CHHATTISGARH STATE ELECTRICITY REGULATORY COMMISSION

RAIPUR

Chhattisgarh State Power Generation Co. Ltd. ...... P. No. 31/2018(T)

Present: **Narayan Singh, Chairman**
Arun Kumar Sharma, Member

In the matter of –

Chhattisgarh State Power Generation Company Ltd. (CSPGCL) Petition for approval of Capital cost for MTPP, True up of ARR for FY 2015-16, Provisional True up of FY 2016-17, and Tariff determination for FY 2018-19 to FY 2020-21 for 2 x 500 MW Marwa Thermal Power Project.

ORDER

(Passed on July 07, 2018)

1. The Commission had notified Chhattisgarh State Electricity Regulatory Commission (Terms and Conditions for determination of tariff according to Multi-Year Tariff principles and Methodology and Procedure for determination of Expected revenue from Tariff and Charges) Regulations, 2012 (hereinafter referred to as CSERC MYT Regulations, 2012).

2. Further, the Commission notified the Chhattisgarh State Electricity Regulatory Commission (Terms and Conditions for determination of tariff according to Multi-Year Tariff principles and Methodology and Procedure for determination of Expected revenue from Tariff and Charges) Regulations, 2015 (hereinafter referred to as MYT Regulations, 2015) on September 9, 2015. Based on the above Regulations, the Commission issued detail MYT Order dated April 30, 2016 for CSPGCL, CSPTCL, CSLDC and CSPDCL for the Control Period from FY 2016-17 to FY 2020-21.

3. A petition for approval of provisional tariff for 2x500 MW Marwa TPP was filed by the CSPGCL. The petition was registered as petition no 17/2016(T) and the same was disposed of by the Commission in MYT Order dated April 30, 2016.

4. This Order is passed in respect of the Petition filed by Chhattisgarh State Power Generation Company Ltd. (CSPGCL) for approval of Capital cost for MTPP, True up of ARR for FY 2015-16, Provisional True up of FY 2016-17, and Tariff determination for FY 2018-19 to FY 2020-21 for 2 x 500 MW Marwa Thermal Power Project.

5. This Order is passed under the provisions of Section 62 read with Section 86(1) of the Act. This Order is passed by the Commission, after having considered all the information and documents filed along with the said Petition, the information submitted to the Commission after Technical Validation, and after having heard the applicant, the consumers, their representatives and other stakeholders in the Public Hearing held by the Commission.

6. The Petition was made available on the website of the Commission as well as the Petitioner. The Petition was also available at the offices of the Petitioner. A public notice along with the gist of the Petition was also published in the newspapers. Suggestions/objections were invited as per the procedure laid down in the Regulations. Further, the Commission conducted hearing at Raipur on the Petition on June 5, 2018.

7. The Commission has approved the project cost of Rs. 8,892.50 Crore for Marwa TPP, after due prudence check. The justification has been set out in detailed Order. The

Commission has approved Capital cost of Rs. 8,019.25 Crore as on COD of the project i.e. July 31, 2016.

8. The Commission has undertaken the true up for FY 2015-16 for Marwa TPP, in accordance with the provisions of the CSERC MYT Regulations, 2012 and based on the audited Accounts submitted by CSPGCL.

9. The Commission in Tariff Order for FY 2018-19 dated March 26, 2018 has undertaken provisional True-up for existing Stations of CSPGCL, except MTPP. The revenue gap/(surplus) arising out of such provisional True-up has been passed through and accordingly approved the Retail supply tariff for FY 2018-19. As per the Act, retail tariff is not supposed to be altered during the year. CSPGCL is supposed to file the final true up for FY 2016-17 based on the audited accounts in November 2018. As such, the Commission is not inclined to undertake the provisional true up for FY 2016-17 for MTPP and CSPGCL is directed to file the final true up in accordance to the timeline specified in CSERC MYT Regulations, 2015 and the orders of the Commission.

10. As regards the FY 2017-18, the Commission directs CSPGCL to file True-up for FY 2017-18 for Marwa TPP in accordance with provisions of CSERC MYT Regulations, 2015 along with other Existing Stations.

11. The provisions of the CSERC MYT Regulations, 2015 have been considered for determination of ARR and Tariff for FY 2018-19 to FY 2020-21 for Marwa TPP. The generation tariff approved by the Commission for Marwa TPP for FY 2018-19 to FY 2020-21 is shown in the following Table:

Particulars	**FY 2018-19**	**FY 2019-20**	**FY 2020-21**
Annual Fixed Charges (Rs. Crore)	1,602.77	1,595.71	1,555.36
Contribution to Pension Fund (Rs. Crore)	20.86	22.75	24.81
Energy Charges (Rs./kWh)	1.393	1.393	1.393

12. The Commission directs CSPGCL to bill beneficiary of Marwa TPP as per Generation Tariff approved in this Order. The Order will be applicable from 1st July, 2018 and will remain in force till March 31, 2021 or till the issue of next Tariff Order, whichever is later.

Sd/-
(ARUN KUMAR SHARMA)
MEMBER

Sd/-
(NARAYAN SINGH)
CHAIRMAN

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1 BACKGROUND AND BRIEF HISTORY

1.1 Background

The Chhattisgarh State Electricity Board (CSEB) was restructured by the State Government in pursuance of the provisions of Part XIII of the Electricity Act, 2003. The assets and liabilities of the erstwhile CSEB have been allocated to the successor Companies w.e.f. January 1, 2009 according to the provisions of the CSEB Transfer Scheme Rules, 2010.

Chhattisgarh State Power Generation Company Limited (hereinafter referred as "CSPGCL" or "the Petitioner") is a generation company as notified by the Government of Chhattisgarh (GoCG) under the CSEB Transfer Scheme Rules, 2010.

1.2 The Electricity Act, 2003, Tariff Policy and Regulations

Section 61 of the Electricity Act, 2003 (herein after referred as the EA, 2003 or the Act) stipulates the guiding principles for determination of tariff by the Commission. This Section also stipulates that the Commission while framing the Tariff Regulations shall be guided by the principles and methodologies specified by the Central Electricity Regulatory Commission for determination of the tariff applicable to generating companies and transmission licensees. Section 62 of the EA, 2003 stipulates that the Commission shall determine the tariff for:

- Supply of electricity by a Generating Company to a Distribution Licensee;
- Transmission of electricity;
- Wheeling of electricity; and
- Retail sale of electricity.

The Tariff Policy notified by the Government of India in January 2006, as well as the amended Tariff Policy notified in January 2016, provides the framework to balance the conflicting objectives of attracting investments to ensure availability of quality power and protecting the interest of consumers by ensuring that the electricity tariffs are affordable.

1.3 Present Petition

The Commission had notified Chhattisgarh State Electricity Regulatory Commission (Terms and Conditions for determination of tariff according to Multi-Year Tariff principles and Methodology and Procedure for determination of Expected revenue from Tariff and Charges) Regulations, 2012 (hereinafter referred to as CSERC MYT Regulations, 2012).

Further, the Commission notified the Chhattisgarh State Electricity Regulatory Commission (Terms and Conditions for determination of tariff according to Multi-Year Tariff principles and Methodology and Procedure for determination of Expected revenue from Tariff and Charges) Regulations, 2015 (hereinafter referred to as MYT Regulations, 2015) on September 9, 2015. Based on the above Regulations, the Commission issued the MYT Order dated March 30, 2016 for CSPGCL, CSPTCL, CSLDC and CSPDCL for the Control Period from FY 2016-17 to FY 2020-21.

A petition for approval of provisional tariff for 2x500 MW Marwa TPP was filed by the CSPGCL. The petition was registered as petition no 17/2016(T) and the same was disposed of by the Commission in MYT Order dated April 30, 2016.

In the said MYT Order the Commission decided that *"The provisional tariff has been considered as Rs. 3.90 per kWh (comprising of energy charge of Rs.1.20 per kWh for the purpose of computing FCA charges). However, the final tariff will be based on the capital cost approved by the Commission after due regulatory process. Further, the above tariff of Rs. 3.90 per kWh does not include charges such as Water Charges, Pension & Gratuity Contribution, FCA, Start up power charges, SLDC Charges, taxes and duties if any and other incidental charges, which shall be billed separately as pass through component."*

Further, the Commission while approving the provisional tariff decided that the final tariff will be based on Capital cost approved by the Commission after due regulatory process.

Further, the Commission vide letter No. 369 dated February 28, 2017 advised to submit the Petition for approval of tariff of Marwa TPP with audited figures of expenses and other relevant data.

In the Tariff Order for FY 2017-18 dated March 31, 2017, the Commission amended provisionally approved single part tariff into two-part tariff to allow two part billing with DSM applicability.

Further, the provisional true up of ARR of pre-existing plants for FY 2016-17 has been filed by the CSPGCL as petition no. 69 of 2017(T). In the said Petition, CSPGCL submitted as under:

> *"During the year (FY 16-17), Marwa TPP achieved COD. During previous filing, Hon'ble Commission has directed for filing of petition with 'audited' expenses. It may please be appreciated that from FY 16-17, Ind-AS which is*

issued by Ministry of Corporate Affairs (MCA), and is named and numbered in the same way as the corresponding International Financial Reporting Standards (IFRS) has become mandatory. Accordingly, the prevailing accounting practices are being mapped to Ind-AS / IFRS. This is one time exercise and though the state Power Companies have already engaged one of the leading expert consultants in the field, but looking to the width and depth involved, the exercise may take some time. Accordingly, CSPGCL crave leave for submission of petition for determination of final tariff and the associated true up for Marwa TPP separately."

Further, the Commission vide letter No. 31 dated January 5, 2018 desired that the Petition for MTPP may be filed based on the available record.

Accordingly, present Petition has been prepared and filed before the Commission in accordance with Section 62 of the Electricity Act 2003 and provisions of the regulations. The present Petition includes the approval of Capital cost for MTPP, True up of ARR for FY 2015-16, Provisional True up of FY 2016-17, and Tariff determination for FY 2018-19 to FY 2020-21 for 2 x 500 MW Marwa Thermal Power Project.

1.4 Admission of the Petition and Hearing Process

The Petition filed by CSPGCL was registered on April 12, 2018 (Petition No. 31/2018).

CSPGCL was directed to publish the abridged version of the Petition in Hindi and English newspapers for inviting comments / objections / suggestions from all the stakeholders. The Petition was made available on the website of the Commission as well as on the Petitioners' website.

As required under Clause 21 of the CSERC (Details to be furnished by licensee etc.) Regulations, 2004, notice inviting suggestions /comments/objections from the stakeholders on the above proposal was published in the leading newspapers namely, Dainik Bhaskar, The Hitavada and Patrika, on April 21, 2018.

A period of twenty-one (21) days was given for submission of written objections and suggestions by the public. CSPGCL was also directed to submit written replies to the Commission with copies endorsed to the objectors.

In order to have better clarity on the data submitted by the Petitioner and to remove inconsistency in the data, Technical Validation Sessions (TVS) was held on May 24, 2018 with the Petitioner. During the TVS, additional information required for processing of the Petition was sought from the Petitioner. The Petitioner submitted the additional information sought in the TVS. Notice under Section 94(2) of the Act was published in the following newspapers of the State for hearings:

Newspaper Name	Date of Notice Published
Dainik Bhaskar	May 16, 2018
Patrika	May 16, 2018

The objections and suggestions from stakeholders were received on the Petition filed by CSPGCL. The list of persons who filed the written submissions is annexed as **Annexure 1**.

The hearing was held on June 5, 2018 in the Commission's office at Raipur. The Commission has ensured that the due process as contemplated under the law to ensure transparency and public participation was followed at every stage and adequate opportunity was given to all the persons to offer their views. The list of persons who submitted their comments during the Hearing is annexed as **Annexure 2**.

The issues raised by the stakeholders along with the response of the Petitioner and views of the Commission are elaborated in Chapter 2 of this Order.

2 HEARING PROCESS, INCLUDING THE COMMENTS MADE BY VARIOUS STAKEHOLDERS, THE PETITIONERS' RESPONSES AND VIEWS OF THE COMMISSION

2.1 Objections on Capital Cost of Marwa TPP

2.1.1 Issue of Authenticity of data

Some of the objectors submitted that the petition is not accompanied with the audited balance sheet and certification from Chartered Accountant. Lack of detail breakup of cost and lack of evidences to substantial claims was also alleged. As such the petition may not be considered.

Petitioner's Reply

CSPGCL submitted that audited accounts for FY 2015-16 and provisional accounts for FY 2016-17 are the same, based on which True up for other plants have been carried out earlier. Copies of the same have been re-submitted. Lack of breakup of costs has been denied.

Commission's View

The petition data have been verified from the audited accounts for FY 15-16 and provisional accounts for FY 16-17. For capital cost capitalized up to COD, CA certificate submitted by the petitioner has been considered.

2.1.2 Issue of variance from approved business plan

The objectors quoted variance from the business plan order dated 01.06.2010 and pleaded that as the cost has highly escalated and the directions given in the Business Plan order has not been complied, hence, the prayer for approval of revised capital cost may not be allowed. It was specifically objected that the interest rate on the loan has been shown very high in comparison to the Business Plan order and the interest rate enjoyed by Mauda project of NTPC.

Petitioner's Reply

CSPGCL has submitted that all efforts to comply the directives of the Commission have been made. However, there were reasons which were beyond control. Such uncontrollable reasons have been submitted in the petition. It is reiterated that no delay occurred due to paucity of the funds. On the interest rate it was submitted that loan for the Marwa TPP was tied up with M/s PFC in 2008 and at that time prevailing coupon rate was 11%. However as per the standard policy of PFC and the terms of the loan, the rate of interest varies from time to time. It is not that the whole computation has been made at 13%, rather interest has been charged by PFC, in accordance to well settled mechanism and only the actual Interest charged during construction has been claimed as IDC.

Commission's View

The issues related to Business plan order have been dealt in the relevant paras of the order. Further for IDC, as detailed in the relevant para, the Commission obtained quarterly sheets of PFC which include detail of each of the loan drawl and interest. Rebate has also been accounted.

2.1.3 Issue of time overrun and cost overrun of plant

Some of the objectors stated that the time overrun and cost overrun is on account of negligence, corruption, arbitrariness & irregularities, therefore, the petition should be rejected and the cost should be recovered from responsible persons. The objectors also took exceptions to the reasons of delay pleaded by the petitioner and demanded for non- consideration of all such reasons. One of the objectors also expressed that for delay in construction of barrage, the responsibility rest on State Government then why people of Chhattisgarh should bear such cost. It was also alleged that the high cost of project is wastage of national resources and money and will prove to be a liability on the stakeholders.

Petitioner's Reply

The allegations of negligence, corruption, arbitrariness & irregularities have been denied. The petitioner requested for consideration of the reasons in the proper context. It was again prayed that as the reasons for time / cost overrun are uncontrollable, those may be allowed as pass through.

Commission's View

The specific issues have been dealt in the relevant paras of the order. For the purpose of analysis of reasons of delay, the Commission has placed reliance on judgment by Hon'ble APTEL in Appeal No. 72 of 2010. Each of the reason have been put to test on the principles made by the Hon'ble APTEL.

2.2 Objections on True--up for FY 2015-16, Provisional True-up for FY 2016-17 and determination of Tariff for FY 2018-19 to FY 2020-21

2.2.1 Issue of Provisional and mismatched data

One of the objectors submitted that the Petition for True-up for FY 2015-16 and provisional True-up for FY 2016-17 is not supported with Statutory Auditor Report and detailed certified capital investment. The revenue gaps claimed by CPSGCL is not supported by verified and authenticated data and provisional balance sheet. Further, Objector stated that discrepancies are observed in figures of Gross Fixed assets and Interest rate.

Petitioner's Reply

CSPGCL submitted that copy of audited accounts for FY 2015-16 and provisional accounts for FY 2016-17 have been submitted to the Commission vide additional submission dated June 11, 2018. The accounts are the same based on which True-up for other plants have been carried out earlier by the Commission.

Regarding the discrepancies of Gross Fixed assets and Interest rate, CPSGCL submitted that the value of GFA indicated in Form 1A and 9 pertains to regulatory accounts, while Form 11 reflects accounting value. After receipt of provisional accounts, it was identified that due to migration of accounting software, correction entry in GFA is required. Accordingly, reversal of Rs. 160.08 Crore has been considered and the same is difference between the GFA in Form 1A , 9 and Form 11. Further, loan for MTPP was tied up with M/s PFC in 2008. At that time, prevailing coupon rate was 11%. However, as per standard policy of PFC and terms of loan, the rate of interest varies from time to time. It is not that whole computation is made at 13%, rather interest has been changed by PFC.

Commission's View

The Commission has undertaken the True-up for FY 2015-16 based on the audited accounts for FY 2015-16 and other relevant documents submitted by the CSPGCL as a part of additional submission.

As regards the Gross Fixed Assets and Interest considered for True-up purpose, the rulings of the Commission are stipulated in the respective chapter.

2.2.2 Issue related to Provisional true-up for FY 2016-17

One of the objectors submitted that the actual PAF of 33.24% of MTPP during FY 2016-17 as against normative PAF of 85% reflects poor performance of the plant. Further, he added that data submitted by CSPGCL regarding Net Generation, FCA, Quantity and rate of coal, etc., in the present Petition is not matching with data submitted in FCA. Further, he also submitted that CSPGCL has claimed Fixed costs against Unit 1 which had remained closed for most of the time during FY 2016-17.

