

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 180/GT/2015

**Coram:
Shri A.S. Bakshi, Member
Dr. M.K. Iyer, Member**

Date of Order : 17.2.2017

In the matter of:

Approval of tariff for Chandrapura Thermal Power Station Units 7 and 8 (2x250 MW) for the period from 1.4.2014 to 31.3.2019.

And in the matter of

Damodar Valley Corporation,
DVC Towers, VIP Road
Kolkata

.....**Petitioner**

Versus

1. Delhi Transco Limited
 - a. BSES Rajdhani Power Ltd.
PMG Office, 2nd Floor, B- Block, BSES Bhawan
Nehru Place, New Delhi- 110 019
 - b. BSES Yamuna Power Ltd.
2nd Floor, A- Block, Shakti Kiran Building,
Karkardooma, Delhi- 110 0092
 - c. Tata Power Delhi Distribution Ltd.
(Erstwhile North Delhi Power Ltd.)
Grid Substation Building, Hudson Lines,
Kingsway Camp, Delhi- 110 009

2. M.P. Power Management Company Ltd.
Shakti Bhawan, MPSEB Colony, Rampur,
Jabalpur, Madhya Pradesh-482008

..... **Respondents**

Parties present:



For Petitioner: Shri M.G. Ramachandran, Advocate, DVC
Ms. Poorva Saigal, Advocate, DVC
Ms. Anushree Bardhan, Advocate, DVC
Shri Subrata Ghosal, DVC
Shri Pulak Bhattacharya, DVC

For Respondents Shri S. Lazaris, MPPMCL
Shri Rajiv Yadav, Advocate, DVPCA

ORDER

This petition has been filed by the petitioner, Damodar Valley Corporation (DVC), for approval of tariff of Chandrapura Thermal Power Station, Unit 7 and Unit 8 (2x250 MW) (hereinafter referred to as "the generating station") for the period 2014-19 in accordance with the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as "the 2014 Tariff Regulations").

2. The petitioner is a statutory body established by the Central Government under the Damodar Valley Corporation Act, 1948 (hereinafter referred to as the 'DVC Act') for the development of the Damodar Valley, with three participating Governments, namely, the Central Government, the Government of West Bengal and the Government of Jharkhand. The date of commercial operation of the different units of this generating station is as under:-

Unit - 8 :	July 15, 2011
Unit - 7 :	November 2, 2011

3. In Petition No. 196/GT/2013 filed by the petitioner for determination of tariff of the generating station for the period from dates of commercial operation of Unit 7 and Unit 8 to 31.3.2014, the Commission vide order dated 12.3.2015 had determined the annual



fixed charges of the generating station based on actual additional capital expenditure incurred for the years 2011-12 and 2012-13 and projected additional capital expenditure for the years 2013-14. Thereafter, the Commission, vide order dated 9.2.2017 in Petition No. 181/GT/2015, had revised the annual fixed charges of the generating station for the period 2009-14 after truing-up exercise in terms of Regulation 6(1) of the 2009 Tariff Regulations, as summarized under:-

(₹ in lakh)

	Unit-8	Units- 7 and 8		
	15.7.2011 to 1.11.2011	2.11.2011 to 31.3.2012	2012-13	2013-14
Depreciation	7636.17	15106.10	15522.25	16268.93
Interest on Loan	7222.82	14817.18	14010.91	12784.37
Return on Equity	4918.03	9729.00	12521.72	10325.29
Interest on Working Capital	1565.84	3444.62	3518.41	3498.12
O&M Expenses	5085.00	10170.00	10755.00	11370.00
Cost of secondary fuel oil (for coal-based fired generating stations only)	665.53	1947.26	1941.94	1941.94
Sub-Total	27093.38	55214.16	58270.22	56188.65
Common Office Expenditure	70.38	140.75	112.83	87.07
Additional O&M on account of Mega insurance, CISF security and Share of subsidiary activities	186.39	511.72	1226.59	1288.87
Pension & Gratuity Contribution	0.00	0.00	0.00	0.00
Sinking Fund Contribution	0.00	0.00	1247.87	2072.60
Adjustment of secondary fuel oil	234.80	267.48	95.78	(-)50.50
Sub-Total	491.56	919.96	2683.06	3398.04
Total Annual Fixed Charges	27584.94	56134.11	60953.28	59586.68

Note: All figures are on annualized basis

4. The annual fixed charges determined vide orders dated 9.2.2017 are subject to the final outcome of the Civil Appeals pending before the Hon'ble Supreme Court in respect



of the determination of tariff of the generating stations and inter-state transmission systems of the petitioner by the Commission for the periods 2009-14.

5. The petitioner, vide affidavit dated 7.7.2015, has sought approval of tariff of the generating station for the period 2014-19 in accordance with the provisions of the 2014 Tariff Regulations. Accordingly, the capital cost and the annual fixed charges claimed by the petitioner for the period 2014-19 are as under:

Capital Cost

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	223679.34	223785.81	223834.08	224799.54	224819.41
Additional capital expenditure	234.00	153.00	1874.00	94.00	104.00
De-capitalization during the year/ period	127.52	104.74	908.54	74.13	79.00
Closing Capital Cost	223785.81	223834.08	224799.54	224819.41	224844.41
Average Capital Cost	223732.58	223809.95	224316.81	224809.48	224831.91

Annual Fixed Charges

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	16392.26	16397.93	16435.06	16471.16	16472.80
Interest on Loan	11295.83	9612.01	7898.54	6252.05	4383.44
Return on Equity	13162.49	13167.04	13196.86	13225.84	13227.16
Interest on Working Capital	4998.23	5083.12	5100.83	5124.00	5177.47
O&M Expenses	11950.00	12700.00	13500.00	14350.00	15255.00
Compensation Allowance	0.00	0.00	0.00	0.00	0.00
Capital Spares	0.00	0.00	0.00	0.00	1500.00
Sub-Total	57798.80	56960.09	56131.30	55423.06	56015.89
Pension & Gratuity Contribution	2880.29	6018.62	6018.62	6018.62	6018.62
Common office expenditure	104.38	97.32	124.00	181.95	206.17
Additional O&M Expenses	319.56	364.15	433.12	490.26	521.17
Contribution to sinking fund	2217.68	2372.92	2539.02	2716.75	2906.92
Sub-Total	5521.92	8853.01	9114.76	9407.59	9652.88
Total	63320.72	65813.11	65246.07	64830.64	65668.77



6. In compliance with the directions of the Commission, the petitioner has filed additional information and has served copies on the respondents. The Respondent, Madhya Pradesh Power Management Co. Ltd. (MPPMCL) has filed replies and the petitioner has also filed its rejoinder to the said replies. Taking into consideration the submissions of the parties and the documents available on record, we proceed to consider the claims of the petitioner and determine the tariff of this generating station for the period 2014-19 as stated in the subsequent paragraphs.

Capital cost as on 1.4.2014

7. Clause (1) of Regulation 9 of the 2014 Tariff Regulations provides that the capital cost as determined by the Commission after prudence check, in accordance with this regulation shall form the basis of determination of tariff for existing and new projects.

Clause 3 of Regulation 9 of the 2014 Tariff Regulations provides as under:

“The Capital cost of an existing project shall include the following:

(a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;

(b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and

(c) expenditure on account of renovation and modernization as admitted by this Commission in accordance with Regulation 15.”

8. The respondent, MPPMCL has pointed out that the petitioner has claimed opening capital cost of ₹223679.34 lakh and submitted that as per Regulation 9 (3) of the 2014 Tariff Regulations, the capital cost of existing project shall be the cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability if any, as on 1.4.2014.



Accordingly MPPMCL has prayed to consider the capital cost as admitted by the Commission for computation of tariff. It has further submitted that as per order dated 12.03.2015 in Petition No. 196/GT/2013, the admitted capital cost as on 31.3.2014 was ₹215958.60 lakh on basis of projected additional capital expenditure and hence the same may be considered for computation of tariff after disallowing liabilities and CWIP. The petitioner has objected to the above and has submitted that the closing capital cost based on truing up for period 2009-14 would be the opening capital cost as on 1.4.2014.

9. The matter has been examined. It is observed that the annual fixed charges claimed by the petitioner are based on opening capital cost of ₹223679.34 lakh as on 1.4.2014. The Commission vide its order dated 9.2.2017 in Petition No. 181/GT/2015 had revised the tariff of the generating station for the period 2009-14 after truing up and admitted as closing capital cost of ₹ 223108.23 lakh as on 31.3.2014. In accordance with Clause 3 of Regulation 9 of the 2014 Tariff Regulations, the capital cost admitted by the Commission as on 31.3.2014 is to be considered as opening capital cost for the period 2014-19. Accordingly, the admitted closing capital cost of ₹ 223108.23 lakh as on 31.3.2014 in order dated 9.2.2017 has been considered as the opening capital cost as on 1.4.2014.

Projected Additional Capital Expenditure

10. Regulation 14 (3) of the 2014 Tariff Regulations provides as under:

“14.(3) The capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be incurred on the following counts after the cut-off date, may be admitted by the Commission, subject to prudence check:

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



(ii) Change in law or compliance of any existing law;

(iii) Any expenses to be incurred on account of need for higher security and safety of the plant as advised or directed by appropriate Government Agencies of statutory authorities responsible for national security/internal security;

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

(v) Any liability for works executed prior to the cut-off date, after prudence check of the details of such un-discharged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.;

(vi) Any liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;

(vii) Any additional capital expenditure which has become necessary for efficient operation of generating station other than coal / lignite based stations or transmission system as the case may be. The claim shall be substantiated with the technical justification duly supported by the documentary evidence like test results carried out by an independent agency in case of deterioration of assets, report of an independent agency in case of damage caused by natural calamities, obsolescence of technology, up-gradation of capacity for the technical reason such as increase in fault level;

(viii) In case of hydro generating stations, any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the generating company) and due to geological reasons after adjusting the proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation;

(ix) In case of transmission system, any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement due to obsolescence of technology, replacement of switchyard equipment due to increase of fault level, tower strengthening, communication equipment, emergency restoration system, insulators cleaning infrastructure, replacement of porcelain insulator with polymer insulators, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system; and

(x) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receiving system arising due to non-materialization of coal supply corresponding to full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station:

Provided that any expenditure on acquiring the minor items or the assets including tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers,



computers, fans, washing machines, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for additional capitalization for determination of tariff w.e.f. 1.4.2014:

11. Further, the petitioner has also claimed additional capitalisation by invoking Regulations 54 and 55 of the 2014 Tariff Regulations provides as under:

“54. Power to Relax:

The Commission, for reasons to be recorded in writing, may relax any of the provisions of these regulations on its own motion or on an application made before it by an interested person.

