CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 330/GT/2014

Coram:
Shri Gireesh. B. Pradhan, Chairperson
Shri A.K.Singhal, Member
Shri A.S. Bakshi, Member
Dr. M. K. Iyer, Member

Date of Order : 11.4.2017

In the matter of

Approval of tariff of National Capital Thermal Power Station (NCTPS), Stage-I (840 MW) for the period from 1.4.2014 to 31.3.2019

And in the matter of

NTPC Ltd
NTPC Bhawan,
Core-7, SCOPE Complex,
7, Institutional Area, Lodhi Road,
New Delhi-110003) **.....Petitioner**

Vs

1. Uttar Pradesh Power Corp. Ltd. (UPPCL)
Shakti Bhawan
14, Ashok Marg
Lucknow-226001

2. BSES-Rajdhani Power Ltd.
BSES Bhawan, Nehru Place,
New Delhi - 110019

3. BSES-Yamuna Power Ltd.,
Shakti Kiran Building, Karkardooma,
Delhi- 110072

4. Tata Power Delhi Distribution Ltd.,
Grid Sub-station Hudson Road,
Kingsway Camp, Delhi-110009

5. New Delhi Municipal Council,
Palika Kendra, Sansad Marg,
New Delhi-110001

……….Respondents

Parties present:

For Petitioner: Shri Ajay Dua, NTPC
Shri Sameer Aggarwal, NTPC
Shri Nishant Gupta, NTPC
Shri Neeraj Kumar, NTPC
Shri S.K Jain, NTPC
Shri Rajeev Choudhary, NTPC
Shri Bhupinder Kumar, NTPC
Shri T. Vinodh Kumar, NTPC

For Respondents: Shri J.S Chordia, RGRPL
Shri Arshad Jilani, RGPL
Shri C.A Manish Grag, UPPCL and BYPL
Shri R. B Sharma, Advocate, BRPL
Ms. Megha Bajpeyi, BRPL
Shri Nishant Grover, BYPL
Shri Sameer Singh, BYPL
Shri Abhishek Srivastava, BYPL

ORDER

This petition has been filed by the petitioner, NTPC for approval of tariff of National Capital Thermal Power Station (NCTPS), Stage-I (840 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 generating station with a capacity of 840 MW comprises of four units of 210 MW each. The dates of commercial operation of different units of the generating station are as under:

	Capacity (MW)	Date of Commercial Operation (COD)
Unit – I	210	1.1.1993
Unit – II	210	1.2.1994
Unit – III	210	1.4.1995
Unit – IV	210	1.12.1995
COD of Generating Station	**840**	**1.12.1995**

3. The Commission vide order dated 24.3.2017 in Petition No. 299/GT/2014, had revised the tariff of the generating station for the period 2009-14 after truing-up exercise in terms of Regulation 6 (1) of the 2009 Tariff Regulations, considering the capital cost of ₹169042.76 lakh as on 31.3.2014. The annual fixed charge approved by order dated 24.3.2017 is as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	2398.97	2399.57	2387.54	2369.44	2357.81
Interest on Loan	126.19	2.83	0.00	0.00	0.00
Return on Equity	19974.99	19739.42	19492.41	19473.88	19905.19
Interest on Working Capital	7188.55	7231.12	7294.57	7333.07	7401.28
O&M Expenses	15288.00	16161.60	17085.60	18068.40	19101.60
Cost of Secondary Fuel Oil	2457.17	2457.17	2463.90	2457.17	2457.17
Sub-Total	**47433.87**	**47991.69**	**48724.03**	**49701.97**	**51223.04**
Compensation Allowance	210.00	252.00	294.00	294.00	357.00
Total	**47643.87**	**48243.69**	**49018.03**	**49995.97**	**51580.04**

4. The petitioner vide affidavit dated on 19.8.2014 has sought the approval of tariff in accordance with the provisions of the 2014 Tariff Regulations. Accordingly, the annual fixed charges claimed by the petitioner for the period 2014-19 in this petition are as under:

