Fuel

Petitioner's submission

9.38 The Petitioner has submitted that it has calculated the energy charge rate for FY 2011-12 as per the formula specified in the Generation Tariff Regulation, 2010 and the projected value of the fuel cost parameters. The ECR as submitted by the Petitioner for Unit 2 and Unit 3 is shown in Table 44 below.

Commission's analysis

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

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

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

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

(a) For coal based stations

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

Where, AUX - Normative auxiliary energy consumption in percentage

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

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

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

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

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

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

9.41 The Commission has calculated the ECR to be charged by the Petitioner as per the formula stated above and considering the approved values of the various fuel parameters. The table below contains the ECR for FY 2011-12 as submitted by the Petitioner and as approved by the Commission.

Table 44 : Energy Charge Rate for FY 2011-12

	Unit	Unit 2		Unit 3	
Parameters		**Submitted by TPCL**	**Approved by JSERC**	**Submitted by TPCL**	**Approved by JSERC**
Gross Generation	MU	875.04	895.97	906.96	895.97
Heat Rate	kCal/kWh	2652	2567	2652	2577
Specific Oil Consumption	ml/kWh	1.02	1.00	0.99	1.00
Calorific Value of Oil	kCal/l	9100	9100	9100	9100
Auxiliary Consumption	%	10.00%	10.00%	10.00%	10.00%
Net Generation	MU	787.54	806.37	816.26	806.37
Weighted Average Calorific Value of Coal	kCal/kg	3710	3803	3710	3801
Weighted Average cost of Coal	Rs/Ton	2163	2050.19	2163	2044.61
Energy Charge Rate	Rs/kWh	1.71	1.532	1.71	1.535
Cost of Primary Fuel	**Rs Cr**	**134.84**	**123.54**	**139.78**	**123.78**

Determination of Fixed Cost

Additional Capitalization

Petitioner's submission

9.42 The Petitioner has submitted that the generation tariff for Unit 2 and Unit 3 from FY 2007-08 to FY 2010-11 was determined as per the norms enshrined in the PPA signed between the Petitioner and TSL in 1997. Further, that during these four years, i.e., from FY 2007-08 to FY 2010-11, the Petitioner has incurred additional capital expenditure for Units 2 and Unit 3. According to the PPA, the same has been funded through internal accrual and the Petitioner did not consider the additional capitalization in the Gross Fixed Asset of the Units and, therefore, did not claim any additional revenue on account of the additional capitalization of these years.

9.43 The Petitioner has proposed to include the additional capitalization for the period FY 2007-08 to FY 2010-11 (on account of assets which are already in service prior to FY 2011-12) in the Gross Fixed Asset of Jojobera Units 2 and Unit 3 for the purpose of tariff determination from FY 2011-12 onwards.

9.44 Further, it has also proposed various capital expenditure schemes and additional capitalization for the year FY 2011-12.

9.45 The Petitioner has categorized these Capitalized Costs under 2 broad categories:

(a) Capitalization – Standalone: This includes the Capitalized Costs incurred for Assets/Schemes exclusively for Unit 2 and Unit 3.

(b) Capitalization – Common Facilities: This includes the Capitalized Costs which have been incurred for the whole Jojobera Power Station. These Assets/Schemes provide facilities to the whole power station and the Capitalized Cost of such Assets/Schemes has been apportioned to the GFA of Unit 2 and Unit 3 based on the installed capacity of these Units. It has submitted that both Unit 2 and Unit 3 individually contribute to 28.07% of the installed capacity of the Jojobera Power Plant.

9.46 The Petitioner submitted additional capitalization for Unit 2 (including apportioned additional capitalization of Common Facilities) for FY 2007-08 to FY 2011-12 as Rs. 29.87 Cr and the additional capitalization of Unit 3 (including apportioned additional capitalization of Common Facilities) for FY 2007-08 to FY 2011-12 as Rs. 31.15 Cr in its ARR petition. In subsequent submissions to the Commission, the Petitioner revised the amount of additional capitalization to Rs 30.77 Cr for Unit 2 and Rs 29.89 Cr for Unit 3. The additional capitalization submitted by the Petitioner in the ARR Petition and the revised figures submitted in the subsequent submissions is given in the Table below.

Table 45: Submitted Additional Capitalization (Rs Cr) for FY 2011-12

	Submitted in the ARR Petition			Submitted in Additional Information		
Particulars	**FY 2007-08 to FY 2010-11**	**FY 2011-12**	**Total**	**FY 2007-08 to FY 2010-11**	**FY 2011-12**	**Total**
Unit 2						
Capitalization - Standalone	14.35	8.52	22.87	12.25	11.13	23.38
Capitalization - Apportioned for Common Facilities	1.95	5.05	7.00	1.50	5.89	7.39
Total	**16.3**	**13.57**	**29.87**	**13.75**	**17.02**	**30.77**
Unit 3						
Capitalization - Standalone	17.51	6.65	24.15	13.52	8.98	22.50
Capitalization - Apportioned for Common Facilities	1.95	5.05	7.00	1.50	5.89	7.39
Total	**19.46**	**11.70**	**31.15**	**15.02**	**14.87**	**29.89**

Commission's analysis

9.47 The Commission has outlined the provisions for approval of capital cost, including any additional capitalization, for a generating station in the Generation Tariff Regulation, 2010. The relevant sections of the said Regulations are quoted below for reference.

"Capital Cost of the Project

'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) *capitalized initial spares subject to the ceiling norms specified as under …*

(c) *additional capital expenditure determined under clause 7.5 and 7.6 of these Regulation*

…

Additional Capitalisation

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

(i) Undischarged liabilities;

(ii) Works deferred for execution;

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

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

(v) Change in law.

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

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

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

(ii) Change in law;

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

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

9.48 As stated in Regulation 7.6 of the Generation Tariff Regulation, 2010 the Commission may allow additional capitalization after the cut-off date, after prudence check. Accordingly, the Commission directed the Petitioner to provide (a) the certificate of completion for the completed works from FY 2007-08 to FY 2010-11 which have been included in the additional capitalization, (b) a listing of the Fixed Assets Register (which is maintained in SAP) and identify the items for which additional capitalization has been claimed from FY 2007-08 to FY 2010-11 and (c) the justification for each scheme capitalized from FY 2007-08 to FY 2010-11.