55. Power to Remove Difficulty:

If any difficulty arises in giving effect to the provisions of these regulations, the Commission may, by order, make such provision not inconsistent with the provisions of the Act or provisions of other regulations specified by the Commission, as may appear to be necessary for removing the difficulty in giving effect to the objectives of these regulations.”

12. The break-up of the projected additional capital expenditure claimed by the petitioner for the period 2014-19 is detailed as under:

(₹ in lakh)						
Sr. No.	Head of Works/ Equipment	2014-15	2015-16	2016-17	2017-18	2018-19
1	Fire Extinguisher	20.00	14.00	15.00	15.00	25.00
2	Main Control Room DCS work station (MAX D.N.A. System) BHEL,EDN	64.00	64.00	64.00	64.00	64.00
3	Ash Panel PLC System,(G. Fannuc)	15.00	15.00	15.00	0.00	0.00
4	CHP PLC Work station (Rockwell)	30.00	15.00	15.00	15.00	15.00
5	Online pollution parameter measurement from discharge of effluent treatment plant (PH,TSS,BOD,COD)	25.00	0.00	0.00	0.00	0.00
6	Renovation of railway siding	50.00	0.00	0.00	0.00	0.00
7	New Road Weighbridge	15.00	0.00	0.00	0.00	0.00
8	Rail Static Weighbridge at wagon tippers	0.00	30.00	0.00	0.00	0.00
9	D.M. Plant PLC Work station(G. Fannuc)	15.00	15.00	15.00	0.00	0.00
10	Dyke raising of Ash Ponds at DVC, CTPS.	0.00	0.00	1000.00	0.00	0.00



Sr. No.	Head of Works/ Equipment	2014-15	2015-16	2016-17	2017-18	2018-19
11	Procurement of Cuplock Scaffolding for Boiler	0.00	0.00	250.00	0.00	0.00
12	Procurement of 1200HP locomotive	0.00	0.00	500.00	0.00	0.00
	Sub-total	234.00	153.00	1874.00	94.00	104.00

13. The respondent, MPPMCL has submitted that the petitioner has claimed additional capital expenditure for Main control room DCS work station (MAX D.N.A. System), ash panel PLC system (G. Fannue), CHP PLC work station, DM Plant PLC Work station dyke raising of ash pond, procurement of cuplock scaffolding for boiler and 1200 HP locomotive without any proper justification. It has therefore submitted that these expenses are not allowable in accordance with the Regulation 14(3) of the 2014 Tariff Regulations and thus are liable to be rejected. The respondent has further submitted that the argument of the petitioner for consideration of these expenses in exercise of the inherent power of "Power to Relax" under Regulation 54 is objectionable and liable to be rejected. In response, the petitioner has submitted that except one item of additional capital expenditure, viz. online pollution parameter measurement from discharge of effluent treatment plant, no other item could be procured during the years 2014-15 and 2015-16. The petitioner has further submitted that although the subject item was not within the original scope of the project, procurement action for the same was required to be initiated in compliance with the directive of the Pollution Control Board. The claims of the petitioner are examined as under:-



Fire Extinguisher

14. The petitioner has claimed gross additional capital expenditure with corresponding de-capitalization towards Fire Extinguisher under Regulation 14(3)(ii) of the 2014 Tariff Regulations for the years 2014-15 to 2018-19 as under:-

<i>(₹ in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
20.00	14.00	15.00	15.00	25.00

15. The petitioner has submitted that the fire extinguishers of different kind and capacity are required to be deployed against replacement as well as for new requirement in order to protect the plant from fire hazard. The petitioner has further submitted that for protection of switch yard, 2 nos. of high capacity trailer mounted DCP fire extinguishers are required for fresh deployment.

16. The petitioner was directed to submit justification as to whether such works were envisaged in the original scope of work and if not, the petitioner was directed to provide justification for taking up this work during the period 2014-19, i.e. after the cut-off date. In response, the petitioner has submitted that the procurement action for Fire Extinguisher, as claimed in the petition on projected basis, could not be taken up during the year 2014-15 due to shortage of fund as well as for other procedural delay.

17. The respondent, MPPMCL has submitted that the petitioner has claimed additional capitalization towards Fire Extinguisher amounting to ₹89.00 lakh during the period 2014-19 under Regulation 14(3)(ii) which provides for change in law or compliance of any existing law. It has also submitted that the petitioner has not provided any



justification for claiming this expenditure under change in law. The respondent has further submitted that the installation of fire extinguisher for providing fire safety to the plant is one of the routine and basic necessity of every power plant, and this expenditure has to be incurred by the petitioner from the amount of normative O&M expenses allowed to it. The respondent has accordingly submitted that the additional capital expenditure incurred after cut-off date on fire extinguisher cannot be considered for capitalization under Regulation 14(3) of the 2014 Tariff Regulations. In response, the petitioner has submitted that the matter contained in the above objection is wrong and denied. The petitioner has further submitted that the petitioner has claimed additional capital expenditure on conservative basis relying upon the past experience.

18. We have examined the matter. It is observed that the additional capital expenditure claimed is not within original scope of work. Moreover, the petitioner has also not provided proper justification and/or any technical report recommending for replacement of such item due to Change in law or for compliance of any existing law. In the absence of any documentary evidence indicating the necessity for capitalization of this item under Change in law or for compliance with any existing law, we find no reason to allow the additional capital expenditure under this head.

Additional capital expenditure claimed on account of shifting of operating software from XP to Windows

19. The petitioner has claimed additional capital expenditure with corresponding de-capitalization towards replacement of certain assets/works like Main Control Room DCS work station (MAX D.N.A. System), Ash Panel PLC System, CHP PLC Work station



(Rockwell) and D.M. Plant PLC Work station under Regulation 54 of the 2014 Tariff Regulations (Power to relax) as under:-

Head of Works/ Equipment	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Main Control Room DCS work station (MAX D.N.A. System) BHEL,EDN	64.00	64.00	64.00	64.00	64.00
Ash Panel PLC System,(G.Fannuc)	15.00	15.00	15.00	0.00	0.00
CHP PLC Work station (Rockwell)	30.00	15.00	15.00	15.00	15.00
D.M. Plant PLC Work station(G.Fannuc)	15.00	15.00	15.00	0.00	0.00

20. In justification of the same, the petitioner has submitted that system of main control room, ash plant, DM Plant and CHP are based on windows XP operating software which has already been scrapped by Microsoft w.e.f. 8.4.2014. The petitioner has also submitted that presently the available software is windows but the existing DCS and PLC Software will not run on windows. The petitioner has further submitted that as two different (new & old) software can run parallel, therefore phase wise replacement of the items is required to be undertaken.

21. We have examined the matter. It is observed that the claim of the petitioner for capitalization of the said expenditure is in respect of change in existing software and the consequent replacement of the same. The provision of the relevant regulation which is required to be relaxed has also not been indicated. In our view, these expenditures are minor in nature and the petitioner can meet the same from the O&M expenses allowed to the generating station. Hence, the same has not been allowed.



Online pollution parameter measurement from discharge of effluent treatment plant (PH, TSS, BOD, COD)

22. The petitioner has claimed projected additional capital expenditure of ₹25.00 lakh in 2014-15 towards online pollution parameter measurement of discharge of effluent treatment plant (PH, TSS, BOD, COD) under Regulation 54 of the 2014 Tariff Regulations. In justification, the petitioner has submitted that the same is as per statutory requirement of Central Pollution Control Board (CPCB) and Jharkhand State Pollution Control Board (JSPCB). In this regard, the petitioner was directed to furnish the supporting documents directing the installation of such systems and the petitioner has submitted that order for online pollution parameter measurement from discharge of effluent treatment plant was placed on 11.4.2015 and the system was commissioned on 8.9.2015. Although the projection for procurement and commissioning was envisaged in 2014-15, it was finally commissioned in 2015-16. The petitioner has submitted the copy of the letter Ref. No. D- 746 by Jharkhand State Pollution Control Board containing the directions which states as under:-

“a. To install online Continuous Stack Emission Monitoring System (CSEMS) for the parameters (industry/sector specific parameter) mentioned in the consent to operate/ authorization not later than by March 31, 2015.

b. To install online effluent quality monitoring system at the outlet of effluent treatment plants of industries for the measurement of the parameters (industry/sector specific parameter) like flow, pH, COD, BOD, TSS and for other consented parameters as per the guidelines provided; not later than by March 31, 2015 if you are discharging continuously effluent outside the premises.”



23. The petitioner has also submitted the copy of purchase order regarding remote data transmission system to JSPCB and CPCB from Chandrapura TPS.

24. We have examined the matter. It is observed that the petitioner has furnished the copy of letter issued by Jharkhand State Pollution Control Board directing the petitioner to install online Continuous Stack Emission Monitoring System (CSEMS) and online effluent quality monitoring system not later than by March 31, 2015 pursuant to which the said capital expenditure has been claimed. It is observed that the capital expenditure towards online pollution parameter measurement of discharge of effluent treatment plant (PH, TSS, BOD, COD) has been incurred to comply with the norms of Jharkhand State Pollution Control Board. Accordingly, we have considered the additional capital expenditure in accordance with Regulation 14(3)(iii) of the 2014 Tariff Regulations.