Capital Cost

(₹in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	170974.89	171151.93	171328.97	171328.97	171528.97
Add: Additional capital expenditure	177.04	177.04	-	200.00	800.00
Closing Capital Cost	171151.93	171328.97	171328.97	171528.97	172328.97
Average Capital Cost	171063.41	171240.45	171328.97	171428.97	171928.97

Annual Fixed Charges

(₹in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	2473.92	2499.97	2515.55	2537.41	2681.83
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	17386.39	17397.22	17402.63	17408.74	17439.31
Interest on Working Capital	10154.52	10257.39	10318.91	10408.97	10508.20
O&M Expenses	20226.40	21495.95	22850.11	24288.91	25820.80
Compensation Allowance	630.00	735.00	840.00	840.00	630.00
Special Allowance	-	-	-	-	2014.79
Total	**50871.23**	**52385.53**	**53927.19**	**55484.03**	**59094.93**

5. The petitioner submitted that the items disallowed by the Commission for capitalization in order dated 6.7.2012 in Petition No. 255/2009 have not been included in the capitalization claim in this petition. BRPL in its submissions dated 29.4.2016 submitted that, it has filed Petition No. 302/MP/2015, regarding termination of PPA (Power Purchase Agreement) from the petitioner's plants. Hence, the reply filed by BRPL is subject to outcome of the said petition and other similar cases filed in other courts.

6. Before we proceed to determine the tariff of the generating station for the period of 2014-19, we intend to rectify an inadvertent clerical error in the tables in paras 47, and 50, approved vide order dated 24.3.2017 in Petition No. 299/GT/2014.

7. Regulation 103(A) of the Central Electricity Regulatory Commission (Conduct of Business) Regulation, 1999, as amended from time to time (Conduct of Business Regulation) provides as under: -

> "Clerical or arithmetical mistakes in the orders or errors arising therein from any accidental slip or omission may at any time be corrected by the Commission either of its own motion or on the application of any of the parties."

8. The above provision enables the Commission to correct any accidental omission or error in an order at any time on its own motion. Hence, we consider it appropriate to correct the inadvertent clerical errors in the closing capital cost of this generating station as approved in tables in paras 47, and 50 of order dated 24.3.2017 in Petition No. 299/GT/2014. Accordingly, in exercise of our power under Regulation 103(A) of Conduct of Business Regulations, tables in para 47 are revised as under:-

(₹ in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Opening Capital cost	170127.78	170341.37	169983.16	169737.55	169444.73
Net Additional capital expenditure	213.58	(-)358.21	(-)245.61	(-)292.83	(-)401.97
Closing capital cost	170341.37	169983.16	169737.55	169444.73	169042.76
Average Capital cost	170234.57	170162.26	169860.36	169591.14	169243.74

9. The debt:equity ratio approved for this generating station in para 50 of order dated 24.3.2017 in Petition No. 299/GT/2014 is revised as under:

(₹ in lakh)

	As on 1.4.2009		**Net Additional Capital Expenditure during 2009-14**		**As on 31.3.2014**	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	85091.08	50.02%	(-759.53)	70.00%	84,331.56	49.89%
Equity	85036.70	49.98%	(-325.51)	30.00%	84,711.20	50.11%
Total	**170127.78**	**100.00%**	**(-1085.04)**	**100.00%**	169,042.76	**100.00%**

10. The respondents, UPPCL, BYPL and BRPL have filed their replies in the matter and the petitioner has filed its rejoinder to the said replies of the respondent UPPCL vide affidavit dated 5.11.2014. the matter was heard on 14.6.2016 and the Commission after directing the petitioner to submit additional information reserving order in the petition. Thereafter, by letter dated 22.6.2016 the petitioner directed to file additional information with copy to the respondents. The petitioner in compliance with the above direction filed the additional information with copy to the parties. We now proceed to examine the claim of the petitioner based on the submissions of the parties and the documents available on record, as discussed in the subsequent paragraphs.