Further, Objector submitted that sharing of gain on account of loan re-financing shall not be allowed since initial rate of interest reported as per Order dated June 1, 2010 is only 11%.

Petitioner's Reply

CSPGCL submitted that it has submitted the unit wise outage details for MTPP vide their additional submission dated June 11, 2018. Further, CSPGCL added that monthly billing and FCA is issued on scheduled energy, while net injected energy gets reflected in DSM bills. As per settled methodology, fuel cost is allowed on actual net injection, not on basis of scheduled energy. There is no mismatch in data submitted in the present Petition and FCA. Further, FCA is issued as per time schedule given by the Commission. As MTPP is new plant and coal is being supplied by Coal India from different mines. Some of the coal bills were generated late by SECL, hence it could not be accounted for in FCA.

As regards regard the sharing of gain on re-financing, CSPGCL submitted that it has considered the same as per Regulations and the principle has also been settled in previous Order.

Commission's View

In the present Order, the Commission has not undertaken provisional true-up for FY 2016-17 on provisional accounts. The same will be undertaken based on audited accounts, along with existing stations.

2.2.3 Issue related to ARR and Tariff

Some of the objectors stated that the high cost of power from project is resulting in inflated tariff making it unaffordable for beneficiaries. One of the objector also objected against CSPGCL prayer for allowing target PAF at lower level. Similarly, one of the objectors pleaded for allowing depreciation at rates lower than the notified rates.

Petitioner's Reply

The apprehension related to very high cost of power has been denied. Reasons for relaxation in PAF target have been submitted in the petition, while the documentary evidences have been submitted in additional submissions. The suggestions for lower depreciation have been opposed as contravention to the regulations and provisions.

Commission's View

The ARR has been computed in accordance to the provisions of the regulations. Specific issues have been dealt in the relevant paras of the order.

3 CAPITAL COST OF MARWA TPP

3.1 Brief History of project:

The erstwhile Chhattisgarh State Electricity Board (CSEB) in the year 2008 decided for erection of a 2x500 MW green field project at Marwa Tendubhatta, Distt Janjgir Champa, Chhattisgarh. Consequent to reorganization of CSEB by the Govt. of Chhattisgarh, CSPGCL took over the generation function of the Board w.e.f January 1, 2009.

An MOU was signed on October 15, 2009 between CSPGCL and Chhattisgarh State Power Distribution Company limited (CSPDCL) for sell of 100% power to be generated from this plant, on the rates to be determined by this Commission. Subsequently PPA was signed between CSPDCL & CSPGCL which after due regulatory process was approved by Commission vide Order dated February 27, 2016 on Petition no. 32 of 2012.

In the year 2010, CSPGCL filed its first Business Plan before the Commission. The petition was registered as petition number 08 of 2010 (M). Commission passed its Order on June 1, 2010 wherein the capital cost of the project was approved as Rs. 6317.70. Crore. In the order, certain suggestions were also given to CSPGCL.

Subsequently, Petition was filed by CSPGCL in 2016 for approval of the provisional tariff for Marwa TPP. In the common Order dated April 30, 2016, the Commission allowed the provisional tariff for Marwa TPP based on the data submitted by CSPGCL in the aforesaid petition. With such determination, the petition was disposed of. In the said petition, the capital cost was proposed as Rs. 8692 Crore.

3.2 Facts of the Petition as submitted by CSPGCL:

CSPGCL submitted revised capital cost of Rs. 8999 Crore in the present petition. However, closure review of the proposed cost reveals that the proposed cost is the net cost after applying addition & deductions. Accordingly, it is noticed that the total cost proposed (excluding initial spares) is Rs. 9158.11 Crore. The Capital cost of the project submitted by CSPGCL is shown in the following Table:

Table 1 Capital Cost for Marwa TPP as submitted by CSPGCL (Rs. Crore)

Sl. No.	Particulars	Petition
1	**Preliminary & Enabling expenses**	12.54
2	Land	125.00
3	**BTG Cost (Excl. PV)**	
3.1	*BTG Supplies*	*1,845.00*
3.2	*ETC*	*254.00*

Sl. No.	Particulars	Petition
3.3	*Freight & Insurance*	*58.00*
4	**BOP Cost(Excl. PV)**	
4.1	*BOP Supply*	*943.87*
4.2	*ETC*	*30.13*
5	**Civil works**	
5.1	*BTG Civil*	*206.17*
5.2	*Chimney*	*30.87*
5.3	*Cement*	*24.95*
5.4	*Steel*	*195.39*
5.5	*BOP Civil*	*688.02*
5.6	*Colony*	*95.64*
6	**Price Variation**	
6.1	*PV on BTG Supplies*	*101.48*
6.2	*PV on ETC of BTG*	*97.00*
6.3	*PV on BOP Supplies*	*113.26*
6.4	*PV on ETC of BOP*	*3.62*
7	**Taxes, Duties & Electricity charges**	545.21
8	**Essential Infrastructure**	270.00
9	**Consultancy & Engineering**	8.00
10	**Fuel for Trial run upto COD**	87.46
11	**IDC**	3,152.43
12	**Overheads & Miscellaneous Expenses**	270.08
13	**Total (A)**	**9,158.11**
14	LD on BTG Contract@4% of 2157	86.28
15	LD on BOP Contract @9% of 1633	146.97
	Total LD Anticipated (B)	**233.25**
16	**Net Cost (C)=(A)-(B)**	**8,924.86**
17	**Plant & Machinery cost**	**4,970.77**
18	Spares (1.5% of Plant and Machinery) **(D)**	74.56
19	**Total Cost with spares (C)+(D)**	**8,999.43**

3.3 Capital Cost Component wise Analysis:

3.3.1 Preliminary and Enabling expenses

In the Business plan only, the preliminary expenses of Rs 1 Cr were considered. However, in the present Petition, preliminary and enabling expenses have been indicated as Rs. 12.54 Crore The Commission has given a careful thought on the issue. The terms such as preliminary and enabling expenses, contingency provisions, etc. find place at the project planning stage, but on the project completion such terms may not have any place. In the accounts such expenses either become part of the specific assets or get booked under the overheads and miscellaneous expenses. CSPGCL has furnished a CA certificate wherein a substantial booking appears against the overheads; as such the provisioning seems to be a result of past trend but of no relevance at this point. Accordingly, Commission disallows the provision in entirety.

3.3.2 Land and R&R

Land and R&R was originally estimated to be about Rs. 100 Crore, which is now stated as about Rs. 174 Crore (Rs. 125 Crore for land and about Rs. 49 Crore for R&R). Considering the revision in the Govt. policy for land acquisition and increase in the rates, the Commission does not find any infirmity in the revised estimates.

3.3.3 Hard Cost (BTG and BOP)

The prima-facie comparison of the capital cost of the project as considered in the first business plan order dated June 1, 2010 vis-à-vis the present Petition reveals that there is substantial difference in the IDC. Keeping aside IDC component, the capital cost considered in the business plan was Rs. 5277 Crore, while CSPGCL proposes the same as Rs. 5847 Crore. As the breakup of the project cost was not given in the Order, for the purpose of component wise comparison, the Commission has relied on the additional submission dated May 21, 2010 which was submitted during the business plan proceedings. Vide the said additional submission; CSPGCL had submitted a detailed break-up of capital cost of Rs. 6318 Crore.

It is noted that the BTG supply was quoted as Rs. 1942 Crore which included mandatory spares of about Rs. 97 Crore. Thus, the BTG supplies amounted to Rs. 1845 Crore, which is the same as it appears in the current petition. Similarly, the total cost of Erection, Testing & Commissioning of the BTG with the freight and insurance was about Rs. 315 Crore, this in the present petition is Rs. 312 Crore. From the order copies submitted by the petitioner the difference appears to be on account of freight and insurance considered on the mandatory spares. The BOP supplies at about Rs. 944 Crore also appears to be of the same value. The BOP civil including ETC was earlier indicated as about Rs. 692 Crore, which is now stated to be about Rs. 723 Crore (including the price variation). The BTG civil earlier estimated as Rs. 172 Crore has now been projected as about Rs. 206 Crore (including Price Variation). The cost of cement and steel earlier estimated to be about Rs. 184 Crore has been revised to about Rs. 220 Crore However, during TVS, CSPGCL explained that the revised cost includes the cost of steel and cement for the chimney works, which was earlier part of cost of chimney. The cost of chimney was earlier estimated as about Rs. 53 Crore has now got reduced to about Rs. 31 Crore

No price variation was included in the business plan estimates, however, the order copies submitted at that time had the Price Variation clauses. CSPGCL submitted that the Price Variation provisions are in accordance to the standard industrial practice. The revised estimates include Price Variation of about Rs. 101 Crore on BTG supplies, about Rs. 97 Crore on ETC of BTG, about Rs. 113 Crore on BOP supplies and about Rs. 4 Crore on ETC of BOP. The Price Variation indicated seems to be in accordance to the orders / contract and during TVS the petitioner confirmed that no Price Variation has been paid beyond the originally stated contract period. As such the above cost seems to be in order.

However, the Commission feels that though the aforesaid comparison gives only an insight into the cost escalation from the initial statements to the final values. However, it still cannot be considered as the final test of prudence check. To be fair, such cost needs to be tested on the independent benchmarks. The Central Commission has specified such benchmark vide its order dated 04.06.2012 in L-1/103/CERC/2012 for the purpose of test of the appropriateness of hard cost, the Commission has applied the yardstick in accordance with the said order on the capital cost of this project. The inclusions and exclusions have been considered in line with the order and the associated model prescribed by the Central Commission. The computation relied is given in the table below:-

Table 2 Comparison of Hard Cost (Rs. Crore)

Marwa Hard Cost Components	Amount (Rs. Crore)
BTG Cost (Including Price Variation)	2355.48
BOP Cost (Including Price Variation)	1090.88
Civil works	1145.40
Initial Spares	0.00
Overheads & Miscellaneous	212.88
Consultancy & Engineering	8.00
Total Hard Cost	4812.64
Plant Capacity	1000
Hard Cost (on completion) per MW	**4.81**
CERC Benchmark hard Cost Rs Cr / MW (as on December 2011 as per Order dated June 4, 2012)	4.71
Reference Month for Benchmark Cost	Dec-11
Original SCOD for the Project	28-Feb-13

Marwa Hard Cost Components	Amount (Rs. Crore)
WPI for the Month of Dec-11	157.3
WPI for the Month of Feb-13	170.9
%Change in WPI	8.65%
CERC Adjusted Benchmark Hard Cost- Rs Cr/MW	**5.12**

NOTE:

(1) Total Hard cost with December 2011 as base for indices includes Boiler, TG, Associated auxiliaries, Transformers, Switchgears, cables, cable facilities, grounding & Lighting packages, C&I, Initial Spares for BTG, Balance of Plant, Mechanical miscellaneous package, switchyard, Chimney, Emergency DG Set.

(2) As per CERC order / model / explanatory memorandum, Hard Cost does not include Financing, cost, IDC, Taxes & Duties, land Cost, R&R cost, colony & township, MGR, railway Siding, Transmission line, fuel cost etc

(3) WPI data taken from the website of Office of the Economic Advisor, Ministry of Commerce & Industry, Government of India

(4) Overhead cost as per detail computation in the subsequent para

From the above table, it is apparent that the hard cost is within the benchmark cost prescribed by the Central Commission. Accordingly, the Commission affirms the hard cost of the project. From another angle, it is noted that the BOP was awarded through ICB route and BTG work was awarded through negotiation which itself was based on Mauda ICB. The CERC order also acknowledges that the model is not intended to replace the price discovery based on International Competitive Bidding (ICB) tendering process. From this aspect too, the costs do not seem to suffer from infirmity.

3.3.4 Civil Works

The colony and other civil works earlier estimated to be of about Rs. 105 Crore have been trued to about Rs. 96 Crore The consultancy charges have also come down from Rs. 14 Crore to Rs. 8 Crore As such, the Commission approves revised estimates on the above heads.

3.3.5 Essential Infrastructure

A substantial increase appears on rail infrastructure. In the 2010 estimates, the same was about Rs. 153 Crore (excluding contingencies) which is now indicated as about

Rs. 270 Crore. CSPGCL was asked to explain the same. The petitioner submitted details in this regard. It has been submitted that the whole work (including preparation of DPR and project management consultancy) related to rail infrastructure for transportation of coal from Naila station to Marwa plant was assigned to RITES Ltd., which is a Govt. of India enterprise under aegis of Ministry of Railways. The initial estimates were based on the draft DPR prepared by RITES. In the final DPR, with approved Engineering Scale Plans, submitted in Nov. 2010, the estimate was revised to about Rs. 161 Crore Subsequently, there had been increase on many counts which have been head wise listed by CSPGCL. The major increase in cost appears on account of Signal & Telecom works (increase of about Rs. 16 Crore) P-Way works at Naila Station (increase of about Rs. 44 Crore), Telecom & construction work at Naila yard (increase of about Rs. 3 Crore), variation of quantities due to additional 13 numbers of bridges as per requirement of railway and WRD (increase of about Rs. 19 Crore) and PV on estimate cost of OHE, S&T and civil and P-way works (increase of about Rs. 16 Crore). CSPGCL submitted that the Railway has monopoly. For running the power station, transportation of coal is a must and as the increased cost has been insisted by Railways on account of change in their rules & norms, CSPGCL has no option but to bear the same. The Commission agrees with the contention that such increase in cost is uncontrollable for any generator and deserves to be considered. However, from the documents submitted by petitioner, it is noted that CSPGCL on its part has made a representation against the demand note raised by Railways for railway siding taking off from Naila railway yard. At present, against the demand of about Rs. 44 Crore payment of about Rs. 5 Crore only have been made. The efforts to contain the increase in cost are appreciated. But at the same time, as the payment obligation has yet to be settled, commission does not find it fit to load the same on the consumers. Accordingly, for the purpose of this order, the cost of rail infrastructure is being taken as about Rs. 231 Crore (Rs. 270 Crore as per revised estimate (-) about Rs. 39 Crore retained against the P-way works estimate). However, it does not imply a denial of the actual cost of rail infrastructure.

The leave is granted to CSPGCL to claim the additional expenses on P-way works, if it is required to be paid to the railways. As the additional payment on the above count would be made to Indian Railways / its agencies and Indian Railways is a Government instrumentality, leave is also granted for such payment beyond the cut-off date for the project.

3.3.6 Pre-commissioning charges

Next comes the pre-commissioning charges which is the cost of fuel from auxiliary trials to COD minus the revenue received from sale of infirm power. In the initial estimate, it was indicated as about Rs. 29 Crore, however, in the revised estimate it has increased to about Rs. 87.46 Crore Though there is increase from the initial estimate, however, this does not seem to be irrational or excessive. It is noted that in the order dated September 22, 2015 on the P. No. 08 of 2015 for 1 x 500 MW Korba West TPP, the Commission has allowed such charges as Rs. 68.63 Crore Further, the Central Commission in the order dated September 21, 2015 on the P. No. 69/GT/2013 has allowed start-up fuel cost as Rs. 143.33 Crore for Mauda STPS stage-1 (2x500 MW). Further, it is also noted that the CEA has advised SECL to supply 2 lakh tons of coal for start-up trial run, COD, etc. for each of the unit. The actual coal consumption is stated to be lower than the same; hence, on this count too, the fuel cost up to COD appears acceptable. Nevertheless, while going through the cost data, the Commission noted that the details of the capitalization on COD submitted by CSPGCL with certification from an independent Chartered Accountant shows the cost of fuel as Rs. 111.44 Crore and the revenue from sale of power as Rs. 29.53 Crore Accordingly, the net expense capitalized in the accounts is 81.91 Crore, whereas in the petition it is stated to be Rs. 87.46 Crore. The note-4 of the CA certificate states that coal freight charges are included in overheads. It is possible that the difference in the petition and the certified value might be due to the same. However, in absence of any certified value for such freight charges, the Commission would prefer to stick to the value provided by CSPGCL with CA certification.

3.3.7 Taxes & Duties and Electricity Charges

The taxes and duties in the initial estimate were considered as Rs. 456 Crore As explained in TVS, some other tax component was included in the respective packages too. Further it was clarified that as at the time of project formulation, CSEB was integrated entity no expense on account of start-up power was considered. The revised estimate of taxes and duties has been given as Rs. 379 Crore. and the start-up power is of Rs.166 Crore. On the tax front, it is noted that the taxes have come down due to reduction in excise duty but the service tax and building cess have added to the liability. The Commission has also examined the issue related to mega power status of the project. CSPGCL was asked to submit the efforts made in this regard. CSPGCL has submitted, copies of various correspondences including the copy of applications submitted to Ministry of Power, Govt. of India along with the consent issued by the Energy Department, Govt. of Chhattisgarh. The documents provided indicate that required confirmation were made by CSPGCL and it also approached GoCG for the confirmation / commitments from Govt. of Chhattisgarh. State Government too acceded to the request, yet the status was not accorded. The Commission has not come across, any document showing any deficiency on the part of applicant / Govt. of

Chhattisgarh. As such, from a perusal of the documents, CSPGCL does not seem to be at fault. The only document related to denial of the mega power status is the letter dated December 23, 2013 by the Ministry of Power, Govt. of India, which states

> *"-------------that 'Mega Power Policy' has been withdrawn by the Govt. of India with effect from 19.07.2012. The Govt. of India has decided to levy uniform custom duty. CVD and SAD on all imported power equipment including mega projects w.e.f. 19.07.2012. Therefore. Your request for grant of mega power status to the said Marwa power project cannot be acceded to,"*

In view of the above, Commission does not find it prudent and rational to penalize CSPGCL for the fault for which, on the face of record, cannot be attributed to it.