9.49 The Commission has scrutinized the information provided by the Petitioner and has provisionally approved additional capitalization from FY 2007-08 to FY 2010-11 as submitted by the Petitioner. However, the O&M expenses, depreciation, interest on normative loan and return on equity on account of the same shall only be allowable from FY 2011-12 onwards. Meanwhile, the Petitioner has been directed, as mentioned in the directives under Section A11: of this Order, to get the certificate of completion and the listing of the Fixed Assets Register certified by the Statutory Auditors of the Company.

9.50 With regards to the additional capitalization proposed by the Petitioner for the ensuing year, i.e. FY 2011-12, the Commission has scrutinized the information provided by the Petitioner and has provisionally allowed the capital expenditure schemes and the related capitalization as proposed by the Petitioner. The same shall, however, be trued up after due prudence check by the Commission.

Table 46: Approved Additional Capitalization (Rs Cr) for FY 2011-12

	Unit 2		Unit 3	
Particulars	Submitted by TPCL*	Approved by JSERC	Submitted by TPCL*	Approved by JSERC
FY 2007-08 to FY 2010-11				
Additional Capitalization, Standalone Assets	12.25	12.25	13.52	13.52
Additional Capitalization (2008-11), Apportioned for Common Facilities	1.50	1.50	1.50	1.50
Sub-Total	**13.75**	**13.75**	**15.02**	**15.02**
FY 2011-12				
Additional Capitalization, Apportioned for Common Facilities	11.13	11.13	8.98	8.98
Additional Capitalization, Standalone Assets	5.89	5.89	5.89	5.89
Sub-Total	**17.02**	**17.02**	**14.87**	**14.87**
Total	**30.77**	**30.77**	**29.89**	**29.89**

*Submitted in Additional information

Normative Operation & Maintenance Expenses

Petitioner's submission

9.51 The Petitioner has proposed the O&M expenses on Original Project Cost for FY 2011-12 by considering an annual escalation factor of 6% over and above the O&M expenses approved by the Commission in the Tariff Order for FY 2010-11. Further, it has considered 2.5% of the additional capitalization estimated for FY 2007-08 to FY 2010-11 and proposed for FY 2011-12 towards O&M expenses in line with the JSERC (Terms and Conditions of Determination of Generation Tariff) Regulations, 2004. The normative O&M expenses for Unit 2 and Unit 3 have been submitted at Rs 25.96 Cr and Rs 23.63 Cr respectively.

Commission's analysis

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

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

(b) Administrative and General costs;

(c) Repairs and maintenance expenses; and

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

9.53 Further, as per Regulation 7.41 of the Generation Tariff Regulation, 2010, for the Existing Thermal Generating Stations, the O&M expenses for the Transition Period shall be as per the JSERC (Terms and Conditions of Determination of Generation Tariff) Regulations, 2004. The said Regulations lay down the following norm for O&M expenses:

"(i) The Operation and Maintenance expenses (hereinafter referred to as O&M expenses) shall include the following:

- Consumption of Stores and Spares

- Administration expenses

- Repair and Maintenance

- Employee cost

- Corporate Office Expenses allocated proportionately

- Insurance

(ii) ... The O&M expenses will be limited to 2.5 % of Capital Cost (for plants set up prior to 1.04.2004.) escalated at 6% per annum from the year of commissioning".

9.54 The Commission has observed that the Petitioner has misinterpreted the provisions of the Regulations regarding O&M expenses and has escalated the O&M expenses allowed for FY 2010-11 (allowed as per provisions of the PPA between TSL and TPCL) by 6% for calculation of normative O&M expenses on Original Cost of Capital, which is disallowed as per the provisions of the Generation Tariff Regulations, 2010.

9.55 In accordance with the Regulation 7.41 if the Generation Tariff Regulations, 2010 and the relevant clause of the Generation Tariff Regulations, 2004, the Commission has approved the normative O&M expenses for FY 2011-12 in accordance with the Regulations, as quoted above, by providing an escalation of 6% p.a. from the year of commissioning till FY 2011-12 on 2.5% of the approved Original Capital Cost.

9.56 The Commission has also included 2.5% of the approved additional capitalization and 6% escalation on the same as a part of the normative O&M expenses, after considering that the additional capitalization during a particular year was spread across the year.

Table 47: Normative O&M Expenses (Rs Cr) for FY 2011-12

	Unit 2		Unit 3	
Particulars	**Submitted by TPCL**	**Approved by JSERC**	**Submitted by TPCL**	**Approved by JSERC**
Normative O&M Expenses on Original Cost	25.22	20.47	22.85	18.72
Normative O&M Expenses on Additional Capitalization	0.75	0.60	0.78	0.61
Total	**25.96**	**21.07**	**23.63**	**19.33**

Additional O&M Expenses

9.57 In additional to the normative O&M expenses, discussed in the previous section, the Petitioner has also proposed additional O&M expenditure on account of:

(a) Ash Disposal Expenses

(b) lease rental for Land sub-lease

(c) ARR Application Fee and Publication Expenses

9.58 The following sections discuss the Petitioner's submission regarding these expenses and the Commission's analysis thereof.

Ash Disposal Expenses

Petitioner's submission

9.59 The Petitioner has submitted that evacuation of Ash generated from the power plant is an important and critical environmental concern. In Jojobera Power Plant of the Petitioner, Fly Ash to the extent of 67% is utilized through off-take by adjacent Cement Plant by M/s Lafarge and through bagging. Balance 33% of Fly Ash is dumped in the Ash Pond along with the Bottom Ash in slurry form (by mixing with raw mater). However, the full capacity of the Ash Ponds is already utilized. Therefore, the Petitioner is frequently required to dispose off Pond Ash through dumpers or similar modes of transport at specified areas within 100 km radius of the Power Plant as per the statutes laid down by Hon'ble Ministry of Environment and Forest (MoEF).