Capital Cost as on 1.4.2014

11. 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 modernisation as admitted by this Commission in accordance with Regulation 15."

12. The annual fixed charges claimed by the petitioner are based on opening capital cost of ₹170974.89 lakh as on 1.4.2014 as filed on 19.8.2014. Thereafter, the Commission vide order dated 24.3.2017 in Petition No. 299/GT/2014 determined the capital cost as ₹169042.76 lakh as on 1.4.2014. The capital cost as on 31.3.2014 approved in Petition No. 299/GT/2014 has been considered as on 1.4.2014.

Projected Additional Capital Expenditure

13. 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 obsolesce 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:

Provided further that any capital expenditure other than that of the nature specified above in (i) to (iv) in case of coal/lignite based station shall be met out of compensation allowance:

Provided also that, if any, expenditure has been claimed under Renovation and Modernisation (R&M), repairs and maintenance under (O&M) expenses and Compensation Allowance, same expenditure cannot be claimed under this regulation."

14. The additional capital expenditure allowed vide order dated 24.3.2017 in Petition No. 299/GT/2014 is as under:

(₹in lakh)

Head of Work/Equipment	**2013-14**
Construction of Transit Camp & A,B,C Type Quarters	-
NDCT Package	-
Fire Protection System for Administration Building	-
Ash Storage Modification	125.62
Total (A)	**125.62**
Change in Law 9(2)(viii)	
Ambient Air quality monitoring system	-
New Claims- Regulation 9(2)(i)	
Railway Siding Work	-
Total	**125.62**
Exclusions not allowed (B)	(-)578.14
Additional capitalization allowed (C)	**(-)452.52**
Add: Discharges of liability	50.55
Net Additional capitalization allowed	**(-)401.97**

15. The break-up of projected additional capital expenditure claimed during 2014-19 is as under:-

(₹in lakh)

Sl No		Regulation Claimed	Additional Capital Expenditure Claimed
	2014-15		
1	Inert Gas Fire Extinguishing System	14(3)(iii)& 14(3)(ii)	177.04
	2015-16		
2	Inert Gas Fire Extinguishing System		177.04
3	**2016-17**	No additional Capital expenditure	
	2017-18		
5	Works Related to Side Arm Charger for Wagon tippler Stage-1	14(3)(x)	200.00
	2018-19		
6	Works Related to Side Arm Charger for Wagon tippler Stage-1		800.00
	Total		**1354.08**

16. In view of the above we now proceed to discuss the projected additional capital expenditure claimed by the petitioner in the succeeding paragraphs.

2014-15 & 2015-16

Inert Gas Fire Extinguishing System

17. The petitioner has claimed additional capital expenditure of ₹177.04 lakh in 2014-15 and ₹177.04 lakh in 2015-16 towards installation of inert gas fire extinguishing system under Regulation 14(3)(iii) & 14(3)(ii) of the 2014 Tariff Regulations. In justification of the same, the petitioner has submitted that there is no provision for fire fighting system in Central Control Room (IS. UPS, DDCMIS) presently in all four units of Stage-I which is a serious threat to safety & security of plant as well as personnel in case of fire. It has also submitted that the installation of inert gas fire fighting system has been started in order to comply with the statutory requirement as per National Fire Protection Association Standard on Clean agent fire extinguishing system (NFPA-2001).

18. The respondent UPPCL and BYPL have submitted that claim of the petitioner for inert gas fire extinguisher under Regulation 14(3)(iii) is not justifiable as the regulation is to meet higher environment norms and not for higher security and safety of the plant. Therefore, these respondents have prayed that the claim of the petitioner may be rejected. In response, the petitioner has submitted that there is no provision for fire extinguishing in the control room of Stage-I and for better safety and security the same is required in accordance to Regulation 12(5)(f)(v) of the CEA (Technical Standards for Construction of Electrical Plants and Electricity Lines) Regulations, 2010 which states as under:

> *" (v) Automatic Inert gas flooding system comprising of 2x100% inert gas cylinder batteries and conforming to NFPA, shall be provided for Unit Control rooms, Control Equipment room and above false ceiling of these rooms"*

19. Accordingly, the petitioner has prayed that the Commission may allow the same under Regulation 14(3)(ii) of the 2014 Tariff Regulations.