On overall basis, the taxes are lower than the initial estimate and allowed on actual. Regarding the start-up power, this issue has come up post re-organization. The start-up power tariff is above the ABR and subsidizes the retail tariff of other categories. As such, the cost of start-up power paid to CSPDCL is allowed on actual.

3.3.8 Overheads and Miscellaneous expenses

The Overhead cost as per table -1 of the petition is Rs. 270 Crore, the CA certificate indicates the overhead cost as Rs. 267.56 Crore. As per petition the overhead includes the cost of R&R of Rs 49.06 Cr. As CA certificate is of a later date, the cost given in the certificate prevails. However, from the Regulatory perspective R&R and Overhead are two different heads, accordingly the two need a segregation. Accordingly, the segregation is done and the overhead cost (net of R&R) is segregated between the two units in the same ratio, as has been relied in the CA certificate.

Table 3 Overhaed Expenses for MTPP (Rs. Crore)

Particulars	Unit-1	Unit-2	Total
Overhead Expenses as Per CA Certificate	135.79	131.77	267.56
Less: R&R Expenses included in the Overhead Expenses	-	-	49.06
Net Overhead Expenses	110.89	107.61	218.50

However, this does not mean that the above overhead expenses have been approved by the Commission.

The treatment of the cost of overhead and IDC has been dealt subsequent to the analysis of the reasons of delay as purported by CSPGCL.

3.3.9 Interest During Construction (IDC)

With the above, the discussion on capital cost comes to the most crucial aspect i.e. IDC. Number of issues have been raised and deliberated. The first issue relates to the interest rate. Objections were raised that though initially the rate of interest was 11%, but in the petition it has been indicated as 13%. The petitioner in its clarification stated that Loan for the Marwa TPP was tied up with M/s PFC in 2008 and at that time prevailing coupon rate was 11%. However as per the standard policy of PFC and the terms of the loan, the rate of interest varies from time to time. It is not that the whole computation has been made at 13%, rather interest has been charged by PFC, in accordance to well settled mechanism and only the actual Interest charged during construction has been claimed as IDC. The Commission asked CSPGCL to submit details of IDC. In response, CSPGCL submitted detail quarterly statements issued by PFC from the first loan drawl upto 15th October 2016 i.e. the quarter in which the second unit achieved COD. These quarterly statements include opening and closing details, interest applicable for the quarter, taxes / cess as may be applicable, details of each drawl, interest rate prevailing on that particular day, resetting, etc. As theses statement do not include rebate, CSPGCL also submitted a separate statement again issued by PFC which shows quarterly rebate obtained on interest. CSPGCL clarified that the IDC claimed is net of rebate. The Commission has gone through the loan agreement. It is clear that the interest applicable on the loan drawl shall prevail with three year reset clause. The interest rate has been found to vary from time to time. A review of the benchmark prime lending rate on SBI corporate website also reveals time to time movement of interest rates. RBI bank rates also have gone up and down. As such no specific issue against the interest rates prevails.

In light of the objections related to interest rate for the loan drawn for the project, the Commission gave a careful consideration. The IDC computations have been verified from PFC quarterly interest rates. It is noted that interest rate has varied from time to time and the rates charged are in accordance to PFC notified rates. Commission also gave a look to the rates charged by REC which is the other major lender in the sector. It is noted that the REC rates also move in the similar manner. The SBI benchmark rates are also not distant. Regarding comparison to effective interest rate for Mauda project, Commission notes that NTPC had drawn loan from multiple sources including Eurobonds, SBI New-York etc., which has been availed at much lower rates. It is also pertinent to note that NTPC is a Maharatna CPSU, with strong balance sheet and high credit rating, while CSPGCL is a State PSU. The CPSU and that to a Maharatna Company and State PSU stand on different footing. It has to be understood that some of the privileges regarding loan sanctions etc., which are available to NTPC is not available to State PSU. It is a settled legal maxim that unequal's cannot be treated as equals. Therefore both cannot be compared per-se. Further, the charging of interest rates by PFC to NTPC at discounted rates or rates lower than the notified rates cannot be a justified reason to take a stand that the rates charged to Marwa project by PFC were excessive. From the records available from the Mauda project it is observed that due to sourcing of the loan/bond from multiple agencies, some of which are international agency and have provided the loan at low interest rate coupled with high credit rating, resulted in a lower weighted average interest rate. It is true that effective interest rate for Mauda was lower, but in absence of any incriminating evidence and for the reasons mentioned above, that cannot be a ground for holding that the interest rate charged by PFC against the Marwa project suffered from infirmity. It is also noted that the other state PSU projects also had similar rate of interest.

In view of the aforesaid discussion, Commission considers the PFC interest rates as they prevailed from time to time. Applicable rebate has also been accounted for.

Another issue relates to phasing. A review of the loan drawl pattern from PFC statement indicate that the loan drawl was staggered over the period and it was not the case where entire loan was drawn much earlier than the project completion.

The second issue relates to time span. Objectors insisted that the high IDC is on account of delay in the project, for which all liabilities should rest on the generator itself and consumers should not be burdened, while CSPGCL submitted that the reasons for delay were totally uncontrollable and hence should be allowed in full as pass through.

The Commission has given a conscious thought on the issue. The business plan order envisaged commissioning of the Marwa plant in Nov. 2012. However, the word commissioning does not appear in the regulations. The issue of inter relationship between the terms - synchronization, commissioning and COD have been earlier dealt in detail in the Commission's Order dated September 22, 2015 on the P. No. 08 of 2015 related to 1x500 MW KWTPP. However, in the instant case, in view of the fact and circumstances that issue is not applicable. The important aspect is determination of Scheduled Commercial Operation Date for the project and whether in the light of facts and circumstances of the case, such date deserves a revision? CERC in its regulations has considered the timeline for completion of projects (regulation 24 read with appendix -1). For Greenfield projects of 500 MW units, the timeline for first unit is considered as 44 months and for the subsequent units at an interval of 6 months each. Accordingly, the Commission feels that under ideal conditions, unit-1 & unit- 2 would have been expected to achieve COD by the 31st August. 2012 and 28th

February, 2013. CSPGCL in its submission has contended that this timeline is only for incentive of 0.5% in RoE and is not a benchmark for fixing of penalties. Per contra, the objectors have pleaded for consideration of this timeline as sacrosanct and denial of all the IDC beyond such timeline. Delving the rival contentions, the Commission relies on the well settled principle and procedure that reasons for delay in a project need to be analyzed in detail and the treatment of the additional costs have to be made in accordance to the conclusion so arrived. In this regard, Hon'ble APTEL Judgment in Appeal No. 72 of 2010 acts as the light house. Showing the path it states:

"7.4. The delay in execution of a generating project could occur due to following reasons:

i) due to factors entirely attributable to the generating company, e.g., imprudence in selecting the contractors/suppliers and in executing contractual agreements including terms and conditions of the contracts, delay in award of contracts, delay in providing inputs like making land available to the contractors, delay in payments to contractors/suppliers as per the terms of contract, mismanagement of finances, slackness in project management like improper co-ordination between the various contractors, etc.

ii) due to factors beyond the control of the generating company e.g. delay caused due to force majeure like natural calamity or any other reasons which clearly establish, beyond any doubt, that there has been no imprudence on the part of the generating company in executing the project.

iii) situation not covered by (i) & (ii) above.

In our opinion in the first case the entire cost due to time over run has to be borne by the generating company. However, the Liquidated Damages (LDs) and insurance proceeds on account of delay, if any, received by the generating company could be retained by the generating company. In the second case the generating company could be given benefit of the additional cost incurred due to time over- run. However, the consumers should get full benefit of the LDs recovered from the contractors/suppliers of the generating company and the insurance proceeds, if any, to reduce the capital cost. In the third case the additional cost due to time overrun including the LDs and insurance proceeds could be shared between the generating company and the consumer. It would also be prudent to consider the delay with respect to some benchmarks rather than depending on the provisions of the contract between the generating *company and its contractors/suppliers. If the time schedule is taken as per the terms of the contract, this may result in imprudent time schedule not in accordance with good industry practices.*

7.5. In our opinion, the above principles will be in consonance with the provisions of Section 61(d) of the Act, safeguarding the consumers' interest and at the same time, ensuring recovery of cost of electricity in a reasonable manner."

In view of the above, the reasons submitted by CSPGCL have been analyzed in the subsequent sections.

<u>The land and R&R issues</u>

CSPGCL submitted that land had been a sensitive issue and during the project period, number of strikes, Kaam Roko, Rasta Roko, etc. took place which hampered the work. It also submitted that being a policy matter, the issues and resolutions of the demands was not in its hands. It has prayed for allowing the delay due to such strikes. CSPGCL was asked to submit the details of the strikes, Kaam Roko, Rasta Roko, etc. In response, the list of 21 work hamperages due to such reasons has been submitted. The total duration of work stoppages comes out to 214 days. The Commission feels that such conflicts may arise on two counts (a) people's aspiration may be higher than the prevailing policy / rules and (b) the utility might have not fulfilled its obligations in time. It is extremely difficult, bordering on impossibility, to mathematically workout what caused what. Under such situation, the principle narrated by the Hon'ble APTEL comes to the rescue. Accordingly, it is decided that subject to the conclusions reached in the subsequent paras, the cost of delay on this count shall be shared by CSPGCL and the beneficiary in the ratio of 50:50.

<u>Delay in construction of Barrage</u>

In the petition, the CSPGCL has pleaded that though it had got water allocation even before the zero date of the project, however, due to various reasons not attributable to CSPGCL and in spite of repeated pursuance from its end, the barrage from which the water is to be supplied to the plant could not be completed by the WRD for a long time. CSPGCL submitted that the barrage work got finally completed on 25.07.2016 subsequent to which the COD of the plant took place. The petitioner has given a chronological detail of events and correspondences in this regard. The Commission, in order to verify the contentions made, asked for submission of documentary evidences. From perusal of the documents, it is clear that allocation of water was confirmed by the WRD in 2005 itself and as early as on 01.05.2008 WRD decided the conditionality for construction of anicut. It is also noted that the demand notes raised by WRD have been paid within reasonable time. From the documents, it also appears that persuasion was made at all levels, even at one point of time Principal Secretary (Energy), Govt. of Chhattisgarh intervened in the matter. Further, it is also noted that CSPGCL on its part had deposited total advance of Rs. 86.91 Crore. It is a common knowledge that a thermal generating station requires considerable amount of water and cannot operate on commercial basis without having sufficient source of water. It is also acknowledged that a temporary arrangement may be sufficient for commissioning of auxiliaries, trial run, etc. but for commercial operation, it cannot substitute the need and the role of proper and permanent source. Further, like many other resources, which can be arranged by a utility from open market, water is a natural resource which cannot be procured from outside. Water allocation is a subject of public policy in the domain of the State. Further, the public policy has to account for number of things which remain out of the domain of the utility. No utility can construct a dam or a barrage or anicut on a water source as per its own will. As such it has to be acknowledged that once it gets established that the generator has done what it was supposed to do, it cannot be penalized for something which was beyond its control. No person can be penalized beyond a legitimate expectation. It is a settled position that the delay due to act of Government instrumentalities (even the delay in grant of approval by it) is considered as a force majeure event. The legal maxim "*Lex non cogit ad impossibilia",* which means that the law does not compel a man to do that which he cannot possibly perform, cannot be lost sight of. Accordingly, the delay on account of construction of barrage is accepted as uncontrollable and is allowed in accordance with the principle laid down by the Hon'ble APTEL in the referred judgment. As such the period of such delay is required to be suspended or excused and to that extent the Scheduled Commercial Operation Date needs to be to be extended. Hence, commercial operation of the plant has to be after the date of completion of the Barrage.

In the above context, the date of completion of barrage assumes a very high significance. CSPGCL has submitted in its petition that the Kudri Barrage work finally got completed on 25.07.2016. While verifying the documents, it is noticed that the 25.07.2016 is the date of financial completion, the civil works got completed in 01.03.2016. For the purpose of water supply what's important is the completion from civil side and not the financial completion. As such, the completion date is considered as 01.03.2016. The ascertainment of revised SCOD in context of this development has been dealt in the subsequent paras.

Delay due to rail infrastructure

CSPGCL submitted that work of rail infrastructure was entrusted to M/s RITES Ltd. which is a Govt. of India enterprise under the aegis of Indian Railway. However, delay occurred on one hand due to extended scope by Railways in the name of infrastructure requirement and on the other hand due to time consumed in the approval process. The petitioner was asked to submit details regarding the rail infrastructure work. From the documents, it is seen that the DPR work was assigned to RITES in March, 2008 and subsequently the PMC was also assigned to M/s RITES. The approval of DPR itself took a considerable time and finally the DPR was approved by Bilaspur Division on 23.11.2010. The approval of the SECR HQ was pending even on that day. Further, for taking of work on railway line, obtaining land license from the Indian Railway is a must. For transportation of coal, Naila siding work was essential. The final plan was submitted by RITES to Railways on 17.08.2011. However, the license was granted by Indian Railways only on 6th December, 2013. CSPGCL has submitted a copy of minutes of meeting dated 18.08.2011, which affirms that land licensing proposal is processed by the Division, then the same is sent to HQ which forwards it to the Railway Board. The minutes also state that at that point of time Cabinet's decision for land licensing was awaited. Thus, the whole issue of land licensing got stuck in a policy level tangle. The license was granted by Railways on 06.12.2013. Vide another submission it was stated that coal supply through railways started from 16th June, 2015 only. As the power station is designed for coal transportation through rail, it could not have achieved commercial operation in absence of the Railway facility. In other words, units could not have achieved COD before 17.06.2015. As stated in the pre-para, the Railway is a government instrumentality and a generating company cannot be saddled for delay at that end. In this regard, the CERC order dated 21.09.2015 in the P.No. 67/GK/2013 related to Mauda STPS Stage-1 can also be referred. A similar issue came before the Central Commission. The railway siding work was awarded by NTPC to M/s RITES on 10.12.2008, the DPR was submitted to Railway authorities in June, 2009 which was approved on 10.05.2010 and the safety approval was accorded in November, 2011. The railway siding work also got delayed and was completed only on 20.09.2013. Hon'ble Central Commission while deciding the case recorded :-

> *"Considering the fact that the petitioner's role in obtaining the approval for DPR and Safety clearances from Railway authorities is minimal, it would not be proper to conclude that the delay of 3 years in obtaining approvals from Railway authorities is attributable to the petitioner………………. "*

The Central Commission further stated :-

> *"Considering the factors in totality, we are of the considered view that the delay due to non-completion of railway siding as per schedule (6.12.2010) was beyond the control of petitioner and is not attributable to the petitioner……………"*

The Central Commission concluded the discussion with ……

> *"In this background, the delay of 2 years 9 months [from the scheduled date of 6.12.2010 to the actual completion date of 20.9.2013] in the completion of Railway siding work, leading to the delay of 9.5 months in the actual COD of Unit-I and 16 months in case of Unit-II, is for reasons beyond the control of the petitioner and the petitioner cannot be made attributable to the same. Accordingly, the delay of 9.5 months and 16 months in the COD of Unit-I and Unit-II respectively has been condoned. The delay is not attributable to the petitioner and is therefore covered by the principle [(situation (ii)] of the judgment of the Tribunal dated 27.4.2011 and the generating company is given benefit of the additional cost incurred due to time over-run. However, the LD recovered from the contractor and the insurance proceeds, if any, would be considered for reduction of capital cost."*

From the facts of the case in hand, it is evident that the *ratio decidendi*, adopted by the Hon'ble Central Commission in the Mauda case squarely applies in the Marwa case. Accordingly, on the specific count of railway infrastructure, the delay up to 17th June, 2015 qualifies to be considered for condonation.

<u>Reselection of agency for erection of chimney</u>

The work of chimney was awarded by M/s BHEL to M/s GDCL. Further, M/s GDCL was also carried out work of BALCO power house. CSPGCL granted its consent on 16.09.2009, however, on 23.09.2009 chimney of BALCO collapsed and nearly 40 persons lost their lives. Consequent to the accident, CSPGCL withdraw its acceptance for award of contract to M/s GDCL and asked M/s BHEL to appoint some other competent agency. The alternate arrangement took some time and resulted in delay from the original scheduled COD. The whole issue was dealt in quite detail by this Commission in order dated 22.09.2015 passed in P. No. 08/2015 related to 1x500 MW KWTPP. It is noted that the consent of award to M/s GDCL, withdrawal of consent, and appointment of the other agency was exactly on the same dates in the case of Marwa TPP & KWTPP. In fact, two of the letters are common letter for the two projects. As the order in case of KWTPP has already attained finality, it squarely applies in the present case also. The Commission reverts back to the relevant portion of the KWTPP order:-

> *"8.1.1 From analysis of sequence of events it is noted that the BALCO chimney accident was a fatal accident in the history of Indian Power Sector in which many lives were lost. Implications of such a major accident and that too in nearby area cannot be ignored or overlooked.*
>
> *8.1.2 The reports available on records indicates that though in the initial stages M/s BALCO management attributed the whole accident to lightening, soon after, reports surfaced it appeared that the accidents was not a result of 'Act of God' rather it was a manmade disaster.*
>
> *NIT, Raipur in its investigation and various reports available in this regard have shown doubts on faulty design, substandard material and poor workmanship.*
>
> *8.1.3 The judicial committee appointed by Government of Chhattisgarh (Sanddep Bakshi Committee), in its report tabled on the floor of Legislative assembly has also indicated M/s GDCL (amongst others) responsible for this severe mishap.*
>
> *8.1.4 In such a scenario, CSPGCL's decision in barring award of work to M/s GDCL which was the agency carrying out the construction work at nearby BALCO site appears correct. Approximate 15 days time was taken to firm up such decision (23nd September 2009 i.e date of accident to 9th October 2009 i.e date of written communication to BHEL) also indicate that the decision was not a panic reaction but was a deliberated and thoughtful decision in the prevailing circumstances at that time.*
>
> *8.1.5 BHEL carried out the retendering process. Again, looking to the time required for review of scope and specifications which would have been required in the aftermath of BALCO accident and the procedural part for such tenders, approximately five months time do not appear inordinate delay.*
>
> *8.1.6 In view of the above, the time period from 16th September 2009 i.e. the date of consent for award of work to M/s GDCL and 4th March 2010 i.e. the date of award of work of chimney to the other agency, (about 169 days) qualifies as the delay attributable to uncontrollable factors. As detailed in the subsequent para also, it is made clear that any LD on account of delay in supply / construction of chimney will be pass through to the consumers."*

The above applies in the instant case too.