Renovation of railway siding

25. The petitioner has claimed projected additional capital expenditure of ₹50.00 lakh in 2014-15 towards renovation of railway siding under Regulation 54 of the 2014 Tariff Regulations. In justification, the petitioner has submitted that overhead lines electrification work is in progress and therefore new railway crossing gate is proposed to be fitted at different locations to avoid accident for safety point of view.

26. We have examined the matter. The provisions of Regulation 14(3) of the 2014 Tariff Regulations do not permit the additional capital expenditure of the item. It is observed that the above works do not form part of original scope of work of the project. Moreover, the petitioner has not submitted any justification for taking up the new work towards



renovation of railway siding after cut-off date. In the absence of any justification and documentary evidence, we are not inclined to consider the additional capital expenditure claimed by the petitioner. In this background, we find no reason to exercise the Power to relax for allowing the claim of the petitioner.

New Road Weighbridge and Rail Static Weighbridge at wagon tippers

27. The petitioner has claimed projected additional capital expenditure of ₹15.00 lakh in 2014-15 towards new road weighbridge and ₹30.00 lakh in 2015-16 towards Rail static weighbridge at wagon tippers under Regulation 54 of the 2014 Tariff Regulations. In justification of new road weighbridge, the petitioner has submitted that existing two nos. weighbridge is not sufficient to cater the present weighment demand and therefore, additional weighbridge is projected at gate entry point to reach the coal in its destination at the shortest route. As regards installation of rail static weighbridge at wagon tippers, the petitioner has submitted that the same is required to facilitate weighment.

28. We have examined the matter. The provisions of Regulation 14(3) of the 2014 Tariff Regulations do not permit the additional capital expenditure of the item. It is observed that the additional capital expenditure claimed do not form part of the original scope of work of the project. Moreover, the petitioner has not submitted any justification or documentary evidence to show that the expenditure on these works is necessary for the efficient operation of the generating station. In the absence of any justification or documentary evidence, we find no reason to exercise the Power to relax for allowing the claim of the petitioner.



Dyke raising of Ash Ponds

29. The petitioner has claimed projected additional capital expenditure of ₹1000.00 lakh in 2016-17 towards Dyke raising of Ash ponds at this generating station under Regulation 54 of the 2014 Tariff Regulations. In justification, the petitioner has submitted that all the ponds are in filled up condition and due to the problem of ash evacuating agency and related court case, evacuation in last three years was badly hampered. It has therefore submitted that in order to increase the capacity of the ash pond, dyke raising is required for sustained generation. The petitioner has further submitted that ash evacuation is also under progress.

30. The respondent, MPPMCL has submitted that all the ponds are in filled up condition due to the problem of ash evacuating agency and ash evacuation work was hampered badly during last three years. Thus, the respondent has submitted that the petitioner is solely responsible for such undue, unwarranted and unjustified expenditure. The respondent has further submitted that the justification given by the petitioner regarding ash dyke raising expense is not sufficient and proper and the claim is liable to be disallowed. In response, the petitioner has submitted that it has furnished additional capital expenditure on conservative basis relying upon the past experience.

31. We have examined the matter. The provisions of Regulation 14(3) of the 2014 Tariff Regulations do not permit the additional capital expenditure of the item. It is observed from the submissions of the petitioner that such expenditure is temporary in nature and petitioner is solely responsible for the problem of the ash evacuating agency for which details have not been submitted by the petitioner. From the submissions made, it



appears that the factors were controllable by the petitioner. In this background, we find no reason to exercise the Power to relax for allowing the claim of the petitioner.

Procurement of Cuplock Scaffolding for Boiler

32. The petitioner has claimed projected additional capital expenditure of ₹250.00 lakh in 2016-17 towards procurement of cuplock scaffolding for boiler under Regulation 54 of the 2014 Tariff Regulations. In justification, the petitioner has submitted that the same are mandatory tools and tackles for complete inspection and quality check during overhauling of boiler and was not supplied with the initial spares/tools and tackles.

33. We have examined the matter. The provisions of Regulation 14(3) of the 2014 Tariff Regulations do not permit the additional capital expenditure of the item. It is observed that the additional capital expenditure claimed do not form part of the original scope of work of the project. Moreover, the petitioner has not provided any technical report or recommendation recommending for such procurement of cuplock scaffolding for boiler. In the absence of any justification or documentary evidence, we find no reason to exercise the Power to relax for allowing the claim of the petitioner.

Procurement of 1200HP locomotive

34. The petitioner has claimed projected additional capital expenditure of ₹500.00 lakh in 2016-17 towards procurement of 1200 HP locomotive under Regulation 54 of the 2014 Tariff Regulations. In justification, the petitioner has submitted that the existing locomotives are having less capacity (350 HP) and therefore, one higher capacity locomotive is required for the movement of BOBR and BOXN rakes smoothly.



35. The respondent, MPPMCL has submitted that such additional capital expenditure has to be considered in accordance with Regulation 14(3) of the 2014 Tariff Regulations, which do not provide for capitalization of such expenses after cut-off date. The respondent has also submitted that the request of the petitioner for allowing this expenditure under regulation Power to Relax is misconceived and misplaced and liable to be rejected. In response, the petitioner has submitted that it has furnished its additional capital expenditure on conservative basis relying upon the past experience.

36. We have examined the matter. The provisions of Regulation 14(3) of the 2014 Tariff Regulations do not permit the additional capital expenditure of the item. It is observed that the additional capital expenditure claimed do not form part of the original scope of work of the project. Moreover, the petitioner has not provided any technical report or recommendation recommending for such procurement of 1200 HP locomotive. In the absence of any justification or documentary evidence, we find no reason to exercise the Power to relax for allowing the claim of the petitioner.

37. Based on the above discussions, the projected additional capital expenditure allowed for the period 2014-19 are summarized as under:

(₹ in lakh)

S. No	Head of Works/ Equipment	Additional Capital Expenditure allowed	De-capitalization allowed	Depreciation recovered on de-capitalized assets	Net additional capital expenditure allowed
	2014-15				
1	Online pollution parameter	25.00	0.00	0.00	25.00



S. No	Head of Works/ Equipment	Additional Capital Expenditure allowed	De-capitalization allowed	Depreciation recovered on de-capitalized assets	Net additional capital expenditure allowed
	measurement from discharge of effluent treatment plant (PH,TSS, BOD,COD)				
	Sub-total	25.00	0.00	0.00	25.00
	Total allowed	25.00	0.00	0.00	25.00

Capital cost for 2014-19

38. As stated above, the closing capital cost of ₹223108.23 lakh as on 31.3.2014 approved in order dated 9.2.2017 in Petition No. 181/GT/2015 has been considered as opening capital cost as on 1.4.2014. Accordingly, the year wise capital cost considered for determination of tariff for the period 2014-19 is as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	223108.23	223133.23	223133.23	223133.23	223133.23
Net Additions Allowed	25.00	0.00	0.00	0.00	0.00
Closing Capital Cost	223133.23	223133.23	223133.23	223133.23	223133.23
Average Capital Cost	223120.73	223133.23	223133.23	223133.23	223133.23

Debt-Equity Ratio

39. Regulation 19 of the 2014 Tariff Regulations provides as under:

“(1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that:

(i) where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:

(ii) the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:



(iii) any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt-equity ratio.

Explanation - The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

(2) The generating Company or the transmission licensee shall submit the resolution of the Board of the company or approval from Cabinet Committee on Economic Affairs (CCEA) regarding infusion of fund from internal resources in support of the utilisation made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.

(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered.

(4) In case of generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2014, the Commission shall approve the debt: equity based on actual information provided by the generating company or the transmission licensee as the case may be.

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernization expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.”

40. Accordingly, the gross normative loan and equity amounting to ₹156175.76 lakh and ₹66932.47 lakh respectively, as on 31.3.2014 as admitted in order dated 9.2.2017 in Petition No. 181/GT/2015 has been considered as normative loan and equity as on 1.4.2014. The normative debt equity ratio of 70:30 has been considered in the case of additional capital expenditure. This is subject to truing-up in terms of Regulation 8 of the 2014 Tariff Regulations. The opening and closing debt and equity is as under.



(₹ in lakh)

Asset	As on 1.4.2014		Net Additional capitalization during 2014-19		As on 31.3.2019	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	156175.76	70.00%	17.50	70.00%	156193.26	70.00%
Equity	66932.47	30.00%	7.50	30.00%	66939.97	30.00%
Total	223108.23	100.00%	25.00	100.00%	223133.23	100.00%

Return on Equity

41. Regulation 24 of the 2014 Tariff Regulations provides as under:

“24. Return on Equity:

(1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:

Provided that:

i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:

ii). the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:

iii). additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:

iv). the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:



v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:

vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometers.”

42. Regulation 25 of the 2014 Tariff Regulations provides as under:

“Tax on Return on Equity

(1) The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax income on other income stream (i.e., income of non-generation or non-transmission business, as the case may be) shall not be considered for the calculation of “effective tax rate”.

(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:

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

Where “t” is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), “t” shall be considered as MAT rate including surcharge and cess.”

43. The petitioner has claimed return on equity considering the base rate of 15.50% and effective tax rate (MAT rate) of 20.961%. The respondent, MPPMCL has submitted that present rate of MAT is 18.50% excluding surcharge and cess. The 2014 Tariff Regulations provides for MAT only and thus surcharge and cess cannot be included in MAT for calculation of rate of return on equity. Therefore, the respondent has requested for considering the MAT rate of 18.5% for computation of rate of return on equity. In



response, the petitioner vide affidavit dated 20.10.2016 has submitted that return on equity has been claimed in accordance with the 2014 Tariff Regulations.