20. The respondent BRPL has submitted that additional capital expenditure claimed under Regulation 12(5) of the CEA (Technical Standards for Construction of Electrical Plants and Electricity Lines) Regulations, 2010 provides technical standards for construction of electrical plants, and since the generating station is already constructed plant, the claim of the petitioner may be rejected.

21. We have considered the submissions of the parties. The petitioner was directed vide letter dated 22.6.2016 to submit documentary evidence in support of claim for assets/works towards inert gas fire extinguishing system under Regulation 14(3)(iii) of the 2014 Tariff Regulations. In response the petitioner vide affidavit dated 12.7.2016 submitted that as per Environment (Protection) Act 1986 the Central Govt. laid down rules for ozone depleting substances. Further the CEA (Technical Standards for Construction of Electrical Plants and Electricity Lines) Regulations, 2010 published in the Gazette of India No.211 dated 20.8.2010 provides that comprehensive fire detection as well as alarm and fire protection system shall be installed for the station in conformity with the relevant IS under Regulation 2(5). In order to

comply with the above Regulations the works towards ‘Inert gas firefighting system’ are being executed at Dadri Stage-I. The petitioner has submitted the documentary evidence in form of Ministry of Environment and Forest, GOI, notification dated 17.7.2000 and CEA notification dated 20.8.2010.

22. We have examined the matter. It is observed that similar claim of the petitioner under Regulations 14(3)(ii) and 14(3)(vii) of the 2014 Tariff Regulations for Inert gas fire extinguishing system was considered by the Commission in Petition No. 286/GT/2014 (tariff of Faridabad Gas power station for 2014-19) and the Commission by order dated 31.5.2016 had rejected the claim of the petitioner. The relevant extract of the order is as under:

> *“16. As stated above, the Commission in order dated 14.9.2012 while disallowing the prayer of the petitioner for capitalization of the said work/ asset in 2013-14 had observed that the generating station would be eligible for R&M after 2009-14 and that the petitioner can undertake the said work during that time. However, petitioner has not come up with any R&M proposal. In line with the said observations of the Commission, we are not inclined to allow the additional capitalization of the said work. Accordingly, the projected additional capital expenditure of ₹45.49 lakh claimed in 2014-15 is not allowed at present.*
>
> *“17. Alternatively, the petitioner has prayed for considering the said expenditure under Regulation 14(3)(vii) of the 2014 Tariff Regulations, quoted above. The matter has been examined. In our considered view, the expenditure claimed for Inert Gas fire extinguishing system do not in any way contribute to the efficient operation of the generating station. Therefore there is no reason to permit the additional capitalization of the expenditure. Accordingly, the claim of the petitioner for projected additional capital expenditure of ₹45.49 lakh in 2014-15 is not allowed.”*

23. Though the prayer of the petitioner was not allowed under Regulation 14(3)(ii) of the 2014 Tariff Regulations, the Commission is of the view that the matter needs to be examined in the larger perspective i.e whether the CEA Regulations 2010 and 2011 are applicable to the existing generating stations and if so, whether the implementation of the augmentation of fire fighting system should be considered as Change in law and is required for Safety and security of the plant in terms of

Regulation 14(3)(ii) and (iii) of the 2014 Tariff Regulations. Accordingly, the Commission has decided to consult the CEA in this regard. Therefore, the Staff of the Commission is directed to refer the matter to CEA for necessary clarification. Pending clarification in the matter, the claim of the petitioner has not been decided in this order. If on the basis of the report of the CEA, the Commission comes to a decision to allow the expenditure for Inert gas fire extinguishing system under Change in law and for Safety and security of the plant, and in that event, the claim of the petitioner shall be considered at the time of truing-up of tariff in terms of Regulation 8 of the 2014 Tariff Regulations.