Delay on account of Fire Accident

CSPGCL has submitted that in the night of 13th / 14th July, 2015 a fire broke out in the crusher house. The petitioner has prayed for condonation of period of outage on this count too. The Commission is not inclined to accept the petitioner's prayer in this respect. The fire was not a result of any act of God or a natural disaster, the utility is responsible to operate and maintain its station in a proper and safe manner. Act of commission / omission by its contractors; do not absolve the utility from its prime duty. Accordingly, the cost and consequences of the fire accident rest squarely on CSPGCL. Nothing due to the same can be a burden on the consumers. However, in accordance to the principle laid down by the Hon'ble APTEL the recovery made from the vendors / contractors in the form of penalty / LD and / or the insurance proceeds against the action may be retained by the petitioner.

To conclude the discussions on the reasons of delay and their implications, it is noted that 107 days delay need to be condoned on account of land & R&R issues. 169 days delay qualifies for condonation on account of reselection of agency for chimney. Delay up to 17th June, 2015 qualifies for condonation on account of rail infrastructure and on account of delay in construction of Baraage by WRD, COD was not possible before 01st March 2016.

This implies that the first 3 delays i.e. (i) delay due to land & RR issues, (ii) delay due to reselection of agency for chimney and (iii) delay due to rail infrastructure, though qualify for condonation will gets subsumed in the delay on account of construction of barrage. It leaves the issue of fixation of Revised Scheduled COD. It cannot be presumed that once water supply from barrage starts, a 500 MW unit can be opeartionalized and achieve commercial status instantaneously. Obviously, some margin has to be accounted for.

Keeping in view, the delay already taken place, the Commission adopts a stringent view. 10 days margin for unit 1 and thereafter further 21 days margin for unit 2 COD is allowed. Accordingly, the revised Scheduled COD is fixed as 10th March, 2016 for unit-I and 31st March, 2016 for unit-II. All Additional delays beyond such revised SCOD i.e. 10.03.2016 for unit-I and 31.03.2016 for unit-II are on account of CSPGCL own failures and hence are disallowed in totality. The IDC and the overheads for the corresponding period shall be on account of CSPGCL and accordingly has been excluded from the computation.

As the costs up to revised COD are being allowed in full and for the period thereafter are being disallowed in totality, in accordance to Hon'ble APTEL Order, the recoveries through LD / penalties/ insurance should also follow the same path.

However, as at present no delay analysis and break up of proposed LD is available, for the purpose of this order the Commission is considering sharing of proposed recovery from LD in 50:50 ratio. The petitioner is directed to submit details of delay analysis and LD recoveries at the time of true up after contract closure.

The deduction on the two counts has been computed as under:-

(a) **Overhead & miscellaneous expenses:** As already dealt in the pre-para related to analysis of cost components, the unit wise overhead cost (net of R&R) deduced from the CA certificate is Rs 110.89 Crore and 107.61 Crore for Unit -1 and Unit- 2 on their respective actual date of commercial operation. With the revised Scheduled COD, the overhead cost need to be reduced on prorate basis. The same has been computed as under:

Table 4 Computation of Overhaed Expenses (Rs. Crore)

Particulars	Unit -1	Unit -2
Revised Scheduled COD	10-Mar-16	31-Mar-16
Actual COD	31-Mar-16	31-Jul-16
Number of Days upto Revised Scheduled COD	2626	2647
Number of days upto Actual COD	2647	2769
Overhead expenses incurred upto actual COD	110.89	107.61
Pro-rata Overhead Expenses allowable upto Revised Scheduled COD	**110.01**	**102.87**
Overhead Expenses Disallowed	0.88	4.74
Total Overhead Expenses Allowed in tariff	**212.88**	
Total Overhead Disallowed	5.62	

(b) **Interest During Construction:** The IDC for the units up to actual COD is recognized from the Certificate issued by CA (which is based on audited accounts for 2015-16 and unaudited accounts of 2016-17). The methodology adopted for bifurcation of the overhead expenses on 54:46 ratio, has been adopted in the bifurcation of IDC for the common period. The Commission agrees to the methodology, as it is inspirited from CERC order on benchmark cost. Normally, when the project gets delayed for completion of main plant or essential facilities, expenses on such account have to be readjusted to arrive at recomputed value of the IDC. From the submissions made before the Commission, it appears that the work done during the period from Revised Scheduled COD to the actual COD was not for something without which COD could not have been achieved. As such there is no point in loading such expense and re-compute the allowable IDC. Had the actual COD been achieved on the revised Scheduled COD, the IDC would have been limited to such principal and such span, as had been incurred till such date. Accordingly, the computation has been done. For working out the pro-rata computation, reliance has been placed on the PFC quarterly statement for the quarter 15th January 2016 to 15th April 2016 i.e the quarter in which both the revised Scheduled COD fall. The computation is tabulated as under:-

Table 5 Computation of IDC (Rs. Crore)

Particulars	**Unit-1**	**Unit-2**	**Total**
Actual COD of Units	31-Mar-16	31-Jul-16	
Actual IDC incurred as per CA Certificate	1632.06	1519.41	3151.50
Actual IDC incurred upto 31- Mar- 2016 (U#1- 54%, U#2- 46%)	1632.06	1390.27	3022.33

Interest Charged by PFC in the Quarter 16 /01/16 to 15/04/16	224.91
Rebate granted by PFC in the same Quarter	4.35
Net Interest Charged by PFC	220.55
Per day Interest charged by PFC	2.45
Unit -1 Share @54%	1.32

Allowable IDC for Unit 1

The Revised SCOD	10-Mar-16
Actual COD	31-Mar-16
Delay (in days) from Revised SCOD to Actual COD	21
Prorate IDC to be Disallowed	27.79
Allowable IDC for Unit-1	**1604.27**
Allowable IDC for Unit -2	**1390.27**
(All IDC incurred after 31st March is disallowed)	
Disallowance for unit -2	129.14
Total IDC to be Allowed	**2994.54**

3.3.10 Initial Spares

The petitioner has prayed for allowing initial spares to the tune of 1.5% of plant and machinery cost (amounting to Rs. 74.56 crores) for approval of the Commission while prayer has also been made for extension of cut-off date with permission to procure the additional initial spares to the tune of 2.5% of the cost of plant and machinery (4% allowable in the regulations – 1.5% stated above) amounting to Rs. 124.27 Crore. The prayer for extension of cut-off date for procurement of initial spares has been supported with the contention that as no relaxation in the performance norms is being sought due to such differed procurement. The end consumer would have to bear lesser AFC on account of comparatively lower depreciation, RoE, interest, etc. Though the submission appears innocuous, the Commission is not inclined to accept the same. A prayer for relaxation must come with specific details without which it is not prudent to take a final view. Accordingly, for the purpose of this order, initial spares amounting to Rs. 74.56 Crore (i.e., at 1.5% of plant and machinery cost) only have been considered. Leave is granted to the petitioner, that if required, case for extension of cut-off date for procurement of additional initial spares within the ceiling limit notified in the regulations along with the details of such spares and timeline for procurement may be submitted before the Commission in additional capital investment plan before October 31, 2018. Based on the justifications, appropriate view shall be taken.

3.3.11 Approved Project Cost for Marwa TPP

With the above, the final capital cost for the project, as considered by the Commission vis-à-vis the petition is as under:

Table 6 Approved Capital Cost for Marwa TPP (Rs. Crore)

Sr. No.	Particulars	Petition	Approved
1	Preliminary & Enabling expenses	12.54	0.00
2	Land	125.00	125.00
3	R&R and Development*		49.06
4	BTG Supplies	1845.00	1845.00
5	Erection Testing Commissioning of BTG	254.00	254.00
6	Freight & Insurance on BTG	58.00	58.00
7	BOP Supply	943.87	943.87
8	Erection Testing Commissioning of BOP	30.13	30.13
9	BTG Civil	206.17	206.17
10	Chimney	30.87	30.87
11	Cement	24.95	24.95
12	Steel	195.39	195.39
13	BOP Civil	688.02	688.02
14	Colony	95.64	95.64
15	Initial Spares**	74.56	74.56
16	Price Variation (PV) on BTG Supplies	101.48	101.48
17	PV on ETC of BTG	97.00	97.00
18	PV on BOP Supplies	113.26	113.26
19	PV on ETC of BOP	3.62	3.62

Sr. No.	Particulars	Petition	Approved
20	Taxes, Duties & Electricity charges	545.21	545.21
21	Rail Infrastructure***	270.00	230.57
22	Consultancy & Engineering	8.00	8.00
23	Fuel for Trial run up to COD	87.46	81.91
24	IDC	3152.43	2994.54
25	Overheads & Miscellaneous Expenses	270.08	212.88
30	Less LD Anticipated****	233.25	116.625
31	**Net Cost**	**8999.42**	**8892.51**

Note:

* R&R cost of 49.06 is as per petition para no 3.36, it is adjusted from Overheads. Preliminary expenses presumed to be subsumed in other costs.

** Initial spares as 1.5% of the plant & machinery cost, subject to stipulation in the order.

*** On Rail infrastructure cost, leave granted in the relevant section of order.

**** LD consideration is provisional, as detailed in the order.

3.3.12 Approved Capital Cost as on COD

After perusal of the audited accounts for FY 2015-16 and CA certificate submitted by CSPGCL regarding the Capital cost of the project, the Commission has approved the Capital cost as on COD after taking into account the disallowances in capital cost as discussed above.

The Commission hereby approves the Capital cost of Rs. 4227.31 Crore for Unit #1 of MTPP. Further, the additional capitalisation of Rs. 61.71 Crore pertaining to Unit #1 was undertaken for the period from COD of Unit #1 (i.e., March 31, 2016) to COD of Unit #2 (i.e., July 31, 2016). Further, the Commission approves the Capital cost of Rs. 3730.23 Crore towards Unit #2. Accordingly, the capital cost approved as on COD is shown in the following Table:

Table 7 Approved Capital Cost as on COD for Marwa TPP (Rs. Crore)

Sr. No.	Particulars	Approved
1	Capital cost for Unit 1 as on March 31, 2016	4,227.31
2	Capital cost for Unit 1 for period from March 31, 2016 to July 31, 2016	61.71
3	Capital Cost for Unit 2 as on July 31, 2016	3,730.23
4	**Capital Cost of Project as on COD (i.e., July 31, 2016)**	**8,019.25**

3.3.13 Additional Capitalisation

After taking into account approved project Cost and capital cost approved as on COD, the Commission approves the additional capitalisation from COD i.e., July 31, 2016 till cut-off date i.e., March 31, 2019 as shown in the following Table:

Table 8 Approved Additional Capitalisation for Marwa TPP (Rs. Crore)

Sr. No.	Particulars	FY 2016-17	FY 2017-18	FY 2018-19
1	Additional Capitalisation	239.24	245.00	389.01

3.3.14 Means of Finance for Capital Cost as on COD

From the PFC loan sheets, it is observed that the actual loan drawl as on July 31, 2016 is Rs. 7226.26 Crore. This loan drawl is against the actual capital expenditure including actual gross fixed assets and WIP works. The actual GFA as on July 31, 2016 is Rs. 8186.34 Crore, as per CA Certificate and CWIP works is Rs. 66.30 Crore. This results into actual capital expenditure of Rs. 8252.64 Crore as on July 31. 2016. Thus, debt equity ratio is worked out as 88:12 as on July 31, 2016.

It is made clear that the cost so disallowed shall be deducted from debt and equity in the pro-rata manner i.e. the capital structure for the project shall remain unaltered.

As equity carries higher cost to consumer and regulation requires that any swapping is allowable only if it is beneficial to consumer, therefore irrespective of the allowable limit of 30% of equity, the equity in all additional capitalization within the project cost considered in this order, shall be restricted to the above level. For the purpose of tariff, any equity infusion beyond this level shall be treated as normative loan. However, if equity is infused at lower levels, then the actual shall be considered.

Accordingly, the Commission approves means of Finance for Capital cost as on COD as shown in the following Table:

Table 9 Approved Means of Finance as on COD for Marwa TPP (Rs. Crore)

Sr. No.	Particulars	Unit 1 (as on March 31, 2016)	Unit 1 (March 31, 2016 to July 31, 2016	Unit 2 (As on July 31, 2016)	As on COD
1	Debt amount	3,701.56	54.03	3,266.30	7,021.90
2	Equity Amount	525.75	7.67	463.93	997.35
4	**Total Capitalisation**	**4,227.31**	**61.71**	**3,730.23**	**8,019.25**

Before parting with, the Commission would like to remind, what it has stated in prior order dated March 31, 2012:

> *"15. (v) Further, the approval of the schemes does not imply that Commission has given any blanket approval for capitalization of such expenses. It must be borne by all and one, that in-principle approval by the Commission does not in any way absolve or dilute the responsibility and liability of the competent authorities to adhere to prudence check on technical requirement and detailed specifications. Similarly canons of financial propriety shall have to be applied with undiminished force and vigor. Regulatory process only ensures test on some broad parameters. Executive authorities must do their duty of exercising prudence check, un-trembled by the consideration that such costs or proposals have passed the test of regulatory scrutiny. If at any point of time, Commission comes to know about any irregularity, then such costs shall be not be considered for capitalization 'ab-initio'."*

Needless to repeat, the observation remains in place and applies squarely in this case too.

4 TRUE-UP FOR CSPGCL FOR FY 2015-16

4.1 Background

Unit #1 of the Marwa Thermal Power Plant (MTPP) achieved Commercial Operation Date (COD) on March 31, 2016 and Unit #2 of MTPP achieved COD on July 31, 2016. As COD of Unit #1 falls in FY 2015-16, CSPGCL submitted the True-up for FY 2015-16 for one day.

The Commission vide Order dated March 31, 2016 has approved the provisional tariff for MTPP. Accordingly, CSPGCL has billed the CSPDCL on the basis of approved provisional Tariff.

As discussed in the earlier Chapter of this Order, the Commission has approved the capital cost for Unit #1 of MTPP. Accordingly, in the present Chapter, the Commission has undertaken True-up for FY 2015-16 for one (1) day in accordance with CSERC (Terms and Conditions of determination of tariff according to Multi-Year Tariff principles and Methodology and Procedure for determination of Expected revenue from Tariff and Charges) Regulations, 2012 (herein after referred as “CSERC MYT Regulations, 2012”) and based on Audited Annual Accounts for FY 2015-16.

4.2 Generation Capacity of New Generating Stations

CSPGCL submitted that Unit #1 of MTPP achieved COD on March 31, 2016. Accordingly, the Generation capacity for MTPP for FY 2015-16 is 500 MW.

4.3 Generation Performance Parameters

CSPGCL’s submission

CSPGCL submitted that performance parameters achieved, vis-à-vis the normative parameters as shown in the Table below.

Table 10 Performance Parameters for FY 2015-16 as submitted by CSPGCL

Sr. No.	Station	Legend	Normative	Actual
1	Plant Availability Factor	%	85.00%	95.74%
2	Auxiliary Consumption	%	6.00%	7.35%
3	Specific Oil Consumption	ml/kWh	1.00	0.0
4	Station Heat Rate	kCal/kWh	2424	2409.09
5	Transit Loss	%	0.80%	0.63%
6	Gross Generation	MU	10.20	10.50
7	Net Generation	MU	9.59	9.73

Further, CSPGCL submitted that it was the first day of the commercial operation with teething troubles. As only Unit #1 was operational but common services for both the units were operational. This resulted in little shortfall in the Auxiliary Energy Consumption. CSPGCL requested the Commission to allow relaxed norms of auxiliary consumption to the actual level.

Commission's View

The Commission notes that as per Regulation, COD of Unit is the date from 0000 Hours of which, scheduling is started by CSLDC. In case of MTPP, the scheduling of power of Unit #1 was started from 0000 Hours of March 31, 2016. The Commission has verified the COD of Unit #1 from CSLDC scheduling sheet and monthly State Energy Account.