9.60 The Petitioner has further submitted that it is currently receiving Middling Coal (which constitutes about 68% of total fuel mix) with higher Ash Content than previous years which further elevates the Ash Generation.

9.61 The Petitioner has claimed that the expenses pertaining to Ash Disposal are completely beyond its control and need to be reimbursed over and above the normative O&M expenses.

9.62 The Ash Disposal expenses consist of Excavation and Transportation Costs plus the Raw Water Cost, required to convert the Pond Ash into slurry. The Petitioner has projected Ash Disposal Expenses for FY 2011-12 at Rs 3.32 Cr for Unit 2 and Rs 3.58 Cr for Unit 3 in its ARR Petition. In the subsequent submissions made to the Commission, the Petitioner has revised its projections of the Ash Disposal Expenses to a total of Rs 7.97 Cr for Unit 2 and Unit 3.

Commission's analysis

9.63 For projection of the Ash Disposal expenses for FY 2010-11, the Commission directed the Petitioner to submit the actual Ash Disposal expenses for FY 2010-11 and the detailed computation of its projections for Ash Disposal expenses for FY 2011-12, as well as the reasons for the projected increase in the same.

9.64 The Petitioner has submitted that the Ash Disposal expenses for FY 2010-11 were Rs 3.44 Cr for Unit 2 and Unit 3. The Petitioner has also submitted that it expects the Ash Disposal expenses to increase significantly in FY 2011-12 to Rs 7.97 Cr for Unit 2 and Unit 3 due to the following reasons:

(a) Increase in ash content of Middling Coal from 39.13% in FY 2010-11 to 42% in FY 2011-12 and increase in ash content of MCL Coal from 42.02% in FY 2010-11 to 48% to FY 2011-12.

(b) Increase in PLF and thus generation and coal consumption of Unit 2 and Unit 3.

(c) Irregular off-take by M/s Lafarge Plant, which is projected to decrease from 2,25,989 Tons in FY 2010-11 to 2,18,272 Tons in FY 2011-12. Also, ash utilization by other cement plants and bagging is projected to decrease from 1,09,489 Tons to 42,105 Tons.

(d) Increase in the distance for which the ash needs to be transported due to the orders of the Jharkhand State Pollution Control Board disallowing the disposal of ash in nearby sites such as Vivek Nagar etc.

(e) Increase in transportation and, excavation and handling costs due to inflation.

9.65 Regarding the assumptions made by the Petitioner for projecting the Ash Disposal expenses in FY 2011-12, the Commission has observed that:

(a) The projected increase in ash content of MCL Coal from 42.02% in FY 2010-11 to 48% in FY 2011-12 seems to be on the higher side given that the ash content of MCL Coal, as per the Petitioner's own submission, has not changed significantly between FY 2009-10 and FY 2010-11. Also, while the ash content of Middling Coal increased by 1.67% between FY 2009-10 and FY 2010-11 as per the Petitioner's own submission, the Petitioner has projected it to increase by 2.87% between FY 2010-11 and FY 2011-12. This too seems to be on the higher side.

(b) The projected decline in off-take by M/s Lafarge and other cement plants and bagging seems to be on assumption basis and no concrete reason for the same has been given.

(c) The increase in transportation costs and, excavation and handling charges has been calculated by escalating the expenses for FY 2010-11 by CERC Bid Evaluation Rate. However, the actual increase may vary from the escalation considered.

9.66 In view of the above observations, the Commission is not satisfied with the projections made by the Petitioner for Ash Disposal expenses for FY 2011-12. The Commission has thus decided to provisionally allow the Ash Disposal expenses for FY 2011-12 at the same level as the actual Ash Disposal expenses for FY 2010-11, i.e. Rs 3.44 Cr for Unit 2 and Unit 3 (or Rs 1.72 Cr each for Unit 2 and Unit 3). The same shall be trued up as per the actual expenditure to be made available by the Petitioner with the tariff petition subject to the availability of the actual information.

Lease Rent for Sub-Lease of Land

Petitioner's submission

9.67 The Petitioner has submitted that it had acquired the Power Plant at Jojobera from M/s Tata Steel Ltd (TSL) (then Tata Iron & Steel Co. Ltd.) in 1997. According to the Transfer Deed, the land in which the Power Plant is installed was to be sub-leased to the Petitioner. In the Power Purchase Agreement signed between the Petitioner and TSL, it was agreed between the parties that TSL will provide necessary property rights and leasehold to the Petitioner to operate in the project site and the Petitioner will have to pay for the all applicable statutory charges.

9.68 The Petitioner has further submitted that land was leased to TSL by Govt. of Bihar. Recently, TSL has been notified by Govt. of Jharkhand to produce details of its sub-leased land. As there is no sub-lease agreement signed between the Petitioner and TSL till date, the Petitioner is required to sign the sub-lease agreement with TSL and pay the lease rentals for such sub-leased land. The Petitioner has proposed to recover such lease rental for FY 2011-12 in the ARR for FY 2011-12.

9.69 The Petitioner has projected the lease rent for the sub leased land by considering the current Market Rate for Industrial Land at Rs 0.99[1] Cr/acre and rate of lease rent @ 5.00% of the above Rate. The total land sub-leased (112[2] acre) has been apportioned to Unit 2 and Unit 3 based on their contribution towards total installed capacity of Jojobera Power Plant. Further, cess payment under various heads on lease rental as specified by Govt. of Jharkhand has also been factored. Based on the above assumption, the lease rent has been projected Rs 3.81[3] Cr individually for each of Unit 2 and Unit 3 for FY 2011-12.

Commission's analysis

9.70 As per the submission made by the Petitioner, the sub lease agreement has not yet been signed between the Petitioner and TSL. The Petitioner has also admitted in the additional submissions made to the Commission that the determination of such liability may take place over a period of 2-3 years and that:

(a) Since the time of takeover of plants was way back in 1997, no lease in rent has been paid so far;

(b) It is not clear whether such liability would be with retrospective effect i.e. since 1997 or from any other point of time;

9.71 Thus the matter has not yet attained finality and the actual impact of the same is uncertain. Further, the projection of lease rent made by the Petitioner is on assumption basis and the actual amount of lease rent payable, if any, may vary.