2016-17

24. The petitioner has not claimed any additional capitalization for the year 2016-17.

2017-18 & 2018-19

Works related to side arm for Wagon Tippler (Stage-I)

25. The petitioner has claimed additional capital expenditure of ₹200.00 lakh in 2017-18 and ₹800.00 lakh in 2018-19 for Works related to side arm for Wagon Tippler (Stage-I) under Regulation 14(3)(x) of the 2014 Tariff Regulations. In justification of the same, the petitioner has submitted that the wagon tippler was commissioned in 1993-94 and has rendered service for more than 21 years. It has also submitted that the technology involved is obsolete since 2001 and therefore no spares are available for the same. The petitioner has further submitted that due to higher supply of coal through box-N wagon than BOBR wagon, over the years, the existing electrically operated side arm charger has worn out beyond the permissible limit, thereby creating unsafe operating conditions. Accordingly, the petitioner submitted that in order to ensure safe operation and continued unloading of wagon, work of retrofit of hydraulically operated side arm charger has been undertaken.

26. The respondent, UPPCL and BYPL have submitted that the additional capital expenditure claimed for works related to side arm charger for wagon tippler stage-I, has been incurred on account of obsolescence of existing equipment and not on account of 'modification required in fuel receiving system arising due to non-materialization of coal supply'. It has pointed out that the expenditure does not meet the pre-requisite requirement the same may be disallowed. The respondent BRPL has submitted that the petitioner has projected additional capital expenditure of ₹1000.00 lakh under Regulation 14(3)(x) of the 2014 Tariff Regulations and the same is applicable when modification is needed in the fuel receipt system arising due to non-materialization of coal supply corresponding to full coal linkage. It has also submitted that, the petitioner has not submitted any certificate from the manufacturer substantiating that the equipment needs replacement and any de-capitalization amount. The respondent has also submitted that the petitioner should specify the design life of the generating station and hence, the petitioner should be directed to submit relevant documentary evidence in support of the same. Accordingly, it has prayed that the said expenditure cannot be allowed. In response, the petitioner has submitted that the generating station being load centric, most coal supplies are fed through BOXN wagons. It has further stated that the electrically operated side arm charger of wagon tippler has become obsolete and non-maintainable as it was commissioned in 1993-94 i.e. more than 21 years and has currently worn out. The petitioner has submitted that as spares are also unavailable, the retro-fit of hydraulic operated side arm charger is the modification proposed in wagon tippler in order to ensure un-interrupted reception of coal for normal and continuous running of the generating station. Accordingly, the petitioner has prayed that the claim may be allowed.

27. We have considered the matter. Regulation 14(3)(x) of the 2014 Tariff Regulation permits additional capital expenditure for modification in the fuel receipt system if there is shortage / non-materialization of coal supply according to linkage. From the justification submitted by the petitioner, it does not appear that any such modification is due to linkage problem. It is noticed that the generating station is allowed Compensation allowance as per

Regulation 17 of the 2014, Tariff Regulations in order to meet such expenditure on assets of capital nature including minor assets. Accordingly, in our view the additional capital expenditure claimed by the petitioner is not allowed.

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

(₹in lakh)

Sl No		Regulation	Additional Capital Expenditure Claimed	Allowed
	2014-15			
1	Inert Gas Fire Extinguishing System	14(3)(iii)& 14(3)(ii)	177.04	0.00
	2015-16			
2	Inert Gas Fire Extinguishing System		177.04	0.00
3	**2016-17**	No additional Capital expenditure		
	2017-18			
5	Works Related to Side Arm Charger for Wagon tippler Stage-1	14(3)(x)	**200.00**	0.00
	2018-19			
6	Works Related to Side Arm Charger for Wagon tippler Stage-1		**800.00**	0.00
	Total		**1354.08**	**0.00**