It is observed that there was no planned /forced outage of Unit #1 on March 31, 2016. Further, the Commission has verified actual PAF of Unit #1 of MTPP from SLDC Certificate and found that actual PAF of 95.74% submitted by CSPGCL is appropriate. For the purpose of the True-up, the Commission approves PAF of 85% for MTPP for FY 2015-16.

CSPGCL submitted that Unit #1 was operational but common services for both the units were operational on March 31, 2016. As regards the details of Auxiliary Consumption sought by the Commission, CSPGCL submitted that Guaranteed Auxiliary Consumption as per BTG and BOP contract for MTPP is 5.54% at 100% Maximum Continuous Rating (MCR) and 6.15% at 80% MCR. Further, Boiler and TG auxiliary loading varies from 80% to 100%, while others remains constant. At 85% of loading, the guaranteed AEC comes out to 5.99% i.e., 6%. Further, in general the auxiliaries covered under the head Steam Generator, CW pump and TG are unit specific. Therefore, for Unit #1, the loading gets reduced to 50%. Station C&I and Transformer has got some common functionalities; hence loading is reduced by 40%. Further, BOP is mostly for common services and these equipments have very low correlation with plant load. Further, CSPGCL submitted that AEC for Unit #1 would be about 6.75% at 100% MCR, 7.66% at 80% MCR and 7.44% at 85% MCR.

As regards the auxiliary energy consumption (AEC) for MTPP, Regulation 39.4 of the MYT Regulations, 2012 specifies the normative auxiliary energy consumption of 6% for Unit size of 500 MW with steam driven boiler feed pumps and 8.50% for electrically driven boiler feed pumps. Accordingly, the Commission approves the Normative Auxiliary consumption of 6% for MTPP for FY 2015-16.

As regards the Station Heat Rate, Regulation 39.2 (B) of CSERC MYT Regulations, 2012 specifies Station heat rate for Thermal Generating Station achieved COD after April 1, 2010 as under:

Coal-based Thermal Generating Stations = 1.065 X Design Heat Rate (KCal/kWh)

Further, Design Heat Rate as per CSERC MYT Regulations, 2012 for MTPP is 2276 kCal/kWh. Accordingly, the Station heat rate for MTPP works out as 2424 kCal/kWh. The Commission approves the Station heat rate of 2424 kCal/kWh for FY 2015-16.

Further, the Commission approves the Specific Oil Consumption and Transit loss as per provisions of CSERC MYT Regulations, 2012.

In view of the above, the performance parameters approved by the Commission for the purpose of True-up for FY 2015-16 is shown in the following Table:

Table 11 Performance Parameters for FY 2015-16 as approved by the Commission

Sr. No.	Station	Legend	Actual	Approved after True-up
1	Plant Availability Factor	%	95.74%	85.00%
2	Gross Generation	MU	10.50	10.20
3	Net Generation	MU	9.73	9.59
4	Auxiliary Consumption	%	7.35%	6.00%
5	Specific Oil Consumption	ml/kWh	0.0	1.00
6	Station Heat Rate	kCal/kWh	2409.09	2424
7	Transit Loss	%	0.63%	0.80%

4.4 Calorific Value and Price of Fuel

CSPGCL's Submission

CSPGCL submitted the actual calorific value and price of fuel for FY 2015-16 for Unit #1as shown in the following Table:

Table 12: Actual Calorific Value and Price of fuel for FY 2015-16

Station	Coal		Secondary Fuel (HFO +HSD)	
	Calorific Value (kcal/kg)	Actual Price of Fuel (Rs./MT)	Calorific Value (kcal/kL)	Actual Price of Fuel (Rs./kL)
MTPP	3,352.00	2,501.49	10,000	33,730.07

Commission's View

The Commission has gone through the details of actual Gross Calorific Value (GCV) and prices of fuel. Further, it is observed that CSPGCL has considered the price of fuel equivalent to actual price of Fuel for FY 2016-17 since, no separate prices are available for single day. The Commission notes that CSPGCL has submitted the month-wise actual landed price of fuel from April 2016 to March 2017. For the purpose of true-up for FY 2015-16, the Commission has considered the prices of fuel for the month of April, 2016.

The calorific value of fuel and price of fuel considered by the Commission for computation of normative fuel cost for FY 2016-17 is shown in the following Table:

Table 13: Calorific Value and Price of fuels for FY 2015-16 approved by the Commission

Station	Coal		Secondary Fuel (HFO +HSD)	
	Calorific Value (kcal/kg)	Normative Price of Fuel (Rs./MT)	Calorific Value (kcal/kL)	Normative Price of Fuel (Rs./kL)
MTPP	3,352.00	1,983.35	10,000	22,307.74

4.5 Fuel Cost

Commission's Views

Based on the approved performance parameters, calorific values of fuels and fuel prices, the normative fuel cost has been computed for FY 2015-16 as shown in the Table below:

Table 14: Approved Fuel Cost in Provisional True-up for MTPP for FY 2015-16

Station	Actual	Normative approved after True-up
Cost of Coal (Rs. Crore)	1.89	1.47
Cost of Oil (Rs. Crore)	-	0.01
Total Cost (Rs. Crore)	1.89	1.48
Net Generation (MU)	9.73	9.59
Fuel Cost (Rs./kWh)	**1.94**	**1.55**

4.6 Annual Fixed Charges for MTPP for FY 2015-16

Regulation 35 of the MYT Regulations, 2012 specifies as under:
"35. Annual Fixed Charges

35.1 The annual fixed cost (AFC) of a generating station shall consist of the following components –

(a) Return on equity;

(b) Interest and finance charges;

(c) Depreciation;

(d) Interest on working capital;

(e) Operation and maintenance expenses;

NOTE:

1. *Non-Tariff Income as specified in the Regulation 38, shall be subtracted from the sum of above (a to e) to arrive at AFC.*
2. *The SLDC charges shall be recovered in accordance with applicable CSERC (Fees and charges of SLDC) Regulations specified from time to time.*
3. *Pension & Gratuity Fund Contribution shall be recoverable in equal monthly instalments as may be determined by the Commission in the Tariff Order.*
4. *The Statutory Taxes and Duties shall be recoverable on reimbursement basis, as per actual.*

Provided that Depreciation, Interest and finance charges on Loan Capital, Interest on Working Capital and Return on Equity for Thermal and Hydro Generating Stations shall be allowed in accordance with the provisions specified in Chapter 3 of these Regulations.

The approval of the Commission for components of the Annual Fixed Charges is discussed in subsequent sections.

4.7 Capital Cost and Means of Finance

CSPGCL's Submission

CSPDCL has submitted the details of capital structure for FY 2015-16 as shown in the following Table:

Table 15: Capital Cost for Unit #1 as submitted by CSPGCL (Rs. Crore)

Particulars	FY 2015-16
Opening GFA	4340.47
Opening CWIP	3812.57
Opening Capex	8153.04
Closing GFA	4340.47

Particulars	FY 2015-16
Closing CWIP	3812.57
Closing Capex	8153.04
Opening Gross Loan against Capex	7189.39
Closing Gross Loan against Capex	7189.39
Borrowed Gross loan in Opening GFA	3827.45
Borrowed Gross loan in Closing GFA	3827.45
Opening Normative Equity in GFA	513.03
Closing Normative Equity in GFA	513.03

Commission's Views

As discussed in earlier Chapter of this Order, the Commission has approved the capital cost and means of finance for Unit #1 of MTPP. The same has been considered for computation of True-up for FY 2015-16.

The capital cost and means of finance for Unit #1 for FY 2015-16 as approved by the Commission is shown in the following Table:

Table 16: Approved Capital Cost and Means of Finance for MTPP for FY 2015-16

(Rs. Crore)

Station	CSPGCL Petition			Approved after True up		
	Equity	Debt	Total	Equity	Debt	Total
MTPP	513.03	3827.45	4340.47	525.75	3701.56	4227.31

4.8 Depreciation

CSPGCL's Submission

CSPGCL submitted that Depreciation has been computed by applying weighted average depreciation rate on the average regulatory GFA during the year. The weighted average depreciation rate has been computed as 5.34% by applying the category-wise scheduled rates specified in the Regulation 24.4 of the MYT Regulations, 2012 on the average accounting GFA. The depreciation has been computed for single day i.e., March 31, 2016. CSPGCL claimed the depreciation of Rs. 0.63 Crore for FY 2015-16.

Commission's Views

The depreciation for MTPP for FY 2013-14 has been computed as per Regulation 24 of CSERC MYT Regulations, 2012 on average asset base during the year. Further, the Commission notes that the depreciation rate of 5.34% has been computed by CSPGCL on GFA of Rs. 4500.65, without considering the correction of reversal of entries of Rs. 160.18 Crore towards migration of accounting software. The Commission has computed the depreciation rate on actual GFA of Rs. 4340.47 Crore after taking into account reversal entries of Rs. 160.18. The depreciation has been computed after applying the weighted average rate of depreciation on average GFA approved in this Order for FY 2015-16.

In view of the above, the Commission approves the Depreciation for FY 2015-16 for Truing up, as shown in the following Table:

Table 17: Depreciation for FY 2015-16 as approved by the Commission (Rs. Crore)

Sr. No.	Particulars	CSPGCL Petition	Approved after True up
1	Opening GFA	4340.47	4227.31
2	Additional Capitalization	0.00	0.00
3	Closing GFA	4340.47	4227.31
4	Average GFA	4340.47	4227.31
5	Weighted Average rate of Depreciation	5.34%	5.34%
6	**Depreciation**	**0.63**	**0.62**

4.9 Return on Equity

CSPGCL's submission

CSPGCL has submitted that Return on Equity (RoE) for FY 2015-16 has been computed, as per the Regulation 22 of the MYT Regulations, 2012. RoE has been computed on pre-tax basis at the base rate of 15.50% for truing up purpose. No grossing up with applicable tax rate has been considered. CSPGCL submitted that final assessment / settlement by the tax authorities take time and the same is uncontrollable. CSPGCL craved the leave claiming, income tax liability for the true up year, in future, if the same is raised by the authorities. CSPGCL claimed RoE of Rs. 0.22 Crore for FY 2015-16.

Commission's Views

Regulation 22 of the MYT Regulations, 2012 specifies as under:

> *"22. RETURN ON EQUITY*
>
> *22.1 Generation and Transmission: Return on Equity shall be computed in rupee terms on the equity base determined in accordance with Regulation 17. Return on equity shall be computed on pre-tax basis at the base rate of maximum 15.5 % to be grossed up as per Regulation 22.3 of these Regulations.*
>
> ...

22.3 The rate of return on equity for each year of the control period shall be computed by grossing up the base rate with the prevailing MAT rate of the base year: Provided that return on equity with respect to the actual tax rate applicable to the generating company or the transmission licensee or distribution licensee, as the case may be, in line with the provisions of the relevant Finance Acts of the respective year during the Control Period shall be trued up separately for each year of the Control Period. In case, no tax is payable during the financial year, the tax rate for the purpose of truing up shall be taken as nil.

…"

The Commission has allowed RoE as per above said Regulations. As the Income Tax paid as per Audited accounts for FY 2015-16 is zero, the grossing up of base rate of RoE with the applicable tax rate has not been considered. The base rate of RoE of 15.50% has been considered as specified in the MYT Regulations, 2012. As regards the prayer of CSPGCL to allow the income tax liability for FY 2015-16 on actual basis after final assessment by the tax authorities, an appropriate view regarding the same shall be taken based on submissions of CSPGCL in this regard at the appropriate time.

The RoE for MTPP approved by the Commission after Truing up of FY 2015-16 is shown in the following Table:

Table 18: Return on Equity for FY 2015-16 as approved by the Commission (Rs. Crore)

Sr. No.	Particulars	CSPGCL Petition	Approved after True up
1	Opening Regulatory Equity	513.03	525.75
2	Addition of Equity during year	0.00	0.00
3	Closing Regulatory Equity	513.03	525.75
4	Rate of Return on Equity	15.50%	15.50%
5	**Return on Equity**	**0.22**	**0.22**

4.10 Interest and Finance Charges

CSPGCL's submission

CSPGCL submitted that the interest & finance charges on loan capital have been computed as per the Regulation 23 of the MYT Regulations, 2012. The repayment for the year has been deemed to be equal to the depreciation for the year and normative interest on loan shall be calculated on the average normative loan during the year by applying the weighted average rate of interest of the actual loan portfolio at the beginning year.

CSPGCL further submitted that entire debt for the project is tied up with PFC and interest rate is as per audited accounts related to ‘Long Term Borrowing’ from PFC, for MTPP.

The Interest and Finance Charges submitted by CSPGCL is show in the following Table

Table 19: Interest on Loan Capital as submitted by CSPGCL (Rs. Crore)

Sr. No.	Particulars	FY 2015-16
1	Total Opening Net Normative Loan	3,827.45
2	Repayment during the period	0.63
3	Increase/Decrease due to ACE during the Year	-
4	Total Closing Net Normative Loan	3,826.81
5	Average Loan during the year	3,827.13
6	Weighted Average Interest Rate	13.00%
7	Interest Expense for the Period	1.36
8	Finance and Other Charges	-
9	**Total Interest Expenses**	**1.36**

Commission’s Views

The Commission has computed the Interest and Finance charges for FY 2016-17 as per Regulation 23 of the CSERC MYT Regulations, 2012. The opening net normative loan has been considered as approved in the earlier Section of this Order. The repayment has been considered equal to depreciation approved in this Order for the same year.

Regulation 23.5 of CSERC MYT Regulations, 2012 specifies that 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. Since, Unit #1 has been commissioned on March 31, 2016, the actual loan portfolio as on March 31 2016 has been considered for computation of rate of Interest. The Commission notes that Note 4.1 of Audited account mentioned outstanding loan of Rs. 7189 Crore as on March 31, 2016. This loan is repayable in 60 quarterly instalments commencing from October 2016 along with rate of interest of 10.10%. Hence, the rate of interest of 10.10% is applicable from October 2016 onwards. Previous to that, the applicable rate of interest was 13%, as per Note 4.1 of Audited accounts for FY 2014-15. The Commission sought details of tranche wise disbursement and applicable interest rate for PFC loan. From this, the Commission has computed the weighted average rate of interest of 12.91%. The same rate of interest has been considered by the Commission.

In view of the above, the Interest and Finance charges approved by the Commission for FY 2015-16 after truing up is shown in the following Table:

Table 20: Interest & Finance Charges as approved by the Commission for FY 2015-16 (Rs. Crore)

Sr. No.	Particulars	FY 2015-16
1	Opening Net Normative Loan	3701.56
2	Repayment during the period	0.62
3	Debt Addition during the year	-
4	Closing Net Normative Loan	3700.94
5	Weighted Average Interest Rate (%)	12.91%
6	Interest Expense for the Period	1.31
7	Add: Financing and Other Charges	-
8	**Total Interest Expenses**	**1.31**

4.11 Operation and Maintenance (O&M) expenses

CSPGCL's Submission

CSPGCL submitted that the O&M Expenses (excluding water and SLDC charges), as per the Regulation 40 of MYT Regulations, 2012. Further, CSPGCL submitted that as per the methodology adopted in the previous orders, O&M Expense on support functions such as Head Office, CAU etc. are allocated among the thermal power plants & Hasdeo Bango HEP, based on their installed capacities. CSPGCL added that as true up is for only 1 day, no O&M expense has been considered and no such allocation has been made.

CSPGCL submitted that, for calculation of normative of O&M Expenses for FY 2015-16 as per the Commission's Tariff Order for True up of FY 2015-16, the weighted average WPI-CPI inflation has been considered as 2.39%. CSPGCL submitted the normative O&M Expenses for (including impact of wage revision) Marwa TPP based on the values considered by the Commission for KWTPP in Order dated March 31, 2017 as shown in following Table:

Table 21: O&M Expenses for MTPP for FY 2015-16 as submitted by CSPGCL

Sr. No.	Particulars	Rs. Crore
1	Normative O&M Expenses	87.77
2	Impact of Wage Revision	3.71
3	Total O&M Expenses	91.48

Commission's Views

Regulation 40.2 of the MYT Regulations, 2012 specifies as under:

"40.2 The O&M expenses for the base year i.e. FY 2012-13, for the units / stations coming into commercial operation after 01.04.2005, shall be considered as under:-

40.2.1 The normative O&M expenses as specified in the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulation 2009 above regulation for the year 2009-10 shall be admissible at the rate of 90% of the value allowed by CERC. Such normative value shall be exclusive of water taxes payable to the State government which shall be pass through to the beneficiary on actual basis. However, except for pension fund liabilities, normative value, so derived, shall be considered inclusive of all expenses incurred to meet head office or holding company expenses.

40.2.2 The adjusted value for 2009-10, as arrived above, shall be escalated by the actual inflation at a weighted average of 60: 40 of CPI : WPI ratio, on year to year basis till 2011-12.

40.2.3 For projecting the normative value for 2012-13 and onwards, average inflation of last three years (i.e 2009-10, 2010-11, 2011-12) shall be applied. Provided, at the time of true up, the normative O&M cost shall be readjusted to take into account the effect of actual inflation for that period.

Provided, further that impact of pay revision (including arrears), if any, shall be considered separately during the true-up as per audited /unaudited accounts, subject to prudence check and any other factor considered appropriate by the Commission."

In view of the above Regulations, the Normative O&M expenses for MTPP for FY 2015-16 has been computed, by considering COD of Unit #1. For escalating the O&M expenses from FY 2009-10 to FY 2013-14, the escalation rate approved in the Orders for the respective year has been considered. As regards the Impact of wage revision, the Commission accepted the submission of CSPGCL and considered the impact of wage revision as approved for KWTPP.