9.72 Given the uncertainty regarding the actual liability, the Commission considers the claim of the Petitioner to be premature. It has, therefore, not considered this claim while determining the ARR for FY 2011-12. The claim of the Petitioner may be considered by the Commission when the actual liability on this account arises.

Application Fee and the Publication Expenses

Petitioner's submission

9.73 The Petitioner has submitted that it should be allowed to recover the expenses incurred on account of the applicable ARR application fee at Rs 0.08 Cr as per the JSERC Conduct of Business Regulation, 2003. The Petitioner has also estimated expenses for publication of Notices for the ARR and tariff petition at Rs 0.16 Cr.

[1] The same was revised to Rs 1.275 Cr/acre in the Additional Information

[2] The same was revised to 132.37 acre in the Additional Information

[3] The same was revised to Rs 5.80 Cr in the Additional Information

9.74 The Petitioner has apportioned the amount equally each for Unit 2 and Unit 3 and accordingly, the ARR Application Fee and Publication Expenses for FY 2011-12 work out to Rs 0.12 Cr each for Unit 2 and Unit 3.

Commission's analysis

9.75 The Regulation 11.7 of the Generation Tariff Regulation, 2010 as quoted below provide for recovery of expenses of Application Fee and Publication Expenses by a Generating Company from its Beneficiaries.

"11.17 The application filing fee and the expenses incurred on publication of notices in the application for approval of tariff, may in the discretion of the Commission, be allowed to be recovered by the generating company or the transmission licensee, as the case may be, directly from the beneficiaries or the transmission customers, as the case may be"

9.76 Accordingly, the Commission has decided to allow the ARR Application Fee and Publication expenses of Rs 0.12 Cr each for Unit 2 and Unit 3 as proposed by the Petitioner. The same shall, however, be trued up as per the actual expenditure incurred by the Petitioner on the same.

Total O&M Expenses

9.77 The total O&M expenses as submitted by the Petitioner and as approved by the Commission for FY 2011-12, based on the discussion in the previous sections, are shown in the Table below.

Table 48: O&M Expenses (Rs Cr) for FY 2011-12

	Unit 2		Unit 3	
Particulars	**Submitted by TPCL**	**Approved by JSERC**	**Submitted by TPCL**	**Approved by JSERC**
Normative O&M Expenses	25.96	21.07	23.63	19.33
Ash Disposal Expenses	3.32	1.72	3.58	1.72
Lease Rent for Sub-Lease of Land	3.81	0	3.81	0
ARR Publication and Fee Expenses	0.12	0.12	0.12	0.12
Total	**33.22**	**22.92**	**31.14**	**21.18**

Depreciation

Petitioner's submission

9.78 The Petitioner has submitted that Unit 2 and Unit 3 at Jojobera were commissioned in February 2001 and February 2002 respectively. Since both the Units have not yet completed 12 years of operation, as per the norm specified in Generation Tariff Regulation, 2010, the depreciation rates for various classes of assets as prescribed in the Generation Tariff Regulation, 2010 is applicable for both the Units.

9.79 The Petitioner has calculated depreciation on:

(a) The Original Project Cost for Unit 2 and Unit 3 and;

(b) Additional capitalization submitted for the two units from FY 2007-08 to FY 2011-12.

9.80 The following table summarises the depreciation submitted by the Petitioner for Unit 2 and Unit 3 for FY 2011-12.

Table 49: Submitted Depreciation for FY 2011-12 (Rs Cr)

Particulars	Unit 2	Unit 3
Depreciation on Original Cost of Capital	22.08	21.81
Depreciation on Additional Capitalisation (FY 2007-08 to FY 2011-12)	1.17	1.29
Total Depreciation	**23.25**	**23.10**

Commission's analysis

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

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

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

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

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

9.82 The Commission has observed that both for Unit 2 and Unit 3, the cumulative depreciation on the Original Project Cost for some assets has exceeded 70%. For these assets, the Commission has spread the balance depreciable value of the assets (as on March 31, 2011) over the balance useful life of the asset.

(Note: For purpose of calculation of depreciation, the useful life of assets has been considered as 25 years. Since depreciation has been charged for Unit 2 from 2002 onwards, the balance useful life of assets for Unit 2 has been taken equal to 15 years. For Unit 3, depreciation has been charged from 2003 onwards, the balance useful life of assets for Unit 3 has been taken equal to 16 years.)

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

9.84 The Petitioner has submitted that since both the Units have not yet completed 12 years of operation, as per Regulation 7.31 of the Generation Tariff Regulation, 2010, the depreciation rates for various classes of assets as prescribed in the Generation Tariff Regulation, 2010 is applicable for both the Units.

9.85 However, the Petitioner has misinterpreted the provisions regarding depreciation as stated in the Generation Tariff Regulation, 2010. Regulation 7.31 (as quoted below) of the said Regulations pertains to norms for calculation of depreciation for the new generating stations.

"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:

Provided that, the remaining depreciable value as on 31st March of the Year closing after a period of 12 Years from the Date of Commercial operation shall be spread over the balance Useful life of the assets."

9.86 The said norm has been specified in accordance with the norm specified by the Central Electricity Regulatory Commission (CERC) for calculation of depreciation in CERC (Terms and Conditions of Tariff) Regulations, 2009.

9.87 In the Statement of Objects and Reasons (SOR) published with respect to the CERC (Terms and Conditions of Tariff) Regulations, 2009, the CERC has specified the objective (as quoted below) for linking depreciation with 12 years of use of the asset from the Date of Commercial Operation.

"16.13 In a regulatory environment, the Commission has to protect the interest of the consumers while determining tariff and at the same time it is to be seen that the investors are having sufficient liquidity and revenue to meet their commercial commitment. Apart from paying regular dividend to the shareholders the utilities should have sufficient liquidity to cater to the loan repayment obligation. The Commission is aware of the burden of repayment of loan that will accrue over the initial years of the project life.