29. Accordingly, the capital cost approved in respect of the generating station for the period 2014-19 is as under:

(₹in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Opening Capital Cost	169042.76	169042.76	169042.76	169042.76	169042.76
Add: Additional capital expenditure	0.00	0.00	0.00	0.00	0.00
Closing Capital Cost	**169042.76**	**169042.76**	**169042.76**	**169042.76**	**169042.76**
Average Capital Cost	169042.76	169042.76	169042.76	169042.76	169042.76

Debt-Equity Ratio

30. 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-equtiy 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 f 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:equityration 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 modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.

31. Accordingly, the gross normative loan and equity amounting to ₹84331.56 lakh and ₹84711.20 lakh, respectively as on 31.3.2014 has been considered as gross 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.

(₹ in lakh)

	As on 31.3.2014		Additional capitalization during 2014-19		As on 31.3.2019	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	84,331.56	49.89%	0.00	70.00%	84,331.56	49.89%
Equity	84,711.20	50.11%	0.00	30.00%	84,711.20	50.11%
Total	169,042.76	**100.00%**	**0.00**	100.00%	169,042.76	**100.00%**

Return on Equity

32. 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.

33. 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 begrossed up with the effective tax rate of the respective financial year. For this purpose, the effective taxrate shall be considered on the basis of actual tax paid in the respect of the financial year in line withthe provisions of the relevant Finance Acts by the concerned generating company or the transmissionlicensee, as the case may be. The actual tax income on other income stream (i.e., income of non-generationor non-transmission business, as the case may be) shall not be considered for thecalculation of "effective tax rate".

(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as perthe 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 becalculated at the beginning of every financial year based on the estimated profit and tax to be paidestimated in line with the provisions of the relevant Finance Act applicable for that financial year to thecompany on pro-rata basis by excluding the income of non-generation or non-transmission business, asthe case may be, and the corresponding tax thereon. In case of generating company or transmissionlicensee paying Minimum Alternate Tax (MAT), "t" shall be considered as MAT rate including surchargeand cess.

34. The petitioner has claimed return on equity considering the base rate of 15.50% and effective tax rate of 23.939%. The respondent has submitted that petitioner has not computed effective tax rate for each year of the tariff period in accordance with the Regulations and also not furnished statement of how effective tax rate is 23.94%. Hence, the petitioner should be directed to comply with the Regulation 25(2) of the 2014 Tariff Regulation and submit computation statement of effective tax rate. Further for the year 2014-15 the income tax return filed for consideration of the actual tax paid during the year. In response the petitioner vide affidavit dated 5.11.2014 submitted that effective tax rate has been calculated based on

estimated profit and tax to be paid for the year 2014-15 as per Regulation 25(2) of the 2014 Tariff Regulations. The same has been considered for the years up to 31.3.2019.

35. The respondent BYPL has submitted that the petitioner has stated that total generating income is ₹827672 lakh and the tax paid is ₹186925 lakh as summarized under:

(₹ inlakh)

	Generation	**Non-Generation**	**Total**
Profit Before Tax as per Audited Financial Statement	827672	226983	1054660
Actual Tax paid as per NTPC	186925	35100	222025
Percentage	22.58%	15.46%	21.05%
MAT Rate	20.96%		20.96%
Corporate Tax	33.99%		

36. The respondent, BYPL has submitted that percentage of tax on non-generation was less than half the Corporate tax rate hence the detailed component wise taxability analysis of non-generating income is as under:

(₹ inlakh)

Computation of income tax on non-generating income	
Other Income (A)	231822
Transfer (B)	20190
Consultancy, supervision etc. (C)	10978
Total non-generating income(D=A-B+C)	222610
Non-taxable income (E)	54010
Taxable(residual) (F=D-E)	168600
Tax paid on non-generating company	35100
Tax rate(%)	20.82%
Corporate tax rate (%)	33.99%
Tax amount based on corporate tax rate	57607
Unexplained Gap	**22207**