Accordingly, the O&M Expenses approved by the Commission for FY 2015-16 are shown in the following Table:

Table 22: Approved Normative O&M Expenses for FY 2015-16 (Rs. Crore)

Sr. No.	Particulars	Rs. Crore
1	Normative O&M Expenses	87.77
2	Impact of Wage Revision	3.71
3	Total O&M Expenses	91.48

4.12 Pension & Gratuity Contribution

CSPGCL's Submission

CSPGCL submitted that the Commission has approved combined pension and gratuity contribution by all the state power companies to tune of Rs 350 Crore for FY 2015-16 in MYT Order dated July 12, 2013. Out of the same, CSPGCL share was determined as Rs. 95.40 Crore. CSPGCL submitted that it has religiously contributed the same for FY 2015-16. As per the plant-wise reallocation of the aforesaid contribution, approved by the Commission in the true up order for FY 2015-16, no amount has been considered for MTPP for FY 2015-16 as only one unit was operational that too for 1 day.

Commissions view

The Commission accepts the submission of CSPGCL regarding Pension and Gratuity Contribution. Accordingly, no amount has been considered towards the same.

4.13 Interest on Working Capital

CSPGCL's Submission

CSPGCL submitted that the Interest on Working Capital (IoWC) for FY 2015-16 has been computed in accordance with Regulation 25 of the MYT Regulations, 2012. As per Regulation 25.3, rate of Interest is equal to the applicable Base Rate of State Bank of India as on April 1, 2015 plus 350 basis points for true up of FY 2015-16. CSPGCL claimed IoWC of Rs. 0.09 Crore for FY 2015-16.

Commission's Views

The Interest on Working Capital has been computed in accordance with Regulation 25 of MYT Regulations, 2012. Since, MTPP achieved COD of Unit # 1 on March 31, 2016. The interest rate equal to applicable base rate of State Bank of India as on COD, plus 350 basis points has been considered. The Working capital requirement has been computed on the basis of normative parameters for whole year and IoWC has been computed for one day. The IoWC approved is as under:

Table 23: Approved IoWC for CSPGCL for FY 2015-16 (Rs. Crore)

Sr. No.	Particulars	CSPGCL Petition	Approved after True-up
1	Cost of Coal (1.5 month for non-pit head)	84.24	67.33
2	Cost of Oil (2 months)	0.81	0.56
3	O&M Expenses (1 months)	7.62	7.62
4	Maintenance spares (20% of O&M Expenses)	18.30	18.30

Sr. No.	Particulars	CSPGCL Petition	Approved after True-up
5	Receivables (1 month)	125.56	111.71
6	**Total Working Capital Requirement**	**236.53**	**205.52**
7	Rate of interest for working capital	13.50%	12.80%
8	**Interest on Working Capital**	**0.09**	**0.07**

4.14 Non-Tariff Income

CSPGCL's submission

CSPGCL submitted that as true up is for only one day no Non-tariff income has been considered.

Commission's View

The Commission accepts the submission of CSPGCL and accordingly no non-Tariff income has been considered for FY 2015-16 for true-up purpose.

4.15 Statutory Charges

CSPGCL's Submission

CSPGCL submitted that as per MYT Regulations, 2012, water charges & SLDC charges are recoverable on reimbursement basis. No charges have been considered for true up for 1 day.

Commission's Views

The Commission accepts the submission of CSPGCL and accordingly no Statutory Charges have been considered for FY 2015-16 for true-up purpose.

4.16 Aggregate Revenue Requirement for CSPGCL for FY 2015-16

The Summary of ARR for MTPP for FY 2015-16 is shown in the following Table:

Table 24: Approved ARR for MTPP for FY 2015-16 (Rs. Crore)

Sr. No.	Particulars	CSPGCL Petition	Approved after True-up
1	Depreciation	0.63	0.62
2	Interest & Finance Charges	1.36	1.31
3	Return on Equity	0.22	0.22
4	O&M Expenses	-	-
5	Interest on Working Capital	0.09	0.07
6	Less: Non-Tariff Income	-	-

Sr. No.	Particulars	CSPGCL Petition	Approved after True-up
7	**Total Annual Capacity Charge**	**2.30**	**2.22**
8	Cost of Coal	1.89	1.51
9	Cost of Oil	-	-
10	**Total Energy Charges**	**1.89**	**1.51**
11	Pension and Gratuity Contribution	**-**	**-**
12	**Aggregate Revenue Requirement**	**4.19**	**3.72**

4.17 Revenue from Sale of Power

CSPGCL's Submission

CSPGCL submitted the revenue from sale of power for FY 2015-16 as Rs. 6.84 Crore.

Commission's View

The Commission has considered the revenue from sale of power for FY 2015-16 based on submission of CSPGCL.

4.18 Sharing of Gains and Losses for FY 2015-16

CSPGCL's Submission

CSPGCL submitted that Regulation 13 of the MYT Regulation, 2012 specifies the methods for sharing of gain & losses. The methodology adopted by the Commission in previous Orders has been adopted. CSPGCL prays the Commission for exercise of Regulation 12/ 77 / 79 and all inherent powers vested with the Commission for Generation performance parameters.

Commission's View

Regulation 11 of MYT Regulations, 2012 specifies as under:

> *"11. CONTROLLABLE AND UN-CONTROLLABLE FACTORS*
> *11.1 For the purpose of these Regulations, the term "uncontrollable factors" shall comprise of the following factors, but not limited to, which were beyond the control of the applicant, and could not be mitigated by the applicant:*
> *(a) Force Majeure events;*
> *(b) Change in law*
> *…*
> *11.2 For the purpose of these Regulations, the term "Controllable factors" shall comprise of the following:*
> *...*
> *(b) Generation Performance parameters like SHR, Auxiliary consumption, etc;*
> *…*

(e) Operation & Maintenance expenses"

Regulation 12 and 13 of MYT Regulations, 2012 specify the mechanism for pass through of gains and losses as under:

"12. MECHANISM FOR PASS THROUGH OF GAINS OR LOSSES ON ACCOUNT OF UNCONTROLLABLE FACTORS
The aggregate net gains / losses to the generating company or STU/transmission licensee or distribution licensee on account of uncontrollable items (as per the tariff order) over such period shall be passed on to beneficiaries/consumers through the next ARR or as may be specified in the Order of the Commission passed under these Regulations.

13. MECHANISM FOR SHARING OF GAINS OR LOSSES ON ACCOUNT OF CONTROLLABLE FACTORS
The mechanism for sharing of aggregate net gain / loss on account of better/ under achievement in reference to the target set in tariff order for efficiency linked controllable items shall be passed on to the beneficiary / consumer(s) and the other one-half (or 50%) amount of gain/ loss shall be retained by the generating company or the licensee, as the case may be, over such period as may be stipulated in the Order of the Commission".

The sharing of gains and losses for MTPP for FY 2015-16 on account of controllable factors, has been computed in accordance with the MYT Regulations, 2012, and the established methodology for sharing of gains and losses, as considered in previous Orders.

The sharing of gains and loss after True-up for MTPP for FY 2015-16 is shown in the Table below:

Table 25: Sharing of Gains and Losses as submitted by CSPGCL for FY 2015-16

Particulars	Units	FY 2015-16
Fixed Charges @ NPAF		
Installed capacity	MW	500
NPAF as per MYT Regulations	%	85.00%
Actual PAF achieved (billed)	%	95.74%
Normative aux. consumption	%	6.00%
Actual aux cons	%	7.35%
Normative aux. consumption	MU	0.61
Actual aux cons	MU	0.77
Normative Net Generation	MU	9.59
Actual Net generation	MU	9.73
Total generation available for Fuel Cost recovery	**MU**	**9.73**
Fixed Cost (norm-wise)		
Depreciation	Rs. Crore	0.62
Interest on Loan and Finance charges	Rs. Crore	1.31

Particulars	Units	FY 2015-16
Return on Equity	Rs. Crore	0.22
Interest on Working Capital	Rs. Crore	0.07
O & M Expenses	Rs. Crore	0.25
Less - Non-Tariff Income	Rs. Crore	-
Fixed Cost allowed on Normative Basis	**Rs. Crore**	**2.47**
Fixed cost expenditure excluding O&M	Rs. Crore	2.22
Normative Fixed Cost (Cr. Rs/% of PAF) excluding O&M	Rs Crore/%PAF	0.03
Prorata Fixed cost allowable from Actual PAF	Rs. Crore	2.50
Fixed cost gain from normative cost	**Rs. Crore**	**0.28**
O & M expenses		
Normative O&M Cost allowed	Rs Crore	0.25
Normative O&M Cost (Cr. Rs/% of PAF)	Rs Cr./%PAF	0.00
Pro-rata O&M Cost allowable from actual PAF	Rs Crore	0.28
Actual O&M expenditure	Rs Crore	-
Difference of recovery and expenditure of O&M	**Rs. Crore**	**0.28**
Secondary Fuel Cost		
Normative SFC	Rs. Crore	0.01
Normative SF Cost derived from NPLF	Rs/kwh	0.01
Secondary fuel cost recovery from actual generation	Rs. Crore	0.01
Actual SFC incurred	Rs. Crore	-
Savings due to performance improvement	**Rs. Crore**	**0.01**
Coal Cost (primary fuel)		
Normative Coal Cost	Rs. Crore	1.47
Normative ECR (Coal)	Rs/kwh	1.53
Normative fuel cost on actual sent out	Rs. Crore	1.49
Actual fuel cost	Rs. Crore	1.51
Coal Cost Surplus/(deficit)	**Rs. Crore**	**(0.01)**
Total impact of gain/ loss	**Rs. Crore**	**0.56**
Impact of DSM Charge	**Rs. Crore**	**-**
Net Impact of gain/ loss	**Rs. Crore**	**0.56**
Net applicable Gain/(Loss) to CSPGCL on 50:50 basis	**Rs. Crore**	**0.28**

From the above table, it is seen that CSPGCL has earned a gain of Rs. 0.28 Crore. As per the provisions of the Regulations, 50% of this gain has to be retained by CSPGCL and remaining 50% will be passed on to the consumers of the State.

4.19 Revenue Gap/(Surplus) for CSPGCL for FY 2015-16

In view of the above, the Revenue Gap/(Surplus) for MTPP for FY 2015-16 after truing up has been approved as shown in the following Table:

Table 26: Revenue Gap/(Surplus) after True-up for FY 2015-16 for MTPP (Rs. Crore)

Sr. No.	Particulars	CSPGCL Petition	Approved after True-up
1	ARR for Marwa TPP	4.19	3.72
2	Sharing of Gain/(Losses) for FY 2015-16	0.29	0.28
3	**Total ARR for FY 2015-16**	**4.47**	**4.00**
4	Revenue from Sale of Power	6.84	6.84
5	**Revenue Gap/(Surplus) for FY 2015-16**	**(2.27)**	**(2.83)**

The treatment of this revenue surplus has been discussed in subsequent Chapters of this Order.

5 PROVISIONAL TRUE-UP FOR CSPGCL FOR FY 2016-17

5.1 Approach of the Commission

The Commission notes that CSPGCL has filed provisional True-up for FY 2016-17 based on the provisional accounts. The Commission in Tariff Order for FY 2018-19 dated March 26, 2018 has undertaken provisional True-up for existing Stations of CSPGCL, except MTPP. The revenue gap/(surplus) arising out of such provisional True-up has been passed through and accordingly approved the Retail supply tariff for FY 2018-19.

The Commission has considered the present Petition and in principle is of the opinion that FY 2016-17 provisional true up for the other power station of CSPGCL has already taken place. The impact of such true-up has been taken into consideration while deciding the retail tariff for FY 2018-19. As per the Act, retail tariff is not supposed to be altered during the year. It is one thing to pass on the effect of uncontrollable factors in the form of VCA, however, it is an entirely different gamut to take up an exercise which may alter the complexion of the power purchase cost.

Otherwise too, CSPGCL is supposed to file the final true up for FY 2016-17 based on the audited accounts in November 2018. As such, the Commission is not inclined to undertake the provisional true up for FY 2016-17 for MTPP and CSPGCL is directed to file the final true up in accordance to the timeline specified in CSERC MYT Regulations, 2015 and the orders of the Commission.

As far as final true up of FY 2015-16 is concerned, the same is undertaken in the present Order based on audited accounts. However, for the reasons stated herein-above, the gap /(surplus) arisen out of such exercise, shall be adjusted at the time of retail tariff determination for the ensuing year.

6 ARR FOR FY 2018-19 TO FY 2020-21

6.1 Background

In this Chapter, the Commission determines the Aggregate Revenue Requirement for FY 2018-19 to FY 2020-21 for MTPP in accordance with the provisions of CSERC MYT Regulations, 2015. The component wise analysis is discussed in subsequent Sections of this Chapter.

6.2 Norms of Operation

CSPGCL's Submission

CSPGCL has considered the norms of operation for MTPP as per CSERC MYT Regulations except for PAF. The norms of operation considered by CSPGCL is shown in the following Table:

Table 27: Performance Parameters for FY 2018-19 to FY 2020-21 as submitted by CSPGCL

Sr. No.	Station	Legend	FY 2018-19 to FY 2020-21
1	Plant Availability Factor	%	76.5%
2	Auxiliary Consumption	%	5.25%
3	Specific Oil Consumption	ml/kWh	0.50
4	Station Heat Rate	kCal/kWh	2378.42
5	Transit Loss	%	0.80

As regards the PAF, CSPGCL submitted as under:

(a) Considering the coal shortages, CERC has fixed normative PAF for Central Sector Stations (including those of NTPC) as 83%. The reduced target has been allowed for plants with long term linkages.

(b) Office Memorandum dated February 8, 2016, issued by Ministry of Coal (MOC) GoI, provided policy guideline for grant of 'Bridge Linkage'. It specifies that CIL/ SECL shall endeavour to supply coal on "best effort basis" at 75% of 'Agreed Requirement' which shall be 90% of coal requirement at normative 85% PLF. In realistic terms the Coal linkage is pegged at 53.375% PLF. Further, the above policy document also envisages a MOU between the Coal Company and the utility. CSPGCL has entered into the prescribed MOU on July 19, 2016 for Marwa TPP. The Agreed Requirement has been termed as Annual Agreed Quantity (AAQ), which is divided in twelve (12) equal monthly proportions to derive MAQ.

(c) Further, other clauses made clear that, even in the most optimistic scenario, the Coal which can be expected to be provided by SECL cannot be more than the 90% of coal required for normative 85% PLF. Even if production from allocated mine starts, the production from mine shall be reduced from the allocated 'Bridge Linkage". Thus, the total quantity of coal shall remain pegged at "Agreed Requirement". In no case it can be more than that. At present the AAQ has been fixed as 3.784 MT for the two units. This linkage is for the period upto September 2018. The work on allocated coal mine of Gare Pelma III is progressing as per planned time line provided by Ministry of Coal, Government of India. Till date, there is no delay in achieving the milestones, rather some milestones have been achieved ahead of schedule. Further, as per approved Mining Plan, the coal production is expected to start during FY 2018-19. The production during first full year of operation is expected to be 0.5 MMT and even by the end of control period - FY 2020-21 (i.e. 3rd Year of operation) it is expected to be 3.0 MTPA. Thus, after adjustment, the total coal availability will still be not more than the AAQ.

(d) If it is envisaged that under the most optimistic scenario, MOC would extend the "Bridge Linkage" to the full control period and further the AAQ would be increased to account for actual grade / CV of coal, and the plant would continue to operate as per ideal normative parameters, the maximum achievable PAF, as per Government of India Policy document itself is not more than 76.5% PAF (i.e..90% of the normative 85 % PAF).

CSPGCL submitted that the above constraint is not only totally uncontrollable for CSPGCL but also is a direct implication of the law laid down by the Government. CSPGCL humbly prays that for the purpose of recovery of AFC benchmark PAF under realistic conditions shall be allowed as 53.375% (the coal supply on best effort basis) and under the most optimistic scenario it should not be more than 76.50%

Further, as regards the auxiliary energy consumption and Station heat rate, CSPGCL submitted that the order for 2x500 MW Marwa was placed in FY 2008-09. At that point of time, the auxiliary consumption considered in the GTP i.e. 6% was better than the prevailing norm. Now, after commissioning of the plant and all its subsystems limiting the AEC to 5.25% as desired in the Regulations may have practical limitations. Similarly, after commissioning of the plant, reduction of SHR from 2424 kcal/kwh to 2378.42 kcal/kwh may not be feasible. However, CSPGCL in the present Petition has made computations in compliance of the regulations. CSPGCL also submits that it will try to do the best for optimizing the performance parameters. CSPGCL craved leave for praying relaxation in norms at the time of True up.

Commission's View

The Commission notes the submission of CSPGCL regarding NAPAF for MTPP. It is observed that MTPP has been allocated the coal through Bridge linkage. The Commission sought copy of Office Memorandum dated February 8, 2016 issued by Ministry of Coal, Government of India. From the document, it is observed that there is no minimum assured quantity under Bridge linkage. The supply of coal will be on best effort basis after meeting existing liabilities. No Fuel Supply Agreements, instead only MoU would be entered with no penalties on lower supplies. Agreed requirement of coal is to be calculated at 90% of the normative requirement of the plant at 85% PLF. Further, Coal controller would certify the quantification. Further, CSPGCL submitted that best effort would be limited to supply of 75% of *Agreed requirement of Coal*. Effectively, the supply under best effort basis is limited to coal requirement of the plant at 57.375%.