Linking depreciation to the useful life of the assets may not provide sufficient cash flow to the utilities to meet their loan repayment obligation. Normally, the projects are having a debt component of 50% to 70% and are repayable over a period of 12 years. ***If higher depreciation is allowed over a period of initial 12 years, the debt repayment obligation can easily be met by the utilities. Once the loans are repaid, the benefit of reduced tariff should go to the consumers****.*

16.14 Accordingly, the Commission feels that the loan repayment period be treated as 12 years for all normative loans and accordingly this repayment period of 12 years be linked to depreciation. For 12 years during which the loan capital would be refunded to the investors in the form of depreciation, the rate of depreciation shall be as specified in appendix-III of the regulation and thereafter the remaining depreciable value shall be spread over the balance useful life of the assets."

9.88 It may be noted that the repayment of long term debt of the Unit 2 and Unit 3 (on the Original Project Cost) has been completed in the years FY 2009-10 and FY 2010-11 respectively and the cumulative depreciation for certain assets has reached 70%. Therefore, even though the Units have not yet completed 12 years of operation, the remaining depreciable value for such assets should be spread over the balance useful life of the assets (in accordance with Regulation 7.32 of the Generation Tariff Regulation, 2010).

9.89 The Commission has also allowed depreciation on the approved additional capitalization considering the depreciation rates specified in Generation Tariff Regulation, 2010. Depreciation has been provided for twelve months on the approved additional capitalization for FY 2007-08 to FY 2010-11; and for six months on the approved additional capitalization for FY 2011-12, considering that asset addition will be spread over the course of the entire year.

9.90 The depreciation approved for FY 2011-12 on Original Project Cost and additional capitalization is given in the Table below.

Table 50: Approved Depreciation for FY 2011-12 (Rs Cr)

Particulars	Unit 2	Unit 3
Depreciation on Original Cost of Capital	3.59	5.34
Depreciation on Additional Capitalisation (FY 2007-08 to FY 2011-12)	1.14	1.14
Total Depreciation	**4.73**	**6.48**

Interest on Loan

Petitioner's submission

9.91 The Petitioner has submitted that the repayment of long term debt of the Original Project Cost of the Unit 2 and Unit 3 has been completed in the years FY 2009-10 and FY 2010-11 respectively.

9.92 The Petitioner has further submitted that as per the Generation Tariff Regulation, 2010 it has considered 70% of the additional capitalisation from FY 2007-08 to FY 2011-12 as normative debt and has considered interest on the same @ 11.75% i.e. the applicable SBI PLR. The depreciation on additional capitalization has been considered as deemed repayment of normative debt.

Commission's analysis

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

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

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

Explanation:- Any expenditure incurred or projected to be incurred on or after 1.04.2011 as may be admitted by the Commission as additional capital 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."

9.94 Since repayment of the normative loan for the Original Project Cost for Unit 2 and Unit 3 has been completed in the years FY 2009-10 and FY 2010-11 respectively, the opening normative loan for FY 2011-12 for both the Units is ZERO.

9.95 The Commission has allowed interest on loan on the approved additional capitalization (from FY 2007-08 to FY 2011-12) considering 70% of the approved capitalization as normative debt.

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

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

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

9.97 The last available weighted average rate of interest for Unit 2 and Unit 3 is 13.02% and 12.33% respectively (which was the rate of interest on the long term debt of Unit 2 and Unit 3 in FY 2009-10 an FY 2010-11 respectively). The same has been considered for calculation of interest on normative loan.

Table 51: Interest on Loan for FY 2011-12 (Rs. Cr)

	Unit 2		Unit 3	
Particulars	Submitted by TPCL	Approved by JSERC	Submitted by TPCL	Approved by JSERC
Opening Debt on Original Capital Cost	0.00	0.00	0.00	0.00
Additions during 2008-11	11.41	9.63	13.62	10.51
Opening Debt for the year	11.41	9.63	13.62	10.51
Additions during FY 2011-12	9.50	11.91	8.19	10.41
Repayment	1.17	1.14	1.29	1.14
Closing Debt	19.74	20.40	20.51	19.78
Rate of Interest	11.75%	13.02%	11.75%	12.33%
Interest on Debt	**1.83**	**1.96**	**2.01**	**1.87**

Interest on Working Capital

Petitioner's submission

9.98 The Petitioner has computed the interest on working capital by considering:

(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 one 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.

9.99 The rate of interest on working capital has been taken as 11.75%.

Commission's analysis

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

(a) Cost of Coal for 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.

9.101 The rate of interest on working capital has been taken as 13.25% i.e. the short-term Prime Lending Rate of State Bank of India as on April 1, 2011.

9.102 Accordingly, the Commission has computed the interest on working capital for Unit 2 and Unit 3 for FY 2011-12 as shown in the Table below.

Table 52: Interest on Working Capital for FY 2011-12 (Rs Cr)

	Unit 2		Unit 3	
Particulars	Submitted by TPCL	Approved by JSERC	Submitted by TPCL	Approved by JSERC
Coal Cost for 2 months	23.01	20.59	23.01	20.63
LDO Cost for 2 months	0.67	0.66	0.67	0.67
Receivables for 2 months	38.38	31.89	37.93	31.79
O&M Expenses for 1 month	2.77	1.91	2.59	1.76
Maintenance Spares (@ 20% of O&M Expenses)	6.64	4.58	6.23	4.24
Total Working Capital	**71.48**	**59.63**	**70.44**	**59.08**
Rate of Interest	11.75%	13.25%	11.75%	13.25%
Interest on Working Capital	**8.40**	**7.90**	**8.28**	**7.83**

Return on Equity (RoE)

Petitioner's submission

9.103 The Petitioner has considered the post-tax return on equity at 15.5% on the equity component of the Original Project Cost. It has further claimed that the Generation Tariff Regulation, 2010 have not specified any normative post-tax return on equity for equity component of additional capitalization. The Petitioner has argued that since the capitalization of various capex schemes during FY 2007-08 to FY 2010-11 was completed within the committed timeline and also, capitalization of various capex schemes of FY 2011-12 is expected to be within the proposed timelines, it has considered post-tax return on equity at 16% on the equity component of the estimated additional capitalization for FY 2007-08 to FY 2010-11 and the proposed additional capitalization for FY 2011-12.