44. It is observed that the petitioner has claimed return on equity considering the base rate of 15.50% and effective tax rate (MAT rate) of 20.961%. However, the actual tax rate of 2013-14 is "NIL" as per annual audited accounts of 2013-14 submitted by the petitioner. It is also observed from the Annual Accounts for the years 2014-15 and 2015-16, that the tax liability is 'nil' in respect of the petitioner's company as a whole. In view of this, the actual tax rate of 2013-14 to 2015-16 has been considered 'NIL' for grossing up of the base rate. This is however subject to truing-up and shall be considered as per the actual effective tax rate applicable for the financial year.

45. Accordingly, Return on Equity has been worked out as under:-

	<i>(₹ in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Notional Equity-Opening	66932.47	66939.97	66939.97	66939.97	66939.97
Addition of Equity due to Additional Capitalization	7.50	0.00	0.00	0.00	0.00
Normative Equity- Closing	66939.97	66939.97	66939.97	66939.97	66939.97
Average Normative Equity	66936.22	66939.97	66939.97	66939.97	66939.97
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Tax rate for the year	0.000%	0.000%	0.000%	0.000%	0.000%
Rate of Return on Equity (Pre Tax)	15.500%	15.500%	15.500%	15.500%	15.500%
Return on Equity	10375.11	10375.70	10375.70	10375.70	10375.70

Interest on Loan

46. Regulation 26 of the 2014 Tariff Regulations provides as under:



“26. Interest on loan capital: (1) *The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.*

(2) *The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.*

(3) *The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-capitalization of such asset.*

(4) *Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.*

(5) *The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:*

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

47. Interest on loan has been worked out as under:
- a. The gross normative loan of ₹156175.76 lakh has been considered on 1.4.2014 in order dated 9.2.2017 in Petition No. 181/GT/2015. In addition to this, loan component towards additional capitalization has been considered as per the approved debt equity ratio.
 - b. Cumulative repayment of loan as on 31.3.2014 has been considered as cumulative repayment as on 1.4.2014.
 - c. Addition to normative loan on account of additional capital expenditure approved above has been considered on year to year basis.
 - d. Depreciation allowed has been considered as repayment of normative loan during the respective year of the tariff period 2014-19.



- e. In line with the provisions of the regulations, the weighted average rate of interest has been calculated by applying the actual loan portfolio existing as on 1.4.2014 along with subsequent additions during the period 2014-19, if any, for the petitioner company. In case of loans carrying floating rate of interest, the rate of interest as furnished by the petitioner has been considered for the purpose of tariff. The calculations for weighted average rate of interest on loan have been enclosed as Annexure-I to this order.
- f. The necessary calculations for interest on loan is as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Notional Loan for the purpose of tariff in the instant petition	156175.76	156193.26	156193.26	156193.26	156193.26
Cumulative repayment of loan up to previous year	40318.50	56665.93	73014.28	89362.62	105710.97
Net opening loan	115857.26	99527.33	83178.98	66830.64	50482.29
Addition due to Net Additional Capitalization	17.50	0.00	0.00	0.00	0.00
Repayment of Loan during the period	16347.43	16348.35	16348.35	16348.35	16348.35
Net Closing Loan	99527.30	83179.00	66830.60	50482.30	34133.90
Average Loan	107692.28	91353.16	75004.79	58656.47	42308.09
Weighted Average Rate of Interest on Loan (%)	10.4565%	10.4827%	10.4824%	10.5016%	10.1760%
Interest on Loan	11260.86	9576.31	7862.29	6159.85	4305.25

Depreciation

48. Regulation 27 of the 2014 Tariff Regulations provides as under:

“27. Depreciation: (1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof.



Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis

(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:

Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:

Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long term power purchase agreement at regulated tariff:

Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.

(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

*(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in **Appendix-II** to these regulations for the assets of the generating station and transmission system:*

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

(6) In case of the existing projects, the balance depreciable value as on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to 31.3.2014 from the gross depreciable value of the assets.

(7) The generating company or the transmission licensee, as the case may be, shall submit the details of proposed capital expenditure during the fag end of the project (five years before the useful life) along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.



(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services.”

49. Regulation 53(2)(iii) of the 2014 Tariff Regulations provides as under:

“53. Special Provisions relating to Damodar Valley Corporation. (1) Subject to clause (2), these regulations shall apply to determination of tariff of the projects owned by Damodar Valley Corporation (DVC).

(2) The following special provisions shall apply for determination of tariff of the projects owned by DVC:

(i)....

(ii)....

(iii) *Depreciation: The depreciation rate stipulated by the Comptroller and Auditor General of India in terms of section 40 of the Damodar Valley Corporation Act, 1948 shall be applied for computation of depreciation of projects of DVC.*

50. The respondent, MPPMCL has submitted that petitioner has considered the depreciation at a weighted average rate of 7.3267% which is exorbitant and without any basis. It has also submitted that no justification or detailed calculation has been provided by the petitioner for claiming such an exorbitant rate. The respondent has further submitted that the justification provided by the petitioner for claiming such an exorbitant rate is based on the notification issued by the Ministry of Power in March 1994 and the same is baseless and arbitrary. It has further submitted that the Tribunal in its judgment dated 1.5.2012 in Appeal no. 40/2011 (DVC vs Central Electricity Regulatory Commission) had held that when there is any conflict between the provisions of Electricity Act, 2003 and the provisions of any other Act then the provisions of Electricity Act will prevail. Thus, the respondent has submitted that the claim of the petitioner is highly arbitrary, illogical and without any basis.



51. In response, the petitioner has submitted that the rate of depreciation considered in petition is the weighted average rate of depreciation considered for 2013-14 as submitted during truing up petition. The petitioner has also submitted that it is a well settled principle that the rate of depreciation stipulated by the Comptroller and Auditor General of India in terms of Section 40 of Damodar Valley Corporation Act, 1948 should be applied for computation of depreciation for the projects of DVC.

52. The matter has been examined. The rate of depreciation has been arrived at by considering the weighted average rate of depreciation computed on the gross value of asset as on 31.3.2014 and at the rates approved by C&AG which works out to 7.327% for 2013-14. The same has been considered for the period 2014-19. The necessary calculations in support of depreciation are as under:-

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	223108.23	223133.23	223133.23	223133.23	223133.23
Net Additional Capitalization	25.00	0.00	0.00	0.00	0.00
Closing Capital Cost	223133.23	223133.23	223133.23	223133.23	223133.23
Average capital cost	223120.73	223133.23	223133.23	223133.23	223133.23
Value of freehold land	0.00	0.00	0.00	0.00	0.00
Rate of Depreciation	7.327%	7.327%	7.327%	7.327%	7.327%
Depreciable value	200808.65	200819.90	200819.90	200819.90	200819.90
Balance depreciable value	160490.16	144153.97	127805.63	111457.28	95108.93
Depreciation	16347.43	16348.35	16348.35	16348.35	16348.35
Cumulative depreciation at the end of the period (before adjustment)	56665.93	73014.28	89362.62	105710.97	122059.32
Less: Cumulative depreciation adjustment on account of de-capitalization	0.00	0.00	0.00	0.00	0.00
Cumulative depreciation after adjustment (at the end of the period)	56665.93	73014.28	89362.62	105710.97	122059.32



Operation & Maintenance Expenses

53. Regulation 29(1)(a) of the 2014 Tariff Regulations provides as under:

“29. Operation and Maintenance Expenses:

(1) Normative Operation and Maintenance expenses of thermal generating stations shall be as follows:

(a) Coal based and lignite fired (including those based on Circulating Fluidised Bed Combustion (CFBC) technology) generating stations, other than the generating stations/units referred to in clauses (b) and (d):

(in Rs Lakh/MW)

Year	200/210/250 MW Sets	300/330/350 MW Sets	500 MW Sets	600 MW and above sets
FY 2014-15	23.90	19.95	16.00	14.40
FY 2015-16	25.40	21.21	17.01	15.31
FY 2016-17	27.00	22.54	18.08	16.27
FY 2017-18	28.70	23.96	19.22	17.30
FY 2018-19	30.51	25.47	20.43	18.38

Provided that the norms shall be multiplied by the following factors for arriving at norms of O&M expenses for additional units in respective unit sizes for the units whose COD occurs on or after 1.4.2014 in the same station:

200/210/250 MW	Additional 5th& 6th units	0.90
	Additional 7th& more units	0.85

...”

54. Regulation 29 (1) (a) of the 2014 Tariff Regulations provides the year-wise O&M expense norms for the generating station of the petitioner as under:

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
11950.00	12700.00	13500.00	14350.00	15255.00

55. In addition to above, the petitioner has claimed additional O&M expenses towards Mega insurance and Share of Subsidiary activity.



	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Ash Evacuation	0.00	0.00	0.00	0.00	0.00
Mega Insurance	62.19	62.19	68.41	80.50	88.55
CISF Security	0.00	0.00	0.00	0.00	0.00
Share of Subsidiary activity	257.38	301.97	364.71	409.76	432.62
Total	319.56	364.15	433.12	490.26	521.17

56. The respondent, MPPMCL has submitted that petitioner's claim for additional O&M expenses are excessive and unreasonable and beyond the scope of the 2014 Tariff Regulations. In response, the petitioner vide affidavit dated 20.10.2016 has submitted that it has claimed only such items of expenditure which are not covered under the normative O&M expenses and therefore, requested the Commission to allow the additional O&M expenses.

57. We have examined the matter. In the Statement of Reasons in support of the 2014 Tariff Regulations, the Commission has observed as under:

"...29.39 Some of the generating stations have suggested that site specific factors should be taken into account and additional O&M expenses should be allowed. The Commission is of the view that the site specific norms in case of thermal generating stations may not serve much purpose as there is a set of advantages and disadvantages associated with every site, which average out, and the proposed norms are also based on multiple stations with wide geographical spread and therefore, such aspects are already factored in the norms..."

58. In line with the above observations and in accordance with the 2014 Tariff Regulations, the additional O&M expenses claimed by the petitioner under the above head has not been allowed.