Further, the Commission notes that arrangement of fuel is primary responsibility of generating company. However, after perusal of documents of Bridge linkage, it is understood that the agreed coal requirement is 76.5% of coal requirement of plant. Hence, it would not appropriate to consider the normative PLF of 85% for MTPP since it would be difficult to achieve during the period, on account of lower supply of coal.

In view of the above, the Commission after exercising its powers Under Regulation 83 and 85 of CSERC MYT Regulations, 2015 approves normative PAF and PLF of 76.5% for MTPP for the period from FY 2018-19 to FY 2020-21. Further, the Commission clarifies that this relaxation does not bar CSPGCL from achieving the higher PAF and PLF than 76.5% during such period.

Further, the Commission clarifies that no incentive shall be allowed over and above PAF and PLF of 76.5%. The incentives are applicable as per CSERC MYT Regulations, 2015 i.e., above 85%.

The Commission has computed the Station Heat Rate for MTPP as per Regulation 39.3 (B) of CSERC MYT Regulations, 2015 by considering the Design Heat Rate of 2276 kCal/kWh. Accordingly, the Commission approves Station Heat Rate of 2378.42 kCal/kWh. Further, the Commission approves the Auxiliary Consumption, Specific Oil Consumption and Transit loss as per Regulation 39.5, 39.4 and 39.7 of CSERC MYT Regulations, 2015 respectively.

The norms of operation approved by the Commission for MTPP is shown in the following Table:

Table 28: Norms of Operation approved by the Commission for MTPP

Sr. No.	Station	Legend	FY 2018-19 to FY 2020-21
1	Plant Availability Factor	%	76.5%
2	Auxiliary Consumption	%	5.25%
3	Specific Oil Consumption	ml/kWh	0.50
4	Station Heat Rate	kCal/kWh	2378.42
5	Transit Loss	%	0.80

6.3 Gross Generation and Net Generation for MTPP

CSPGCL's Submission

CSPGCL has projected gross and net generation for FY 2018-19 to FY 2020-21for MTPP based on installed capacity and projected NAPAF and auxiliary consumption.

Commission's View

The generation for MTPP for FY 2018-19 to FY 2020-21 has been approved on the basis of installed capacity, approved NAPAF/PLF and normative auxiliary consumption. The gross generation and net generation approved is summarised in the following Table:

Table 29: Approved Gross and Net Generation for FY 2018-19 to FY 2020-21

Particulars	FY 2018-19	FY 2019-20	FY 2020-21
Gross Generation (MU)	6,701.40	6,719.76	6,701.40
Net Generation (MU)	6,349.58	6,366.97	6,349.58

6.4 Calorific Value and Price of Fuel

CSPGCL's Submission

CSPGCL submitted Gross Calorific Value and Price of Fuel for projection of fuel cost as shown in the following Table:

Table 30: Gross Calorific Value and Price of Fuel as submitted by CSPGCL (Rs. Crore)

Station	Coal		Secondary Fuel (HFO +HSD)	
	Calorific Value (kcal/kg)	Normative Price of Fuel (Rs./MT)	Calorific Value (kcal/kL)	Normative Price of Fuel (Rs./kL)
MTPP	3,631.06	1,990.87	10,000	37,447.93

Commission's View

The Commission has considered the Calorific value and price of fuel for computation of energy charges as submitted by CSPGCL.

6.5 Energy Charges for MTPP

CSPGCL's Submission

CSPGCL has computed fuel cost based on norms of operation submitted in the Petition and GCV and Price of Fuel considered in the Petition.

Commission's View

As regards the computation of energy charges, MYT Regulations, 2015 specifies as under:

"41.6. The energy charge shall cover the fuel cost (primary fuel as well as secondary fuel), 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 energy charge rate of the month. 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.}

Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined up to three decimal places in accordance with the following formulae for coal based stations:

ECR: [{(GHR- SFC x CVSF)x LPPF/CVPF }+ SFC x LPSFi] x 100/(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 meter, 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 meter, as applicable, during the month.

SFC = Specific fuel oil consumption, in ml per kWh.

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

41.7. Though Secondary fuel cost shall be part of variable cost but shall not be part of Variable Cost Adjustment (VCA) formula. The impact on account of secondary fuel oil cost shall be taken care of at the time of true up.

41.8. Initially, the landed cost incurred by the generating company on secondary fuel oil shall be taken based on actual 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.

41.9. The secondary fuel oil expenses shall be subject to fuel cost adjustment at the end of the each year of tariff period, at the time of true up,

41.10. The landed cost of fuel for the month shall include price of fuel corresponding to the grade and quality of fuel inclusive of royalty, taxes and duties as applicable, transportation cost by conveyer / rail / road or any other means, and, for the purpose of computation of energy charge, and in case of coal shall be arrived at after considering normative transit and handling losses as specified in Regulation 39.7.

41.11. The bi-monthly increase in the primary fuel cost shall be recovered as per the Fuel Cost Adjustment mechanism as per Regulation 67 of this Regulations."

The Energy Charge Rate (ECR) for MTPP has been computed as per the approved formulae. Accordingly ECR is computed as Rs. 1.393 per Kwh. the details considered for computing ECR is as under:

Particulars	**Unit**	
Landed Cost of Coal	Rs/MT	1,990.867
Landed Cost of Oil	Rs./kl	37,448.000
GCV of Coal	kCal/kg	3,631.064
GCV of Oil	kCal/ltr	10,000.000
Normative Station Heat Rate	kCal/kWh	2,378.420
Normative Sp. Oil consumption	ml/kWH	0.500
Normative Aux Consumption	%	5.250
ECR for Coal	Rs./kWh	1.373
ECR for Oil	Rs./kWh	0.020
Energy Charge	Rs./kWh	1.393

The increase in fuel cost shall be recovered by CSPGCL as per Fuel Cost Adjustment specified in Regulation 67 of CSERC MYT Regulations, 2015.

6.6 Annual Fixed Charges

Regulations 34 and 35 of the CSERC MYT Regulations, 2015specify the components of Tariff and Annual Fixed Charges for Generation Stations as under:

"*34. COMPONENTS OF TARIFF*

34.1 The tariff for supply of electricity 1lom a thermal generating station shall comprise two parts, namely, capacity charge (for recovery of annual fixed cost consisting of the components specified in Regulation35) and energy charge (for recovery of fuel cost).

34.2. The tariff for supply of electricity from a hydro generating station shall comprise composite capacity charge and energy charge to be derived in the manner specified in Regulation 42, (consisting of the components referred in Regulation 35).

35. ANNUAL FIXED CHARGES

35.1 The annual fixed cost (AFC) of a generating station shall consist of the following components:

(a) Return on equity;

(b) Interest and finance charges;

(c) Depreciation;

(d) Interest on working capital;

(e) Operation and maintenance expenses;

Less:

(f) Non Tariff Income

NOTE:

Non-Tariff Income as specified in the Regulation 0, shall be subtracted from the sum of above (a to e) to arrive at AFC.

The SLDC charges shall be recovered in accordance with fees and charges determined in accordance with provisions of Chapter 8 of these regulations.

Pension & Gratuity Fund Contribution shall be recoverable in equal monthly installments as maybe determined by the Commission in the Tariff order.

The Statutory Taxes and Duties shall be recoverable on reimbursement basis, as per actual.

Provided that Depreciation, Interest and finance charges on Loan Capital, *Interest on Working Capital and Return on Equity for Thermal and Hydro Generating Stations shall be allowed in accordance with the provisions specified in Chapter 3 of these Regulations*.**"**

The Annual Fixed Charges for CSPGCL Generation Stations has been accordingly considered.

6.7 Additional Capitalisation and Means of Finance

CSPGCL's Submission

CSPGCL submitted that opening GFA for FY 2018-19 has been computed by addition of closing GFA for 2016-17 and estimated additional capitalization for FY 2017-18. Opening Equity & normative loan have also been derived in the similar manner considering closing value of 2016-17. The additional capitalization has been considered as per Regulation 19.1 of CSERC MYT Regulations 2015 up to cut off date and as per Regulation 19.2 (iii) for deferred works relating to ash pond or ash handling system beyond cut off date. For the additional capitalization, allowable debt equity ratio as per Regulations 17.1 has been considered. The capital cost and capital structure submitted by CSPGCL is shown in the following Table:

Table 31: Capital Structure for FY 2018-19 to FY 2020-21 as submitted by CSPGCL (Rs. Crore)

Particulars	FY 2018-19	FY 2019-20	FY 2020-21
Opening GFA	8630.58	8999.00	8999.00
Additional Capitalisation during year	368.42	-	-
Closing GFA	8,999.00	8,999.00	8,999.00
Loan Addition during the year	311.05	-	-
Opening Normative Equity	1,118.82	1,176.20	1,176.20
Equity addition during the year	57.38	0.00	0.00
Closing Equity	1,176.20	1,176.20	1,176.20

Commission's Views

The Commission in earlier Chapter of this Order has approved the Project cost for MTPP. Also, the Commission has approved additional capitalisation to be incurred by CSPGCL from COD of MTPP till cut-off date i.e., March 31, 2019. For the purpose of determination of ARR for FY 2018-19 to FY 2020-21, the Commission has considered the same additional capitalisation.

As regards the means of finance for such additional capitalisation, the Commission has considered the debt:equity ratio of 88:12 as approved in the previous Chapter of this Order.

In view of the above, the additional capitalisation considered by the Commission for FY 2018-19 to FY 2020-21 is shown in the following Table:

Table 32: Approved Additional Capitalisation for FY 2018-19 to FY 2020-21 (Rs. Crore)

Particulars	FY 2018-19	FY 2019-20	FY 2020-21
Additional Capitalisation	389.01	-	-
Means of Finance			
Debt amount	340.63	-	-
Equity amount	48.38	-	-
Grand total	389.01	-	-

6.8 Depreciation

CSPGCL's Submission

CSPGCL submitted that Depreciation has been computed as per Regulation 24.4 of CSERC MYT Regulations, 2015 by applying the schedule rates specified in the regulation.

CSPGCL further submitted that repayment of 90% loan in 60 quarterly equated instalments is not feasible through depreciation to be charged at rate less than 6%. At the same time factually, up to latest true up the actual repayment is lower than the accumulated depreciation. The applicable depreciation rate may change after finalization of capitalization & accounts. CSPGCL craved leave for additional submission in the course of proceedings / at the time of final true up or subsequent true up as the case may emerge. The Depreciation submitted by CSPGCL for FY 2018-19 to FY 2020-21 is shown in the following Table:

Table 33: Depreciation for FY 2018-19 to FY 2020-21 as submitted by CSPGCL (Rs. Crore)

Particulars	FY 2018-19	FY 2019-20	FY 2020-21
Opening GFA	8630.58	8999.00	8999.00
Additional Capitalization	368.42	-	-
Closing GFA	8999.00	8999.00	8999.00
Average GFA	8814.79	8999.00	8999.00
Weighted Average rate of Depreciation	5.34%	5.34%	5.34%
Depreciation	470.79	480.63	480.63
Addl. Depreciation	0.00	0.00	44.75
Total depreciation for the year	**470.79**	**480.63**	**525.38**

Commission's Views

Regulation 24 of MYT Regulations, 2015 specifies as under:

"24. DEPRECIATION

24.1. The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission:

Provided that the capital cost shall not include funds from grant or consumer contribution or deposit works received for funding of fixed asset as specified in Regulation 21.

24.2. The salvage value of the asset except for IT equipments and software used for SLDC business shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.

Provided that, the salvage value for IT equipments and Software shall be considered as NIL and 100%value of the assets shall be considered depreciable.

24.3. Land other than the land held under lease and the land for reservoir in case of hydro generating station and the land for ash-bund for thermal power stations shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

24.4. Depreciation shall be calculated annually based on Straight Line Method and at rates as specified in Appendix-I to these regulations for the assets of the generating station, transmission system, distribution system and SLDC:

Provided that the remaining depreciable value as on 31stMarch of the year closing after a period of 15 years from date of commercial operation shall be spread over the balance useful life of the assets:

In case of the existing projects, the balance depreciable value as on 01.04.2016 shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to 31.03.2016 from the gross depreciable value of the assets.

Provided that in those cases where the capital investment plan has been approved by the Commission and the depreciation rates as provided in these Regulations are insufficient for the *repayment of loan, the rate of depreciation shall be decided by the Commission at the time of issuance of tariff order, subject to prudence check.*

… … …

24.6. Depreciation shall be chargeable from the first year of commercial operation. The depreciation shall be computed on the average asset base during the year:

Provided for the new generating station or unit, the depreciation shall be charged on pro-rata basis during the year the asset has been declared under commercial operation. For subsequent years, the depreciation shall be computed on the average asset base during the year."

The Commission has computed Depreciation for FY 2018-19 to FY 2020-21 in accordance with the above said Regulations. The weighted average rate of Depreciation of 5.34% has been computed as per Regulation 24 of CSERC MYT Regulations based on actual GFA. The Commission has considered the opening GFA for FY 2018-19 after taking into account the closing GFA for FY 2015-16 and approved additional capitalisation for subsequent years.

Further, as regards the additional depreciation claimed by CPSGCL in accordance to the 3rd proviso of Regulation 24.4 of CSERC MYT Regulations, 2015, Commission is in view that such additional depreciation will be allowed only after prudence check based on actual capitalisation and payment of repayment of loan at the time of truing up.

The depreciation approved by the Commission for FY 2018-19 to FY 2020-21 for MTPP is shown in the following Table:

Table 34: Approved Depreciation for FY 2018-19 to FY 2020-21 (Rs. Crore)

Particulars	**FY 2018-19**	**FY 2019-20**	**FY 2020-21**
Opening GFA	8,503.49	8,892.50	8,892.50
Additional Capitalization	389.01	-	-
Closing GFA	8,892.50	8,892.50	8,892.50
Average GFA	8,698.00	8,892.50	8,892.50
Weighted Average rate of Depreciation	5.34%	5.34%	5.34%
Depreciation	**464.67**	**475.06**	**475.06**

6.9 Return on Equity

CSPGCL's Submission

CSPGCL submitted that it has computed Return on equity as per Regulation 22 of CSERC MYT Regulations, 2015, on pre-tax basis at the base rate of 15.50% grossed up with MAT (@21.342 %) on permissible equity. The RoE submitted by CSPGCL for FY 2018-19 to FY 2020-21 is shown in the following Table:

Table 35: RoE for FY 2018-19 to FY 2020-21 as submitted by CSPGCL (Rs. Crore)

Particulars	FY 2018-19	FY 2019-20	FY 2020-21
Opening Normative Equity	1,118.82	1,176.20	1,176.20
Equity addition during the year	57.38	0.00	0.00
Closing Equity	1,176.20	1,176.20	1,176.20
Return on Equity (with MAT)	19.705%	19.705%	19.705%
Return on Equity	226.12	231.78	231.78

Commission's Views

Regulation 22 of the MYT Regulations, 2015specifies as under:

"22. RETURN ON EQUITY

22.1 Generation, Transmission and SLDC: Return on equity shall be computed in rupee terms on the equity base determined in accordance with Regulation 17. Return on equity shall be computed on pre-tax basis at the base rate of 15.5% to be grossed up as per Regulation 22.3 of these Regulations.

… … …

22.3. The rate of return on equity for each year of the control period shall be computed by grossing up the base rate with the prevailing MAT rate of the base year:

Provided that return on equity with respect to the actual tax rate applicable to the generating company or the transmission licensee or distribution licensee, as the case may be, in line with the provisions of the relevant Finance Acts of the respective year during the Control Period shall be trued up separately for each year of the Control period. In case, no tax is payable during the financial year, the tax rate for the purpose of truing up shall be taken as nil.

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

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

where, 't' is the applicable tax rate in accordance with regulation 22.3 of these regulations.

Provided that if there is a loss incurred by the generating company or the transmission licensee or distribution licensee or SLDC, as the case may be, in the previous year and based on the prudence check made by the Commission, the Minimum Alternate Tax may not be considered in such a case while determining the return on equity."

The Commission has computed the RoE for MTPP for FY 2018-19 to FY 2020-21 in accordance with the above said Regulations. The opening equity for FY 2018-19 has been considered after taking into account closing equity for FY 2015-16 approved in the Order and addition of equity towards additional capitalisation approved in this Order.

Further, return of 15.5% has been considered on the average permissible equity base during the year as per CSERC MYT Regulations, 2015. As mentioned during the true-up for FY 2015-16, CSPGCL has not paid any Income Tax for FY 2015-16. Hence, the rate of RoE has not been grossed up with the MAT rate, and the RoE rate of 15.50% has been considered for the purpose of approving RoE. In case CSPGCL actually pays Income Tax for any year, then the rate of RoE shall be appropriately grossed up at the time of truing up for that year.