9.104 The Petitioner has considered the Debt-Equity ratio for any project or any additional capital expenditure as 70:30.

9.105 The Petitioner has submitted that both Unit 2 and Unit 3 shall operate under Minimum Alternate Tax (MAT) regime for the year FY 2011-12. Therefore, the post tax RoE has been grossed up by the applicable MAT rate of 19.9305% to arrive at the pre-tax RoE.

Commission's analysis

9.106 The Commission has worked out the gross normative equity for FY 2011-12 as per Regulation 7.13 and 7.14 of the Generation Tariff Regulation, 2010 as quoted above in paragraph 9.93. Accordingly, the opening normative equity for the year has been taken equal to the normative equity admitted by the Commission till April 1, 2011.

9.107 The Commission has also allowed return on equity on the approved additional capitalization (from FY 2007-08 to FY 2011-12) considering 30% of the approved capitalization as normative equity.

9.108 Further, the base rate of return on equity has been considered at 15.50% as per Regulation 7.16 of the Generation Tariff Regulation, 2010. In accordance with Regulation 7.17 and 7.18 of the said regulations, the same has been grossed by the applicable tax rate for FY 2010-11 (19.9305%) to arrive at the pre tax return on equity for FY 2011-12.

9.109 The Commission has not considered any additional return on the additional capitalisation approved for the year as has been proposed by the Petitioner. The Commission observes that Regulation 7.16 of the Generation Tariff Regulation, 2010 clearly states that:

*"7.16 .... 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"*

Thus the Petitioner shall be eligible for an additional return of 0.5% (over and above the base rate of 15.50%) on the capital schemes started after April 1, 2011 only if such projects are completed in time. The additional return, if any, shall be allowed to the Petitioner at the time of true up after due prudence check by the Commission. The return on equity on the equity portion of the additional capitalization has been taken as 15.50%.

Table 53: Return on Equity for FY 2011-12 (Rs Cr)

	Unit 2		Unit 3	
Particulars	Submitted by TPCL	Approved by JSERC	Submitted by TPCL	Approved by JSERC
Opening Equity on Original Capital Cost	129.40	129.40	125.44	125.44
Additions during FY 2007-08 to FY 2010-11	4.89	4.13	5.84	4.51
Opening Equity for FY 2011-12	134.29	133.53	131.28	129.95
Additions during FY 2011-12	4.07	5.10	3.51	4.46
Closing Equity for FY 2011-12	138.36	138.63	134.79	134.41
Rate of Return on Equity Component	15.50%	15.50%	15.50%	15.50%

	Unit 2		Unit 3	
Particulars	**Submitted by TPCL**	**Approved by JSERC**	**Submitted by TPCL**	**Approved by JSERC**
of Original Cost				
Rate of Return on Equity Component of Additional Capitalization	16.00%	15.50%	16.00%	15.50%
Tax Rate	19.93%	19.93%	19.93%	19.93%
Return on Equity	**26.84**	**26.34**	**26.15**	**25.59**

Cost of Secondary Fuel

Petitioner's submission

9.110 The Petitioner has submitted the cost of secondary fuel – Light Diesel Oil (LDO) – by considering the generation corresponding to the NAPAF (i.e. 85%) and Specific Normative Fuel Oil Consumption (i.e. 1ml/kWh).

9.111 The price of LDO has been submitted at Rs 45000/kL by considering an Annual Price escalation as per CERC Bid Evaluation Rate over the current price.

Commission's analysis

9.112 The Commission has projected the cost of secondary fuel oil (LDO in case of the Petitioner) in accordance with Regulation 7.49 of the Generation Tariff Regulations, 2010 as quoted below:

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

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

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."

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

9.114 The submitted and approved cost of LDO for FY 2011-12 is shown in the table below:

Table 54: Cost of Secondary Fuel Oil for FY 2011-12 (Rs Cr)

	Unit 2		Unit 3	
Particulars	Submitted by TPCL	Approved by JSERC	Submitted by TPCL	Approved by JSERC
Gross Generation at NAPF (MU)	895.97	895.97	895.97	895.97
Specific Consumption of LDO at NAPF (ml/kWh)	1.00	1.00	1.00	1.00
LDO Consumption at NAPF (kL)	895.97	895.97	895.97	895.97
LDO Landed Cost (Rs/kL)	45000	44045	45000	44542
LDO Cost (Rs Cr)	**4.03**	**3.95**	**4.03**	**3.99**

Incentive

Petitioner's submission

9.115 The Petitioner has submitted that Regulation 8.12 of the Generation Tariff Regulations, 2010 as quoted below stipulates the norm for recovery of Annual Fixed Charges.

"8.12 The capacity charge (inclusive of incentive) payable to a thermal generating station for a calendar month shall be calculated in accordance with the following formulae :

(a) Generating stations in commercial operation for less than ten (10) years on 1st April of the financial year :

= (AFC x (NDM / NDY) x (0.5 + 0.5 x PAFM / NAPAF) (in Rupees);

Provided that in case the plant availability factor achieved during a financial year (PAFY) is less than 70%, the total capacity charge for the year shall be restricted to: =AFC x (0.5 + 35 / NAPAF) x (PAFY / 70) (in Rupees)

(b) For generating stations in commercial operation for ten (10) years or more on 1st April of the year:

= (AFC x NDM / NDY) x (PAFM / NAPAF) (in Rupees)

Where, AFC - Annual fixed cost specified for the year, in Rupees;

NAPAF - Normative annual plant availability factor in percentage;

NDM - Number of days in the month;

NDY - Number of days in the year;

PAFM - Plant availability factor achieved during the month, in percent;

PAFY - Plant availability factor achieved during the year, in percent"

9.116 The Petitioner has submitted that since Unit 2 has completed ten years of operation and Unit 3 has completed nine years of operation, therefore, Unit 2 qualifies under Regulation 8.12 (b) and Unit 3 qualifies under Regulation 8.12 (a) for the computation of incentive.

9.117 The Petitioner has calculated the generation incentive for FY 2011-12 considering that the projected Availability for the year (at 90%) is higher than the NAPAF (at 85%). Further the Petitioner has grossed up the incentive so arrived by the applicable MAT Rate to arrive at the pre-tax incentive at Rs 6.78 Cr and Rs 3.29 Cr for Unit 2 and Unit 3 respectively.