Water Charges

59. Regulation 29(2) of the 2014 Tariff Regulations provide as under:

“29.(2) The Water Charges and capital spares for thermal generating stations shall be allowed separately:

Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. The details regarding the same shall be furnished along with the petition:

Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalization or consumption of stores and spares and renovation and modernization”

60. In terms of the above regulations, water charges are to be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check of the details furnished by the petitioner. The petitioner has submitted that at present water charges have not been claimed for the generating station. However, the petitioner has sought liberty to approach the Commission as and when the same is billed by the Authority and paid by the petitioner. In view of the above submission, we grant liberty to the petitioner to claim water charges at the time of truing up, with proper justification, and the same will be considered in accordance with law.

Capital spares

61. The petitioner has claimed capital spares on projection basis under Regulation 29(2) of the 2014 Tariff Regulations as under:-

<i>(₹ in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
0.00	0.00	0.00	0.00	1500.00



62. The petitioner has also submitted that the actual year-wise capital spares along with adequate justification will be submitted at the time of truing up. In view of this, the claim of the petitioner has not been considered in this order. The claim of the petitioner, if any, at the time of truing-up, shall be considered on merits after prudence check in terms of the provisions of the 2014 Tariff Regulations.

Operational Norms

63. The operational norms in respect of the generating station claimed by the petitioner are as under:

Target Availability (%)	83.00
Heat Rate (kCal/kWh)	2450.00
Auxiliary Energy Consumption (%)	9.00
Specific Oil Consumption (ml/kWh)	0.50

64. The operational norms claimed by the petitioner are discussed as under:

Normative Annual Plant Availability Factor (NAPAF)

65. Regulation 36 (A) (a) of the 2014 Tariff Regulations provides as under:

“(a) All Thermal generating stations, except those covered under clauses (b), (c), (d) & (e) - 85%.

Provided that in view of the shortage of coal and uncertainty of assured coal supply on sustained basis experienced by the generating stations, the NAPAF for recovery of fixed charges shall be 83% till the same is reviewed.

The above provision shall be reviewed based on actual feedback after 3 years from 01.04.2014.”



66. The petitioner has considered the Target Availability of 83% during 2014-19 due to inadequate regular supply of quality coal. In this regard, the respondent, MPPMCL has submitted that the procurement of coal and other raw material for efficient operation of the plant is the sole responsibility of the petitioner and beneficiaries should not be burdened for inability of the petitioner to procure sufficient quantity of coal of this generating station. Accordingly, MPPMCL has requested to direct petitioner to revise the target availability to 85% with retrospective effect. In response, the petitioner has submitted that in view of shortage of coal and uncertainty of assured coal supply on sustained basis, the NAPAF for recovery of fixed charges shall be 83% till the same is reviewed.

67. The petitioner was directed to furnish the details of month wise opening stock of coal, coal received during the month, closing stock of the coal for 2015-16 along with annual contracted quantity of coal. In response, the petitioner has submitted the details of month wise coal data for 2015-16 for this generating station as under:-

(in MT)

	Apr-2015	May-2015	Jun-2015	Jul-2015	Aug-2015	Sep-2015
Opening Stock	310547.59	392308.84	398982.50	337270.90	263009.12	246727.36
Qty received	355920.25	342410.66	291484.40	279634.22	340195.24	299026.19
Total	666467.84	734719.50	690466.90	616905.12	603204.36	545753.55
Consumption	274159.00	335737.00	353196.00	353896.00	356477.00	355925.00
Closing Stock	392308.84	398982.50	337270.90	263009.12	246727.36	189828.55

(in MT)

	Oct-2015	Nov-2015	Dec-2015	Jan-2016	Feb-2016	Mar-2016
Opening Stock	189828.55	115828.90	109092.68	214263.12	277035.69	363556.83
Qty received	256091.35	264560.78	357869.44	316285.57	329979.14	401904.69
Total	445919.90	380389.68	466962.12	530548.69	607014.83	765461.52
Consumption	330091.00	271297.00	252699.00	253513.00	243458.00	348004.00
Closing Stock	115828.90	109092.68	214263.12	277035.69	363556.83	417457.52



Details of coal as submitted by the petitioner for CTPS units 7 & 8 (2x250 MW)	in MT
Opening Stock as on 1.4.2015	310547.59
Quantity received in 2015-16	3835361.93
Consumption in 2015-16	3728452.00
Closing Stock as on 31.3.2016	417457.52

68. Further, the petitioner has submitted that annual contracted quantity of coal is 1.03 MMT in respect of CTPS Unit-7. From the above data submitted by the petitioner, it is observed that the quantity of coal received in 2015-16 was 3835361.93 MT and the quantity of coal consumed in 2015-16 was 3728452.00 MT. Thus, it is evident that the coal supply of the generating station was adequate during the year 2015-16. Accordingly, the Target Availability of 85% has been considered for the period from 2014-15 to 2018-19.

Station Heat Rate (kCal/kWh)

69. The petitioner has claimed the gross station heat rate of 2450 kCal/kWh for the period 2014-19 in terms of Regulation 36 (C)(a)(i) of the 2014 Tariff Regulations.

70. The respondent, MPPMCL has submitted that claimed GSHR of 2450 kCal/kWh is in gross contravention to the 2014 Tariff Regulations. It has further submitted that Regulation 36(C)(c)(i) of the 2014 Tariff Regulations provides that for Thermal generating station having COD on or after 1.4.2009 till 31.3.2014, GSHR shall be computed as under:



$$\text{GSHR} = 1.045 \times \text{Design Heat Rate}$$

As per information provided in form 2 :-

Guaranteed design gross turbine cycle heat rate is 1954 kCal/kWh

Guaranteed boiler efficiency 86.6%

Design unit heat rate 2256.35 kCal/kWh

$$\text{GSHR} = 1.045 \times 2256.35$$

$$\text{GSHR} = 2357.89 \text{ kCal/kWh}$$

Accordingly, the respondent has requested to allow GSHR to the generating station as 2357.89 kCal/kWh to the petitioner.

71. In response, the petitioner has submitted that the GSHR of 2450 kCal/kWh has been considered is in terms of Regulation 36 (C)(a)(i) of the 2014 Tariff Regulations. It has however submitted that the Commission while determining tariff for the period 2014-19 may consider the GSHR in terms of the applicable regulations in terms of the 2014 Tariff Regulations.

72. We have examined the matter. It is noticed that petitioner has submitted the guaranteed boiler efficiency of 86.60% in Form-2 of the petition. However, the Commission in order dated 12.3.2015 in Petition No. 196/GT/2013 had considered the guaranteed boiler efficiency of 86.62%. Accordingly, we consider the guaranteed boiler efficiency of 86.62% for the computation of Gross Station Heat Rate. Accordingly, GSHR of 2357.34 kCal/kWh has been worked out and allowed in accordance with Regulation 36 (C)(c)(i) of the 2014 Tariff Regulations.



Auxiliary Energy Consumption

73. Regulation 36(E)(a) of the 2014 Tariff Regulations provides Auxiliary Energy Consumption of 8.50% for coal based generating stations of 250 MW sets with Natural Draft cooling tower or without cooling tower. It further provides that for thermal generating stations with induced draft cooling towers, the norms shall be further increased by 0.5%. The petitioner has claimed Auxiliary Energy Consumption of 9.00% for the period 2014-19 as the generating station comprises of induced draft cooling towers. Accordingly, the Auxiliary Energy Consumption considered is as per the Regulation 36(E)(a) of the 2014 Tariff Regulations and the same is allowed.

Specific fuel Oil Consumption

74. Regulation 36(D)(a) of the 2014 Tariff Regulations provides secondary fuel oil consumption of 0.50 ml/kWh for coal-based generating stations of the petitioner and accordingly the same is allowed.

Interest on working capital

75. Sub-section (a) of clause (1) of Regulation 28 of the 2014 Tariff Regulations provides as under:

“28. Interest on Working Capital:

(1) The working capital shall cover

(a) Coal-based/lignite-fired thermal generating stations

(i) Cost of coal or lignite and limestone towards stock, if applicable, for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal/lignite stock storage capacity whichever is lower;

(ii) Cost of coal or lignite and limestone for 30 days for generation corresponding to the normative annual plant availability factor;



(iii) Cost of secondary fuel oil for two months for generation corresponding to the normative annual plant availability factor, and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;

(iv) Maintenance spares @ 20% of operation and maintenance expenses specified in regulation 29;

(v) Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the normative annual plant availability factor; and

(vi) Operation and maintenance expenses for one month.”

Fuel Components and Energy Charges in working capital

76. The petitioner has claimed cost for fuel components in working capital based on “as received” GCV of coal procured for the preceding three months of January, 2014, February, 2014 and March, 2014 and secondary fuel oil for the preceding three months of January, 2014, February, 2014 and March, 2014, as under:

	<i>(₹ in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal- 2 months	11370.54	11370.54	11370.54	11370.54	11370.54
Cost of Main Secondary Fuel Oil- 2 months	171.77	172.24	171.77	171.77	171.77
Total	11542.31	11542.78	11542.31	11542.31	11542.31

77. It is observed that in Form 15 of the petition, the petitioner has submitted the value of “as received” GCV for the period 2014-19 as 3360 kCal/kWh for January 2014, 3342 kCal/kWh for February 2014 and 3371 kCal/kWh for March 2014, which is lower than “as fired” GCV of 3523 kCal/kWh for April 2011, 3530 kCal/kWh for May 2011 and 3521 kCal/kWh for June 2011 for the period 2009-14.