RoE approved by the Commission for MTPP for FY 2018-19 to FY 2020-21 is shown in the following Table:

Table 36: Approved RoE for FY 2018-19 to FY 2020-21 (Rs. Crore)

Particulars	FY 2018-19	FY 2019-20	FY 2020-21
Opening Normative Equity	1,057.58	1,105.96	1,105.96
Equity addition during the year	48.38	-	-
Closing Equity	1,105.96	1,105.96	1,105.96
Return on Equity	15.50%	15.50%	15.50%
Return on Equity	**167.67**	**171.42**	**171.42**

6.10 Interest Charges

CSPGCL's Submission

Interest & finance charges on loan capital has been computed as per the Regulation-23 of CSERC MYT Regulations, 2015. Further, CSPGCL submitted that, as per Regulation 23.8 of CSERC MYT Regulations, 2015, the benefit of loan restructuring is to be shared between beneficiaries & CSPGCL in the ratio 2:1. CSPGCL has computed the interest charges accordingly. The Interest Charges submitted by CSPGCL for FY 2018-19 to FY 2020-21 is shown in the following Table:

Table 37: Interest Charges for FY 2018-19 to FY 2020-21 as submitted by CSPGCL (Rs. Crore)

Particulars	FY 2018-19	FY 2019-20	FY 2020-21
Opening Net Normative Loan	6,761.50	6,601.76	6,121.13
Repayment during the period	470.79	480.63	525.38
Increase/Decrease in normative loan during the Year	311.05	-	-
Closing Net Normative Loan	6,601.76	6,121.13	5,595.76
Average Loan during the year	6,681.63	6,361.45	5,858.44
Weighted Average Interest Rate	11.07%	11.07%	11.07%
Interest Expense for the Period	739.43	704.00	648.33
Finance and Other Charges	-	-	-
Total Interest Expenses	**739.43**	**704.00**	**648.33**

Commission's Views

Regulation 23 of CSERC MYT Regulations, 2015 specifies the method of computation of interest and finance charges for loan capital. The Commission has considered the opening net normative loan by considering the closing net normative loan for FY 2015-16 approved in this Order, subsequent addition of normative loan towards additional capitalisation approved in this Order and normative repayment equal to depreciation for such year.

As per Regulation 23.5 of CSERC MYT Regulations, 2015, the rate of interest shall be weighted average rate of interest calculated on the basis of actual loan portfolio at the beginning of year. The weighted average rate of interest computed on the basis of estimated actual loan portfolio as on April 1, 2017 has been accepted. Accordingly, the Commission has considered the Interest rate of 10.10% for computation of Interest charges.

As regards the re-financing of existing loans for MTPP, the Commission sough the details of offer submitted by State Bank of India and counter offer submitted by M/s. PFC. CSPGCL submitted that in case the offer of SBI would have been accepted, then prepayment charges were 2.50% and 2.75% as per terms and conditions of existing lender, PFC and REC, respectively. At discounted rate over the balance loan term, the effective loading was about to 0.55%. Further, SBI offer was at monthly rest, while existing lender’s offers were at quarterly rest, which practically implies 0.1% additional discounting on PFC and REC rates. Hence, re-financing from PFC was found to be beneficial and accordingly, the same was adopted. The Commission has gone through the offer of PFC adopted by CSPGCL for re-financing of loan for MTPP. The Commission observes that the offer accepted by CSPGCL is more beneficial. The Commission accepted the revision of rate of interest for MTPP loan to 10.10%. This revised interest rate is effective from October 2016 as per Note 4.1 of audited accounts for FY 2015-16.

Further, as per Regulation 23.8, the savings of re-financing shall be shared between the beneficiaries, i.e., CSPDCL, and CSPGCL in the ratio of 2:1. The Commission accepts the methodology of sharing of savings proposed by CSPGCL. Accordingly, net savings have been computed separately and allowed in addition to Interest and finance charges. Further, the Commission notes that CSPGCL confirmed that no additional cost has been incurred by CSPGCL for re-financing of loan, hence, the same has not been considered.

For the purpose of this Order, the Commission provisionally approves the net savings on account of re-financing of loan for the period from FY 2018-19 to FY 2020-21, considering the pending final true-up for FY 2016-17. From the perusal of PFC loan sheets submitted by CSPGCL, the weighted average rate of interest for outstanding loan as on September 30, 2016 computed as 12.86%. Accordingly, net savings in interest rate is 2.76%. The Commission has computed the net savings after considering net savings in interest rate on average net normative loan for respective year.

The Interest Charges approved by the Commission for FY 2018-19 to FY 2020-21 is shown in the following Table:

Table 38: Approved Interest Charges for FY 2018-19 to FY 2020-21 (Rs. Crore)

Particulars	FY 2018-19	FY 2019-20	FY 2020-21
Opening Net Normative Loan	**6,631.49**	**6,507.44**	**6,032.38**
Repayment during the period	464.67	475.06	475.06
Increase/Decrease in normative loan	340.63	-	-

Particulars	FY 2018-19	FY 2019-20	FY 2020-21
during the Year			
Closing Net Normative Loan	**6,507.44**	**6,032.38**	**5,557.32**
Average Loan during the year	6,569.46	6,269.91	5,794.85
Weighted Average Interest Rate	10.10%	10.10%	10.10%
Interest Expense for the Period	663.52	633.26	585.28
Finance and Other Charges	-	-	-
Net savings on account of re-financing	60.47	57.72	53.34
Total Interest Expenses	**723.99**	**690.98**	**638.62**

6.11 O&M Expenses

CSPGCL's Submission

CSPGCL submitted that the normative O&M expenses (including impact of wage revision) for Marwa TPP have been computed based on the values considered by the Commission for 1x500 MW KWTPP in MYT order. The O&M Expenses submitted by CSPGCL for FY 2018-19 to FY 2020-21 is shown in the following Table:

Table 39: O&M Expenses for FY 2018-19 to FY 2020-21 as submitted by CSPGCL (Rs. Crore)

Particulars	FY 2018-19	FY 2019-20	FY 2020-21
O&M Expenses	233.27	252.31	272.89

Commission's Views

For the Units/generating stations commissioned after April 1, 2010, Regulation 38.5.1.1 of CSERC MYT Regulations, 2015 specifies the norm for O&M Expenses, as reproduced below:

"38.5.1.1 The O&M expenses for the base year i.e. FY 2015-16, for the units / stations coming into commercial operation after 01.04.2010, shall be considered as under:-

a) The normative O&M expenses as specified in the Central Electricity Regulatory

Commission (Terms and Conditions of Tariff) Regulation 2009 for the FY 2010-11 and shall be admissible at the rate of90% of the value allowed by CERC for the respective year.

Such normative value shall be exclusive of water taxes payable to the State government which shall be pass though to the *beneficiary on actual basis. However, except for pension fund liabilities, normative value, so derived, shall be considered inclusive of al) expenses incurred to meet head office or holding company expenses.*

b) *The adjusted value for FY 2010-11, as arrived above, shall be escalated by the actual inflation at a weighted average of 60:40 of CPI:WPI ratio, respectively on year to year basis till FY 2014- 15.*

c) *For projecting the normative value for FY 2015-16 and onwards, average inflation of last five years (i.e. FY 2010-11 to FY 2014-15) shall be applied.*

Provided, at the time of true up, the normative O&M cost shall be readjusted to take into account the effect of actual inflation for that period.

Provided, further that impact of pay revision (including arrears), if any, shall be considered separately during the true-up as per accounts, subject to prudence check and any other factor considered appropriate by the Commission."

In view of the above, the Commission in MYT Order dated April 30, 2016 has determined the O&M Expenses for Korba West TPP. CSPGCL has considered the O&M expenses on the similar lines. Further, the Commission notes that in MYT Order dated April 30, 2016, it has considered the escalation factor of 8.14%, computed based on CPI and WPI for the period from FY 2010-11 to FY 2014-15. Since, now the CPI and WPI data is available till FY 2016-17 and the same have been used by the Commission in Tariff Order for FY 2018-19 for approval of O&M expenses for Korba West TPP.

In light of foregoing, for the purpose of determination of O&M expenses for MTPP, the Commission has considered the escalation factor of 5.66%, computed based on CPI and WPI data for the period from FY 2012-13 to FY 2016-17. Further, normative value of FY 2015-16, computed as per above said regulations, has been escalated by such inflation factor to arrive at normative value for each year from FY 2017-18 onwards.

As per the CSERC MYT Regulations, 2015, the water charges will be pass through on reimbursement basis and the impact of pay revision (including arrears) will be allowed on actual during the true-up as per the audited/un-audited accounts, subject to the prudence check and any other factor considered appropriate.

Further, normative O&M expenses will be re-adjusted to take into account the effect of actual inflation for that period.

The O&M Expenses approved by the Commission for MTPP for FY 2018-19 to FY 2020-21 is shown in the following Table:

Table 40: Approved O&M Expenses for FY 2018-19 to FY 2020-21 (Rs. Crore)

Particulars	FY 2018-19	FY 2019-20	FY 2020-21
O&M Expenses	197.18	208.34	220.14

Further, the Commission notes that it has considered the Impact of wage revision (Interim relief) for Control period in MYT Order dated April 30, 2016. In similar manner, the Commission has separately considered the Impact of Wage revision over and above normative O&M expenses for MTPP for FY 2018-19 to FY 2020-21 same as approved for KWTPP in MYT Order. Accordingly, the Commission approves the impact of wage revision of Rs. 6.36 Crore for FY 2018-19, Rs. 6.94 Crore for FY 2019-20 and Rs. 7.56 Crore for FY 2020-21.

6.12 Interest on Working Capital

CSPGCL's Submission

CSPGCL has calculated the normative Interest on Working Capital (IoWC) as per Regulation 25 of CSERC MYT Regulation, 2015. Interest rate equal to the Base rate of State Bank of India as on 30 September, 2017 plus 350 basis points. The IoWC submitted by CSPGCL for FY 2018-19 to FY 2020-21 is shown in the following Table:

Table 41: IoWC for FY 2018-19 to FY 2020-21 as submitted by CSPGCL (Rs. Crore)

Particulars	FY 2018-19	FY 2019-20	FY 2020-21
Cost of Coal (1.5 month)	109.01	109.31	109.01
Cost of Oil (2 months)	1.82	1.82	1.82
O&M Expenses (1 months)	19.44	21.03	22.74
Maintenance spares (40% of R&M Exp)	37.3	40.4	43.7
Receivables (1 month)	218.61	218.95	219.79
Total Working Capital Requirement	386.20	391.48	397.016.29
Rate of interest for working capital	12.50%	12.50%	12.50%
Interest on Working Capital	**48.28**	**48.93**	**49.63**

Commission's Views

The IoWC has been computed in accordance with Regulation 25 of the MYT Regulations, 2015. The interest rate of 12.50% (SBI Base Rate of 9.00% plus 350 basis points) has been considered, for computing the Interest on Working Capital.

The IoWC approved by the Commission for FY 2018-19 to FY 2020-21 is shown in the following Table:

Table 42: Approved IoWC for FY 2018-19 to FY 2020-21 (Rs. Crore)

Particulars	FY 2018-19	FY 2019-20	FY 2020-21
Cost of Coal (1.5 month)	109.01	109.31	109.01
Cost of Oil (2 months)	1.82	1.82	1.82
O&M Expenses (1 months)	16.96	17.94	18.97
Maintenance spares (40% of R&M Exp)	32.57	34.44	36.43
Receivables (1 month)	209.30	209.09	205.73
Total Working Capital Requirement	369.65	372.61	371.96
Rate of interest for working capital	12.50%	12.50%	12.50%
Interest on Working Capital	**46.21**	**46.58**	**46.49**

6.13 Non-tariff Income

CSPGCL's Submission

CSPGCL submitted that being a new plant lot of construction material will have to be written off after cut-off date. The sale of scrap would result into loss on the face value with average depreciation @ 5.34%. CSPGCL further submitted that it may not be prudent at this stage to project negative non- tariff income. Hence, no Non tariff Income has been projected for FY 2018-19 to FY 2020-21.

Commission's View

The Commission has not considered any Non-tariff income for MTPP for FY 2018-19 to FY 2020-21.

6.14 Contribution to Pension Fund

CSPGCL's Submission

CSPGCL submitted that Regulation 32 of CSERC MYT Regulations, 2015 relates to Pension trust contribution. The Commission in the Tariff Order dated April 30, 2016 has decided the plant wise, year-wise contribution for Pension & Gratuity fund.

CSPGCL considered the Contribution to Pension fund as Rs. 20.86 Crore for FY 2018-19, Rs. 22.75 Crore for FY 2019-20 and Rs. 24.81 Crore for FY 2020-21. CSPGCL further submitted that it may be allowed to recover the same by way of monthly pass through as line item as has been allowed for other plants of CSPGCL.

Commission's View

The Commission approves the Contribution to Pension Fund for MTPP as approved in MYT Order dated April 30, 2016. Accordingly, the Commission approves the Contribution to Pension fund as Rs. 20.86 Crore for FY 2018-19, Rs. 22.75 Crore for FY 2019-20 and Rs. 24.81 Crore for FY 2020-21.

6.15 Statutory Charges

CSPGCL's Submission

CSPGCL submitted that it incurs statutory charges in course of its operations. The payment of CSERC fee is one-time payment and as per regulation it is a pass through. It is a standard practice that the statutory charges or any other kind of imposition(s) whatsoever imposed/charged by any Government (Central/State) and/or any other local body/ authority/ regulatory authority in relation to generation of electricity (including auxiliary consumption) including water, transmission of electricity, environmental protection, sale or on supply of power/ energy and/ or in respect of any of its installations associated with Generating Stations and/ or on associated system are a pass through to the beneficiary. CSPGCL further submitted that Corporate Social Responsibility (CSR) provisions have been introduced in the new Companies Act, 2013. At present no such claim has been incorporated, however leave is craved for pass through of such expenses in case any such liability arises on account of statutory provisions in the Company Act.

Commission's View

As regard the applicability of the statutory charges, CSERC MYT Regulations, 2015 specifies as under:

(a) Regulation 35.1 specifies that the Statutory Taxes and Duties shall be recoverable on reimbursement basis, as per actual.

(b) Further, Regulation 38.5.1(f) specifies that water charges shall be pass through in tariff on reimbursement basis.

In view of the above Regulations, Statutory charges such as duty & cess (if any), water charges, SLDC charges etc shall be recoverable from CSPDCL on reimbursement basis, as per actual. Similarly, the expenses incurred by CSPGCL for start-up power, shall be billed to CSPDCL separately in the same manner as statutory and other charges, and shall be reimbursed by CSPDCL.

As regards charges towards CSR activities, the Companies have to incur the same from their net profits, and the same cannot be passed through to the consumers.

6.16 Summary of ARR for FY 2018-19 to FY 2020-21

Based on various components of expense and income discussed above, summary of ARR for FY 2018-19 to FY 2020-21 is given in the following Tables. The impact of wage revision and Contribution to Pension and Gratuity has not been considered as part of Annual Fixed Cost, however, the same shall be billed and allowed separately.

Table 43: Approved ARR for MTPP for FY 2018-19 to FY 2020-21 (Rs. Crore)

Particulars	FY 2018-19		FY 2019-20		FY 2021-21	
	Petition	Approved	Petition	Approved	Petition	Approved
Annual Fixed Charges						
Depreciation	470.79	464.67	480.63	475.06	525.38	475.06
Interest & Finance Charges	739.43	723.99	704.00	690.98	648.33	638.62
Return on Equity	226.12	167.67	231.78	171.42	231.78	171.42
O&M Expense	233.27	203.54	252.31	215.28	272.89	227.70
Interest on Working Capital	48.28	46.21	48.93	46.58	49.63	46.49
Less: Non-Tariff Income	-	-	-	-	-	-
Total Annual Fixed Charges	**1,717.89**	**1,606.08**	**1,717.65**	**1,599.32**	**1,728.00**	**1,559.30**
Contribution to Gratuity/Pension Fund	20.86	20.86	22.75	22.75	24.81	24.81

6.17 Generation Tariff for FY 2018-19 to FY 2020-21

The Commission approves the following Generation Tariff for MTPP for FY 2018-19 to FY 2020-21:

Table 44: Approved Generation Tariff for FY 2018-19 to FY 2020-21

Particulars	FY 2018-19	FY 2019-20	FY 2020-21
Annual Fixed Charges (Rs. Crore)	1,606.08	1,599.32	1,559.30
Contribution to Pension Fund (Rs. Crore)	20.86	22.75	24.81
Energy Charges (Rs./kWh)	1.393	1.393	1.393

6.18 Billing for FY 2018-19 to FY 2020-21

The Commission directs CSPGCL to bill beneficiary of Marwa TPP as per Generation Tariff approved in this Order. The Order will be applicable from 1st July, 2018 and will remain in force till March 31, 2021 or till the issue of next Tariff Order, whichever is later. For FY 2018-19 as the order will be applicable w.e.f 1st July, 2018, the AFC will be adjusted on pro-rata basis and the billing format shall also be applied accordingly for remaining nine months.

7 ANNEXURES

7.1 Annexure 1 - List of persons who are present & submitted comments during the date of hearing

(1) Chief General Manager, IPC & RAC, Hyderabad

(2) Shri Shyam Kabra

(3) Shri Raja Ahmed

(4) Shri Ramesh Warlyani

7.2 Annexure 2 - List of persons who filed written submissions

(1) Chief General Manager, IPC & RAC, Souther Power Distribution Co. of Telangana Limited, Hyderabad

(2) Shri M.Thimma Reddy, Convener, People's Monitoring Group on Electricity Regulation, Hyderabad

(3) Shri Shyam Kabra, Chairman, Power Subcommittee, Urla Industries Association, Raipur

(4) Shri Raj Kumar Gupta, Durg

(5) Shri Raja Ahmed, Supela, Bhilai

(6) Shri Ramesh Warlyani, Ex-MLA, Raipur