9.118 The Petitioner has also requested the Commission to allow it to recover the incentive component of AFC through monthly invoice depending on the actual YTD Availability achieved for Unit 2 and Unit 3.

Commission's analysis

9.119 The Commission observes that the Petitioner has been submitting availability of 90% or more, while it has stated that the PLF is lower due to the constrains it is facing from the buyer, TSL. Whereas TSL has sought approval from the Commission for additional procurement from its steel plant due to non-availability of sufficient power from TPCL and DVC. Meanwhile, the two units of the Jojobera Plant are also not under the purview of the SLDC which makes it difficult to ascertain the actual availability.

9.120 In view of the above, for the time being, the Commission is of the view that the incentive calculated as per the formula specified in the Generation Tariff Regulations, 2010 cannot be allowed to the Petitioner on the basis of projection of Availability.

9.121 Accordingly, the Commission directs the Petitioner not to recover incentive component of AFC through monthly invoicing in FY 2011-12.

9.122 The same would be taken up at the time of true up for the year, in subsequent orders of the Commission, when the actual availability is submitted. The Commission also directs the Petitioner to provide the following so the Commission can verify the actual availability:

(a) Certification from the buyer on the availability

(b) Month-wise PLF

(c) details of shutdown hours (scheduled as well as unscheduled)

(d) details of running hours segregated by loading pattern

Summary of Fixed Cost Determinants and Generation Tariff

9.123 The table below shows the fixed cost determinants and Generation tariff for FY 2011-12, in terms of the Petitioner's submission and the Commission's approved costs for Unit 2.

Table 55: Fixed Cost and ECR for FY 2011-12

Parameters	Units	Unit 2		Unit 3	
		Submitted by TPCL	Approved by JSERC	Submitted by TPCL	Approved by JSERC
O&M charges	Rs Cr	33.22	22.92	31.14	21.18
Depreciation	Rs Cr	23.25	4.73	23.10	6.48
Interest on Loan	Rs Cr	1.83	1.96	2.01	1.87
Return on Equity	Rs Cr	26.84	26.34	26.15	25.59
Incentive	Rs Cr	6.78	0.00	3.29	0.00
Interest on Working Capital	Rs Cr	8.40	7.90	8.28	7.83
Income Tax	Rs Cr	-	-	-	-
Cost of Secondary Fuel	Rs Cr	4.03	3.95	4.03	3.99
Total Fixed cost	Rs Cr	**104.35**	**67.80**	**98.00**	**66.94**
Energy Charge Rate (ECR)	Rs/kWh	1.71	1.532	1.71	1.535
Fuel Cost	Rs Cr	134.84	123.54	139.78	123.78
Total Cost	Rs Cr	**239.19**	**191.34**	**237.78**	**190.72**
Net Generation	MU	787.54	806.37	816.26	806.37
Generation Tariff	Rs/kWh	**3.04**	**2.37**	**2.91**	**2.37**

A10: STATUS OF EARLIER DIRECTIVES

Directives as per TO 2010-11	Status	Views of the Commission
The Petitioner is directed to maintain separate accounts for Unit-II and Unit-III of Jojobera power station. Further, the accounts should be audited annually and form a part of the ARR petition.	The Petitioner has submitted that accounts of both the Units are being maintained separately w.e.f. February 2010. Accounts of both Units are audited annually.	The Petitioner has submitted the 13th Bill covering financial statements as raised on TSL by the Petitioner which has been certified by the auditors of the Petitioner.
The Commission has observed that the performance of the two Units of Jojobera plant with respect to some of the operational parameters is lower than those of the other similarly placed plants in the country. In particular, the SHR, the PLF, normative annual plant availability factor (as per CERC Tariff Regulations, 2009) and the auxiliary consumption can be improved further to the extent of CERC approved operational norms for thermal stations of such nature. The Commission directs the TPCL to take note from similar comparison of 110/120 MW, as stated below, and take appropriate measures to improve the operational parameters for both the units.	The Petitioner has submitted that it has engaged M/s CPRI for carrying out Energy Audit of Unit 2 and Unit 3. Energy Audit for Unit 3 is already complete and the Petitioner has submitted that it is in the process of studying the recommendations suggested by CPRI.	The Commission has studied the CPRI report on Unit 3 and has given its observations in the Tariff Order. The Commission has also given fresh directives to the Petitioner on various aspects dealt in the report in the Section 11 in new Directives of this Order.
The Commission directs the Petitioner to increase the PLF to 85% for both the Units so that the surplus power can be sold to other utilities.	The Petitioner has submitted that it is bound to supply entire contracted capacity to TSL as per PPA. The Petitioner is in discussion with TSL if further generation from Unit 2 and Unit 3 can be raised and the surplus power can be sold to other utilities by TSL.	The Commission observes that the Petitioner has been submitting availability of 90% or more, while it has stated that the PLF is lower due to the constrains it is facing from the buyer, TSL. Whereas TSL has sought approval from the Commission for additional procurement from its steel plant due to non-availability of sufficient power from TPCL and DVC. The Commission views that the Petitioner needs to conduct a thorough review of its Units to ascertain the detailed reasons for the difference in the PLF and availability and the improvement strategy for PLF to ensure the PLF of 85% is achieved. The Petitioner is directed to submit a report on the same within 3 months of the issue of this Order.