78. In this regard, the petitioner was directed to provide the justification for “as received” GCV lower than “as fired” GCV. In response, the petitioner has submitted that Form-15 submitted for the preceding three months (April, May and June, 2011) of the COD of Unit



No. 8 of this generating station containing weighted average GCV of coal of 3523 kCal/kWh, 3530 kCal/kWh and 3521 kCal/kWh respectively on fired basis in terms of the 2009 Tariff Regulations. It has submitted that Unit-7 of the generating station was commissioned in November 2011 and the weighted average GCV of coal for the preceding three months (August, September and October 2011) were 3210, 3257 and 3240 kCal/kWh also on 'fired basis'. The petitioner has further submitted that the GCV of coking coal is much less than the non-coking coal having content of more surface moisture and the station uses both type of coals and fall in the GCV is due to use of more coking coal than the non-coking coal. The petitioner has stated that GCV of coal as received depends on coal matrix containing extraneous materials etc. The petitioner has further stated that while filing the tariff petition for period 2014-19, Form-15 was submitted on the basis of actual weighted average GCV on received basis for the preceding three months of the beginning of the period 2014-19, viz. 3360 kCal/kWh for January 2014, 3342 kCal/kWh for February 2014 and 3371 kCal/kWh for March 2014). The petitioner has also submitted that the data furnished in Form-15 are of different periods and may vary depending upon the proportion of coking and non-coking coal and the surface moisture content and the based on actual measurement at the plant level. The petitioner has submitted that the variation in GCV at loading and unloading end and the supply of huge quantity of stone/shale/extraneous materials, etc. along with coal were regularly reported to MOP/MOC/CIL and coal companies for improvement in quality.

79. The respondent, MPPMCL has submitted that cost of coal towards stock for 15 days or 30 days for generation corresponding to the normative annual plant availability



factor or the maximum coal stock storage capacity whichever is lower has to be allowed. Accordingly, MPPMCL has requested to direct the petitioner to demonstrate the actual coal stock storage capacity of this generating station for computation of cost of coal towards stock. The respondent has further submitted that petitioner has claimed weighted average cost of coal @ ₹ 3095.28 per MT for weighted average GCV of 2612.73 kCal/kg on as received basis. It has further submitted that loading end weighted average GCV of coal has been submitted as 5039 kCal/kg for non-coking coal indicating that coking coal has also been received during the month and, that GCV of this non-coking coal could not be determined at loading end and therefore, GCV of domestic coal as per bill of coal company could not be computed. Accordingly, the respondent has requested to direct the petitioner to furnish the information as desired in form no. 15 for computation of weighted average GCV of coal on as received basis.

80. The respondent, MPPMCL has submitted that Commission in the previous tariff order has allowed a weighted average GCV of 3524 kCal/kg and 3235 kCal/kg which was on as fired basis. In this petition the GCV on as received basis is being claimed as 3358 kCal/kg. Accordingly, MPPMCL has submitted that GCV of coal on as received basis is ought to be higher than GCV on as fired basis and needs clarification from the petitioner.

81. The respondent, MPPMCL has further submitted that the petitioner has not submitted the weighted average GCV of coal as billed and thus the information contained in Form 15 is inappropriate and insufficient for arriving at the weighted average GCV. The figures/data indicated by the petitioner are not the representative figures and thus the same is in gross contravention to the provisions of the 2014 Tariff



Regulations. Accordingly, MPPMCL has requested for directing the petitioner to clarify the reason for incomplete information as regards weighted average GCV of coal for making it possible to compute the cost of coal for working capital and energy charges rate. The respondent further submitted that petitioner has claimed an amount of ₹ further slakh towards Bus Unit in calculation of IOWC which is against the provision of the Regulation 28 and therefore it is requested to disallow the same, being without any basis.

82. In response, the petitioner vide its affidavit dated 20.10.2016 has submitted that the above objections of MPPMCL are wrong and denied. The station receives mostly coking coal and the GCV of such coal is not determined at the time of billing. The grade of coal is decided on the basis of ash percentage and accordingly GCV of coal is ascertained. The petitioner has further submitted that it has revealed the fact transparently and since the quantity of coking coal is much more than the non-coking coal the weighted average GCV of coal has been reduced to that extent. The petitioner further submitted that there were neither any dedicated coal mines and sidings nor dedicated MGR system for these units and CCL and BCCL are at liberty to supply coal of any grade from any place as per their convenience. Accordingly, the petitioner has submitted that there may be wide variation in GCV from month to month due to varying coal matrix in each month. However, variation in loading & unloading end GCV is clarified hereunder:

- a) At loading end, GCV of declared grade of non-coking coal is charged by coal companies without any consideration of stone/shell/bands and other extraneous materials invariably mixed with coal whereas at unloading end analysed GCV as per



actual supply sample (mixed with extraneous materials in appreciable quantity) results into much lower GCV.

(b) Declared grade GCV is based on "Air Dry Basis (ADB)/Equilibrated basis" whereas unloading end GCV is measured on "As Received Basis" (ARB), i.e., with consideration of moisture which is always lower than corresponding ADB value.

(c) Supply from CCL and BCCL is mainly NLW coking coal (about 85% - 90% where declared grade is based on Ash % only and not on GCV) with very less quantity (about 10% - 15%) of non-coking coal (where GCV is measured/analysed). Hence, loading end GCV for meagre quantity of non-coking coal is not the true reflection of total coal received at plant end. But at unloading end GCV is analysed for all types of coal on ARB basis and considering stone/shell/extraneous materials etc. and hence due to above factors the GCV at loading end is not comparable with GCV at unloading end, which is on much lower side.

83. Further, the petitioner has submitted that it has claimed IOWC strictly in terms of the 2014 Tariff Regulations. It has further submitted that Bus Units are in million units and has not been added while arriving at interest on working capital.

84. The issue of "as received" GCV for computation of energy charges was challenged by NTPC and other generating companies through writ petition in the Hon'ble High Court of Delhi. The writ petition was heard on 7.9.2015 and Hon'ble High Court of Delhi had directed that the Commission shall decide the place from where the sample of coal should be taken for measurement of GCV of coal on as received basis within 1 month on the request of petitioners.



85. As per the directions of the Hon'ble High Court, the Commission vide order dated 25.1.2016 in Petition No. 283/GT/2014 has decided as under:

“58. In view of the above discussion, the issues referred by the Hon'ble High Court of Delhi are decided as under:

(a) There is no basis in the Indian Standards and other documents relied upon by NTPC etc. to support their claim that GCV of coal on as received basis should be measured by taking samples after the crusher set up inside the generating station, in terms of Regulation 30(6) of the 2014 Tariff regulations.

(b) The samples for the purpose of measurement of coal on as received basis should be collected from the loaded wagons at the generating stations either manually or through the Hydraulic Auger in accordance with provisions of IS 436(Part1/Section1)-1964 before the coal is unloaded. While collecting the samples, the safety of personnel and equipment as discussed in this order should be ensured. After collection of samples, the sample preparation and testing shall be carried out in the laboratory in accordance with the procedure prescribed in IS 436(Part1/Section1)-1964 which has been elaborated in the CPRI Report to PSERC.”

86. Further, the petitioner has claimed energy charge rate (ECR) of Rs 2.122 /kWh based on the weighted average price, GCV of coal (as received basis) & oil procured and burnt for the preceding three months. It is observed that the petitioner has not placed on record the GCV of coal on “as received” basis taken from the loaded wagons at the unloading point, though the petitioner was statutorily required to furnish such information with effect from 1.4.2014. In compliance with the direction of the Hon'ble High Court of Delhi, the Commission in its order dated 25.1.2016 in Petition No. 283/GT/2014 has clarified that the sample for measurement of GCV of coal on “as received” basis shall be taken from the loaded wagons at the unloading point either manually or through the Hydraulic Augur. The petitioner has not submitted the required data regarding measurement of GCV of coal in compliance with the directions contained in the said order dated 25.1.2016. The present petition cannot be kept pending till the petitioner submits the required information. Hence, the Commission has decided to



compute the energy charges by provisionally taking the GCV of coal on as “billed basis” and allowing on adjustment for total moisture as per the formula given as under:

$$\frac{\text{GCV} \times (1 - \text{TM})}{(1 - \text{IM})}$$

$$(1 - \text{IM})$$

Where: GCV=Gross Calorific value of coal

TM=Total moisture

IM= Inherent moisture

87. In view of the above, the cost for fuel components in working capital have been computed at 85% for the period from 2014-15 to 2018-19 and based on “as billed” GCV of coal and price of coal procured and secondary fuel oil for the preceding three months from January, 2014 to March 2014 and allowed as under:-

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of coal towards stock-1 month	3784.65	3795.02	3784.65	3784.65	3784.65
Cost of coal for generation-1 month	3784.65	3795.02	3784.65	3784.65	3784.65
Cost of Main Secondary Fuel Oil- 2 months	175.91	176.39	175.91	175.91	175.91
Total	7745.21	7766.43	7745.21	7745.21	7745.21

Maintenance spares

88. The petitioner has claimed maintenance spares in working capital as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
2390.00	2540.00	2700.00	2870.00	3051.00

89. The expenses for maintenance spares as claimed by the petitioner are found to be in order and are allowed for computing the interest on working capital.



Receivables

90. Receivables equivalent to two months of capacity charge and energy charge for sale of electricity has been calculated on normative plant availability factor. Accordingly, receivables have been worked out on the basis of two months of fixed and energy charges (based on primary fuel only) as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Variable Charges -2 months	7745.21	7766.43	7745.21	7745.21	7745.21
Fixed Charges - 2 months	8948.29	8795.07	8643.46	8503.66	8347.66
Total	16693.50	16561.49	16388.67	16248.87	16092.87

O&M expenses for 1 month

91. O & M expenses for 1 month as claimed by the petitioner for the purpose of working capital is allowed as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
995.83	1058.33	1125.00	1195.83	1271.25

Rate of interest on working capital

92. Clause (3) of Regulation 28 of the 2014 Tariff Regulations provides as under:

“Interest on working Capital: (3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later.”

93. In terms of the above regulations, SBI PLR of 13.50% (Bank rate 10.00% + 350 bps) has been considered for the purpose of calculating interest on working capital.

Interest on working capital has been computed as under:



	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of coal towards stock-1 month	3784.65	3795.02	3784.65	3784.65	3784.65
Cost of coal for generation-1 month	3784.65	3795.02	3784.65	3784.65	3784.65
Cost of secondary fuel oil – 2 month	175.91	176.39	175.91	175.91	175.91
O&M expenses – 1 month	995.83	1058.33	1125.00	1195.83	1271.25
Maintenance Spares	2390.00	2540.00	2700.00	2870.00	3051.00
Receivables – 2 months	16693.50	16561.49	16388.67	16248.87	16092.87
Total working capital	27824.54	27926.26	27958.88	28059.91	28160.32
Rate of interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%
Interest on working capital	3756.31	3770.04	3774.45	3788.09	3801.64

Other Elements of tariff

94. In addition, the petitioner has claimed expenditure towards Pension & Gratuity contribution, contribution to sinking fund created for redemption of bond and cost of common offices. We now discuss and decide these elements as detailed below:

Pension & Gratuity Contribution

95. The petitioner has claimed pension and gratuity contribution for the period 2014-19 and has submitted that it has considered the actuarial valuation as on 31.3.2014, for liability towards pension and gratuity fund and projected P&G liability for the tariff period 2014-19 including impact of pay revision.

96. The respondent, MPPMCL has submitted that the claim of the petitioner is beyond the scope of the 2014 Tariff Regulations. It has also submitted that such expenditures are already considered in normative O&M expenses being allowed to the petitioner and accordingly the same may be disallowed. In response, the petitioner vide affidavit dated 20.10.2016 has submitted that the normative O&M expenses include only the



contribution part of the contributory provident fund which cannot be equated with the pension and liability. It has also submitted that while liability of the employer in case of CPF ceases with making contribution for a particular year itself, liability for pension is evaluated by an actuary considering the past services and other various factors, likely to be continued till the death of an employee and even beyond that up to the death of the spouse.

97. As regards the wage revision of employees, the respondent, MPPMCL has submitted that in view of huge return on equity earned, the petitioner should bear the burden of wage revision of its employees. It has further submitted that Ministry of Heavy Industries and Public Enterprises in its office memorandum dated 26.11.2008 had issued the following instructions:-

“3. Affordability in implementation of pay revision: - The revised pay scale would be adopted, subject to the condition of additional outgo by such revision for a period of 12 month should not result in more than 20% in dip in profit before tax (PBT) for the year 2007-08 of a CPSE in respect of executive as well as non-unionized supervisory staff taken together in a CPSE. CPSEs that cannot afford to pay full package, can implement with either part PRP or no PRP. These CPSEs may pay full package subsequently, provided the dip in the profit (PBT) is fully recouped to the original level.

4. The CPSEs, which are not able to adopt the revised pay scale(2007), may give the increase on a basic pay plus DA drawn in the pre revised scale as on 01.01.2007, with a uniform lower fitment of 10% or 20%, depending upon their affordability, with the approval of their Ministry/ Department.

16. Financial Implications: - The CPSE concerned has to bear their additional financial implications on account of pay revision from their own resources and no budgetary support will be provided.”

Accordingly, the respondent, MPPMCL has submitted that the petitioner should bear the financial implications by own, and the respondents are not liable to bear the burden of pay revision of employees of the petitioner.



98. In response, the petitioner vide affidavit dated 20.10.2016 has submitted that normative O&M expenses does not include effect of the pay revision. It has also submitted that the percentage of return on equity allowed to the petitioner is restricted to a reasonable limit only in accordance with the 2014 tariff Regulations.

99. We have examined the matter. It is observed that the liability claimed by the petitioner pertains to the period 2009-14 and does not pertain to the tariff period 2014-

19. In this regard it is observed that the Commission in Para 101 of the order dated 29.7.2016 in Petition No. 471/GT/2014, had disallowed the claim of the petitioner and had observed as under:

“101. As stated, the Commission in order dated 7.8.2013 in Petition No. 275/GT/2012 had allowed the recovery of 40% of the difference in liability as per Actuarial valuation 31.3.2009 and 31.3.2006 in five equal installments. The Commission in the said order had allocated the same on its generating stations except Mejia Unit 5 & 6. The Commission has revised the allocation and has also allocated share of P&G liability to Mejia Unit 5 and 6 on the basis of capital cost of ₹205946.66 lakh admitted by it as on 31.3.2009. It is observed that the O&M expenses norms specified by the Commission under the 2009 Tariff Regulations applicable for the period 2009-14 had taken into consideration the P&G liability as part of O&M expenses. The statement of reason of the 2009 Tariff Regulations, at para 20.3 clearly states that O&M cost for purpose of tariff covers expenditure incurred on the employees including gratuity, CPF, medical, education allowances etc. The expenses on account of CPF considered in Public Sector Undertakings take care of pension liability applicable in Government Undertaking.”

100. In line with the above observation, these expenses maybe met from the normative O&M Expenses allowed to the generating station. In view of this the share of pension and gratuity is not allowed.



Contribution to Sinking Fund

101. The petitioner in this petition has submitted that total debt borrowing is ₹7000 crore out of which actual allocation to generating stations of the petitioner is ₹3100 crore. The actual allocation of debt borrowing of ₹3100 Crore among generating stations of the petitioner is as under:-

	(₹ in lakh)		
	4400 bond Crore	2600 bond Crore	Total 7000 Crore bond
Mejia TPS Units 5 and 6	12000	12800	24800
Chandrapura TPS Units 7 and 8	30000	15000	45000
Mejia TPS B	40000	00	40000
Durgapur TPS	53000	34200	87200
Koderma TPS	65000	30000	95000
Raghunathpur TPS-I	00	18000	18000
Total	200000	110000	310000

102. Further, the petitioner has allocated sinking fund contribution and interest for debt borrowing of ₹3100 Crore among generating stations of the petitioner as under:-

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Total contribution and interest for debt borrowing	15277.34	16346.76	17491.03	18715.40	20025.48
Mejia TPS Units 5 and 6	1222.19	1307.74	1399.28	1497.23	1602.04
Chandrapura TPS Units 7 and 8	2217.68	2372.92	2539.02	2716.75	2906.92
Mejia TPS B	1971.27	2109.26	2256.91	2414.89	2583.93
Durgapur TPS	4297.37	4598.18	4920.06	5264.46	5632.97
Koderma TPS	4681.77	5009.49	5360.15	5735.37	6136.84
Raghunathpur TPS-I	887.07	949.17	1015.61	1086.70	1162.77
Total	15277.34	16346.76	17491.03	18715.40	20025.48

103. The respondent, MPPMCL has submitted that in accordance with the 2014 Tariff Regulations the interest and contribution on sinking fund is not allowed as pass through in annual fixed charges and accordingly, the same should be disallowed. In response,



the petitioner vide affidavit dated 12.9.2016 has submitted that Regulation 53(2)(iv) of the 2014 Tariff Regulations categorically provides that funds created under section 40 of the Damodar Valley Corporation Act, 1948 shall be considered as item of expenditure to be recovered through tariff.

104. We have examined the matter. Section 40 of the DVC Act provides that the petitioner shall make provision for depreciation and for reserve and other funds at such rates and on such terms as may be specified by the C&AG in consultation with the Central Government. It is observed that the sinking funds have been created only for redemption of bonds. Further, the book of accounts for the years 2012-13 and 2013-14 show figures/entries regarding the contribution to sinking fund against PFC loans. Accordingly, the amount approved for this generating station is as under:-

	<i>(₹ in lakh)</i>				
	2009-10	2010-11	2011-12	2012-13	2013-14
Sinking Fund Contribution	2217.68	2372.92	2539.02	2716.75	2906.92

Common Office Expenditure

105. The petitioner has submitted that the expenditure pertaining to common office expenditure such as Direction Office, Central Office, Other Offices, Subsidiary activities, IT centre and R&D caters services to all generating stations as well as composite transmission and distribution systems. It has also submitted that the total cost of common assets computed is based on capital cost as on 31.3.2014 as per Audited Accounts for the year 2013-14 which have been apportioned based on the opening cost of all generation and T&D system as on 1.4.2014 and apportionment thereof to each of the productive generating station in proportion to their installed capacities in MW as per directive of the Commission vide its order dated 29.7.2013 in Petition No. 268/GT/2013.



Accordingly, the additional capital expenditure claimed by the petitioner towards various offices is as under.

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Direction office	-	-	-	-	-
Subsidiary activities	-	-	-	-	-
Other offices	-	-	-	-	-
R&D	-	-	-	-	-
IT	698.90	685.00	4508.00	4508.00	300.00
Central Office	-	-	-	-	-
Total expenditure	698.90	685.00	4508.00	4508.00	300.00

106. The petitioner has computed Return on Equity, Interest on Loan and Depreciation on the Common Assets for the period 2014-19 based on the opening capital cost as on 1.4.2014 and projected additional capitalization during the period 2014-19 towards different offices and has apportioned them to each generating stations and T&D system in proportion to the capital cost approved as on 31.3.2014. Further, the petitioner has allocated the cost of common offices among generating stations on the basis of installed capacity. Accordingly, the annual fixed charges claimed towards Common Assets are as under:-

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Direction office	181.64	83.17	60.36	60.36	60.36
Subsidiary activities	169.44	89.54	58.91	58.91	58.91
Other offices	126.07	122.24	122.24	105.32	48.81
R&D	280.10	270.44	260.17	253.34	241.98
IT	100.99	219.39	667.10	1497.65	1893.35
Central Office	554.87	532.74	509.91	487.66	487.66
Total expenditure	1413.11	1317.51	1678.69	2463.24	2791.07



	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Generating Stations claimed	1327.15	1237.37	1576.58	2313.41	2621.29
T&D	85.96	80.14	102.11	149.83	169.78
Total	1413.11	1317.51	1678.69	2463.24	2791.07

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Chandrapura TPS Unit-7 and 8	104.38	97.32	124.00	181.95	206.17

107. The respondent, MPPMCL has submitted that the petitioner's claim towards share of common office expenses is beyond scope of the 2014 Tariff Regulations. In response, the petitioner has submitted that 1st proviso to Regulation 53(2)(i) of the 2014 Tariff Regulations clearly specify that the capital expenditure incurred on head office, regional offices, administrative and technical centres of DVC shall also form part of the capital cost and therefore, the comment of respondent is misconceived.