Directives as per TO 2010-11	Status	Views of the Commission
The Commission observes that the quality of imported coal obtained in the FY 2008-09 and FY 2009-10, is inferior with a GCV of only 2993 kcal/kg and 2980 kcal/kg for the respective years. At the same time, the cost of imported coal of Rs 6734 for FY 2008-09 and Rs 6607 for FY 2009-10 is exorbitant. TPCL is directed to look into the reason for supply of such inferior quality of coal and submit a report to the Commission within next three months.	The Petitioner has submitted that the boilers of Unit 2 and Unit 3 of Jojobera are not designed for firing imported coal. Hence, it has been blended with MCL coal to ensure safe and reliable operation of the Units. Thus, the GCV of blended coal is low. For the purpose of computation of energy charges, GCV of this blended coal has been considered as GCV of imported coal as the segregation of the same is not possible.	The Petitioner has not submitted a detailed report on this regard. It is directed to submit the same within two months of the issue of this Order.
The Commission directs the Petitioner to reconcile the payment due/receipts with TSL, in view of the revised Generation Tariff for power sold to TSL, as determined by the Commission in this order within three months. The Generation Company is required to generate a supplementary bill for the reconciled billed amount and submit the same to TSL.	The Petitioner has submitted that the reconciliation of payment due/receipts with TSL has been done.	The Petitioner has complied with the Directive.
The Commission also directs the Generation Company to ensure that, henceforth, the monthly billing by TPCL, for the power sold to TSL is done unit-wise.	Separate bills are being issued each month for both Units.	The Petitioner has complied with the Directive.
The Commission directs TPCL to come up with the next tariff petition for FY 2011-12 removing the various data deficiencies highlighted throughout the tariff order along with the unit-wise audited accounts for FY 2009-10 and latest actual figures of FY 2010-11. The Commission also directs the Petitioner to file the next tariff petition by 1st Nov 2010 and also ensure submission of ARR & tariff filings for the ensuing year are done by 1st Nov every year prior to the tariff period.	The Petitioner has submitted that it has complied with the directive after it was granted phase wise extension of 2 months by the Commission.	The Petitioner has not fully complied with the directive as the Petition was not filed within the stipulated time and many discrepancies were also observed in the Petition. The Petitioner is directed to ensure full compliance in the next petition.

A11: DIRECTIVES

Capital Investment for additional capitalization

11.1 With regards to the Additional Capitalization from FY 2007-08 to FY 2010-11 claimed by the Petitioner, the Petitioner is directed get the Certificate of Completion and the listing of the Fixed Assets Register, as submitted by it, certified by the Statutory Auditors of the Company and submit the same to the Commission with the next tariff petition.

11.2 The Petitioner should also submit the start date, current status and expected completion date of the schemes for each capital expenditure scheme proposed for FY 2011-12 and submit the same to the Commission with the next tariff petition.

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

Improvement of Operation parameters and energy audit

11.4 The Commission directs the Petitioner to conduct an energy audit and insulation checking and rectify the same by incorporating insulation repair in the Annual Maintenance Plan.

11.5 The Commission also directs the Petitioner to provide actual operational Heat Balance Diagrams of the units at 100% load, 80%, 75% & 50% and a month-wise loading profile of the Units.

11.6 The Petitioner is also further to provide the design Heat Balance Diagram at the above load conditions along with an explanation of the variances in the various TG cycle equipment performances from the design conditions.

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

11.7 The Commission directs the Petitioner to reconcile the payment due/receipts with TSL, in view of the revised Generation Tariff for power sold to TSL for FY 2009-10, FY 2010-11 & FY 2011-12, as determined by the Commission in this order within three months.

11.8 On account of revision of expenses for FY 2008-09, the Commission directs the Petitioner to bill the incremental amount of Rs.1.53Cr (Rs 0.88 Cr for Unit 2 and Rs 0.65 Cr for Unit 3) to be claimed from TSL in FY 2011-12 with intimation to the Commission.

11.9 The Generation Company is required to generate a supplementary bill for the reconciled billed amount and submit the same to TSL.

Pollution Control

11.10 The Petitioner is directed to provide a status report on the pollution control norms being followed at the Jojobera Power Plant and an action taken report to curb the pollution levels within three months of the issue of this Tariff Order.

Data adequacy in next Tariff petition and timelines

11.11 The Commission directs TPCL to come up with the next tariff petition for FY 2012-13 removing the various data deficiencies highlighted throughout the tariff order along with the unit-wise audited accounts for FY 2010-11 and latest actual figures of FY 2011-12.

11.12 The Commission also directs the Generation Company to file the next tariff petition along-with the Business Plan for FY 2012-13 as per the MYT Framework by 1st November 2011 and also ensure submission of subsequent ARR & tariff filings for the ensuing year are done by 1st November every year prior to the tariff period.

This Order is signed and issued by the Jharkhand State Electricity Regulatory Commission on this the 20th of August, 2011.

Date: 20th of August, 2011
Place: Ranchi

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

A12: ANNEXURES

List of participating members of public in the public hearing

Table 56: List of participating members of public in the public hearing

Sl. No.	Name	Address / Organization if any
1.	Aveek Chattarjee,	Manager (Reg.), Tata Power
2.	Tarun Negi	Tata Power
3.	V.H. Wagle	Tata Power
4.	P.L. Manjerekar	Tata Power
5.	Ayay Kumar	Tata Steel
6.	U. N. Jha	Tata Power
7.	M.M. Singh	Tata Power
8.	Rajesh	Tata Power
9.	Supratik Mukherji	Tata Power
10.	Rajesh Kumar	Sonari
11.	D. M. Choudhary	Tata Steel
12.	Sharad Kumar	JUSCO
13.	Rajesh Sharma	Tata Power
14.	Rajesh Prasad	Tata Power
15.	A. K. Lodhi	Tata Power
16.	Satish Kumar	Tata Power
17.	C. M. Dubey	Shastrinagar, Jamshedpur
18.	Raja Biswas	Tata Power
19.	Sanjay Sharma	Tata Power
20.	Hardeep Singh	Tata Power
21.	Rajesh Saha	Tata Power
22.	B. K. Ojha	Dainik Jagran, Press
23.	Dipak Singh	Sanmarg, Hindi Dainik, Press
24.	V.P. Singh	JUSCO
25.	K.C. Jha	JUSCO

Sl. No.	Name	Address / Organization if any
26.	Cosmor D. Lakra	Tata Power
27.	U. N. Ekka	Tata Power
28.	Deepu Minz	Tata Power
29.	V. Singh	Tata Power
30.	Manoj Kumar Singh	NEWS 11
31.	Ranjeet Ojha	ETV
32.	Shahid Khan	NEWS TIMES
33.	A. Kumar Ranjan	Kadma