108. In response to the directions of the Commission, it is observed that the petitioner has not submitted any details regarding the additional capitalization claimed under IT offices. In view of this, the additional capitalization claimed under IT office is not allowed. However, the petitioner is granted liberty to submit detailed justification on the said claim at the time of revision of tariff based on true-up exercise in terms of Regulation 8 of the 2014 Tariff Regulations. It is noticed that the claim of the petitioner for common office expenditure is in line with the Commission's order dated 6.8.2009 in Petition No. 66/2005 and order dated 8.5.2013 in Petition No. 272/2010. Accordingly, the annual fixed charges for Common offices have been worked out in line with the approach followed in order dated 9.2.2017 in Petition No. 181/GT/2015. The annual fixed charges



of Common offices as worked out have been apportioned to the generating stations / T&D systems as follows:-

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	438.37	390.47	331.22	331.22	331.22
Interest on loan	130.32	105.00	93.73	92.63	81.03
Return on Equity	573.79	573.79	573.79	573.79	573.79
Total	1142.48	1069.27	998.75	997.65	986.05

(₹ in lakh)

	Capital cost as on 1.4.2014	2014-15	2015-16	2016-17	2017-18	2018-19
Entire generating station	574165.23	989.45	926.04	864.97	864.01	853.97
T&D	88805.81	153.04	143.23	133.78	133.64	132.08
Total	662971.04	1142.48	1069.27	998.75	997.65	986.05

(₹ in lakh)

Station	Capacity	2014-15	2015-16	2016-17	2017-18	2018-19
Bokaro TPS	630	99.64	91.77	85.72	85.62	84.63
Chandrapura TPS	390	61.68	56.81	53.06	53.01	52.39
Durgapur TPS	350	55.36	50.98	47.62	47.57	47.02
Mejia TPS #1 to 3	630	99.64	91.77	85.72	85.62	84.63
Mejia TPS #4	210	33.21	30.59	28.57	28.54	28.21
Mejia TPS #5 & 6	500	79.08	72.83	68.03	67.96	67.17
Maithon HS	63.2	10.00	9.21	8.60	8.59	8.49
Panchet HS	80	12.65	11.65	10.88	10.87	10.75
Tilaiya HS	4	0.63	0.58	0.54	0.54	0.54
Total	2857.2	451.91	416.20	388.75	388.32	383.81
Chandrapura TPS #7 & 8	500	79.08	72.83	68.03	67.96	67.17
Mejia TPS 7 & 8	1000	158.16	145.67	136.06	135.91	134.33
Durgapur Steel TPS # 1 & 2	1000	158.16	145.67	136.06	135.91	134.33
Koderma TPS	898.63	142.13	145.67	136.06	135.91	134.33
Total	3398.63	537.54	509.84	476.21	475.69	470.16



Station	Capacity	2014-15	2015-16	2016-17	2017-18	2018-19
Grand Total-Generation	6255.83	989.45	926.04	864.97	864.01	853.97
Total T&D		153.04	143.23	133.78	133.64	132.08
Grand total		1142.48	1069.27	998.75	997.65	986.05

109. Accordingly, annual fixed charges approved for the generating station for the period from 1.4.2014 to 31.3.2019 is summarized as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	16347.43	16348.35	16348.35	16348.35	16348.35
Interest on Loan	11260.86	9576.31	7862.29	6159.85	4305.25
Return on Equity	10375.11	10375.70	10375.70	10375.70	10375.70
Interest on Working Capital	3756.31	3770.04	3774.45	3788.09	3801.64
O&M Expenses	11950.00	12700.00	13500.00	14350.00	15255.00
Sub-Total	53689.72	52770.39	51860.78	51021.98	50085.94
Share of Common Office Expenses	79.08	72.83	68.03	67.96	67.17
Additional O&M on account of Ash Evacuation, Mega Insurance, CISF Security and Share of subsidiary activities	0.00	0.00	0.00	0.00	0.00
Share of Pension & Gratuity Contribution	0.00	0.00	0.00	0.00	0.00
Sinking fund contribution	2217.68	2372.92	2539.02	2716.75	2906.92
Sub-Total	2296.76	2445.75	2607.05	2784.71	2974.09
Total Annual Fixed Charges	55986.48	55216.14	54467.83	53806.68	53060.03

Energy Charge Rate (ECR)

110. Clause (6) sub-clause (a) of Regulation 30 of the 2014 Tariff Regulations provides for computation and payment of Capacity Charge and Energy Charge for thermal generating stations:

“6. Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal place in accordance with the following formulae:



(a) For coal based and lignite fired stations

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

Where,

AUX = Normative auxiliary energy consumption in percentage.

CVPF = (a) Weighted Average Gross calorific value of coal as received, in kCal per kg, for coal based stations.

(b)....

(c) In case of blending of fuel from different sources, the weighted average Gross calorific value of primary fuel shall be arrived in proportion to blending ratio.

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.

LC = Normative limestone consumption in kg per kWh.

LPL = Weighted average landed price of limestone in Rupees per kg.

LPPF = Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable, during the month. (In case of blending of fuel from different sources, the weighted average landed price of primary fuel shall be arrived in proportion to blending ratio)

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

LPSFi=Weighted Average Landed Price of Secondary Fuel in Rs./ml during the month.”

111.The petitioner has claimed an Energy Charge Rate (ECR) of Rs 2.122 /kWh considering the normative transit and handling losses of 0.8% for coal supplied through Railway system.

112.The respondent, MPPMCL has submitted that Regulation 30 (11) of the 2014 Tariff Regulations provides for determination of energy charges rate at the start of the tariff period. The energy charges so approved by the Commission shall be base energy



charge rate at the start of tariff period. Accordingly, MPPMCL has requested to direct the petitioner for furnishing information for determination of base energy charge rate. In response, the petitioner vide its affidavit dated 20.10.2016 has submitted that it has already furnished the fuel data for last three months, viz., January, February and March 2014 for the purpose of base energy charge. Therefore, the above comment of the respondent is misconceived, wrong and devoid entirely.

113. Accordingly, the Energy Charge Rate (ECR) based on operational norms specified under the 2014 Tariff Regulations and on “as billed” GCV of coal for preceding 3 months i.e. January, 2014 to March, 2014 is worked out as under:-

Description	Unit	2014-19
Capacity	MW	2x250 MW
Gross Station Heat Rate	kCal/kWh	2357.34
Auxiliary Energy Consumption	%	9.0 %
Specific Fuel Oil Consumption	ml/kWh	0.50
Weighted Average GCV of Oil	kCal/l	9320.06
Weighted Average GCV of Coal	kCal/kg	5039.00
Weighted Average Price of Coal	₹/MT	2612.73
Weighted Average Price of Oil	₹/ml	0.0567
Rate of Energy Charge ex-bus per kWh	Rs/kWh	1.372

Application Fee and Publication Expenses

114. The petitioner has sought the reimbursement of filing fee and also the expenses incurred towards publication of notices for application of tariff for the period 2014-19. The petitioner has deposited the filing fees for the period 2014-15 in terms of the provisions of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012. Accordingly, in terms of Regulation 52 of the 2014 Tariff Regulations and in line with the decision in Commission’s order dated 5.1.2016 in Petition No. 232/GT/2014, we direct



that the petitioner shall be entitled to recover pro rata, the filing fees and the expenses incurred on publication of notices for the period 2014-15 directly from the respondents on submission of documentary proof. The filing fees for the remaining years of the tariff period 2015-19 shall be recovered pro rata after deposit of the same and production of documentary proof.

115. The annual fixed charges determined as above are subject to truing-up in terms of Regulation 8 of the 2014 Tariff Regulations.

116. Petition No. 180/GT/2015 is disposed of in terms of the above.

Sd/-
(Dr. M. K. Iyer)
Member

Sd/-
(A.S. Bakshi)
Member



Annexure-I**DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO (2014-19)***(₹ in lakh)*

	Interest Rate					Loan deployed as on 1.4.2014	Additions during the tariff period	Total
	2014-15	2015-16	2016-17	2017-18	2018-19			
Loan-1 PFC Loan	11.25	11.25	11.25	11.25	11.25	0.00	0.00	0.00
Loan-2 SBI Corporate Loan	10.95	11.00	10.99	11.03	11.07	32500.00	0.00	32500.00
Loan-3 Syndicate Loan (CONSORTIUM OF BANKS & FI)	10.50	10.62	10.77	11.23	10.18	87800.00	0.00	87800.00
Loan-3 Share of GoI Guaranteed DVC Bonds (Series - 14 - Rs. 4,400 Crore)	10.30	10.30	10.30	10.30	10.30	30000.00	0.00	30000.00
Loan-3 Share of GoI Guaranteed DVC Bonds (Series - 15 - Rs. 2,600 Crore)	9.69	9.69	9.69	9.69	9.69	15000.00	0.00	15000.00
Total						165300.00	0.00	165300.00

WEIGHTED AVERAGE RATE OF INTEREST ON LOAN DURING 2014-19 TARIFF PERIOD*(₹ in lakh)*

	2014-15	2015-16	2016-17	2017-18	2018-19
Gross loan - Opening	165300.00	165300.00	165300.00	165300.00	165300.00
Cumulative repayments of Loans upto previous year	47720.00	59750.00	71780.00	83810.00	95840.00
Net loan - Opening	117580.00	105550.00	93520.00	81490.00	69460.00
Add: Drawal(s) during the Year	0.00	0.00	0.00	0.00	0.00
Less: Repayment (s) of Loans during the year	12030.00	12030.00	12030.00	12030.00	9835.00
Net loan - Closing	105550.00	93520.00	81490.00	69460.00	59625.00
Average Net Loan	111565.00	99535.00	87505.00	75475.00	65640.00
Interest on loan	11665.82	10433.99	9172.61	7926.06	6679.50
Rate of Interest on Loan (%)	10.4565%	10.4827%	10.4824%	10.5016%	10.1760%