37. The respondent BYPL has submitted that the petitioner should be directed to explain the gap of ₹22207 lakh in tax computation of non-generating income and this gap should be adjusted out of tax on generating income. It has also stated that as per audited financial statement of 2014-15, (Note-22, page no-138), "interest from beneficiaries" of ₹33282 lakh and Note-26, page no-279, ("Interest to beneficiaries"), of ₹9811 lakh maybe considered as non-generating income for the purpose of effective tax determination. It has also submitted that, as per Regulation 25A of the 2014 Tariff Regulations first amendment, the deferred tax

liability is to be excluded for computation of the effective tax rate. Hence, as per Audited Financial statements (AFS) for 2014-15, the deferred tax liability of ₹11396 lakh considered as receipts has been excluded for computation of effective tax rate. However, the petitioner is directed to determine the effective tax rate calculation based on Audited financial statements for 2014-16 and ITR (Income Tax Returns) filed.

38. It is observed that the Commission in order dated 27.7.2016 in Petition No. 271/GT/2014 has decided as under:

> *"During the hearing of NTPC petitions, beneficiaries had raised an issue on the computation of effective tax rate. This issue being not confined to a single petition and being generic in nature as the issue is applicable to all NTPC petitions uniformly need deliberation. On this issue against specific query through ROP, the petitioner vide its affidavit dated 8.1.2016 in Petition no. 280/GT/2014 (Farakka STPS, Stage-III) has filed Auditor's Certificate regarding deposit of advance tax on generation business for the year 2014-15 as well as Income Tax return for the financial year 2014-15 (Assessment Year 2015-16). We have examined the documents submitted and observed that the regulation prescribe computation of effective tax rate on the basis of tax paid, still we deem it proper to allow grossing up on MAT rate considering the fact that the matter is getting decided in the year 2016-17. Accordingly, the effective tax rate (MAT) of 20.961% has been considered for the year 2014-15 and 21.342% for the year 2015-16 onwards up to the year 2018-19 for the purpose of grossing up of base rate of 15.5%. Accordingly, the rate of Return on Equity works out to 19.610% for the year 2014-15 and 19.705% for the year 2015-16 onwards. This is however, subject to true-up. Accordingly, return on equity has been worked out as under:"*

39. In line with the above, the effective tax rate (MAT) of 20.961% for the year 2014-15 and 21.342% for the year 2015-16 onwards up to the year 2018-19 has been considered for purpose of grossing up of base rate of 15.5%. Accordingly, the return on equity allowed for the period 2014-19 is as under:-

(₹in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Notional Equity- Opening	84711.20	84711.20	84711.20	84711.20	84711.20
Addition of Equity due to additional capital expenditure	0.00	0.00	0.00	0.00	0.00
Normative Equity-Closing	**84711.20**	**84711.20**	**84711.20**	**84711.20**	**84711.20**
Average Normative Equity	84711.20	84711.20	84711.20	84711.20	84711.20
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Tax Rate for the year	20.961%	21.342%	21.342%	21.342%	21.342%
Rate of Return on Equity (Pre Tax)	19.610%	19.705%	19.705%	19.705%	19.705%
Return on Equity(Pre Tax) annualized	**16611.87**	**16692.34**	**16692.34**	**16692.34**	**16692.34**

Interest on Loan

40. 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 orthe 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:

Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.
(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.

(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.

(8) The changes to the terms and conditions of the loans shall be reflected from the date of such refinancing.

(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999,as amended from time to time, including statutory re-enactment thereof for settlement of the dispute:

Provided that the beneficiaries or the long term transmission customers /DICs shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan."

41. Interest on loan has been worked out as under:

(a) The gross normative loan of ₹84331.56 lakh (on cash basis) as on 1.4.2014 in order dated 24.3.2017 in Petition No. 299/GT/2014. In addition to this, loan component towards additional capitalization has been considered as per the approved debt equity ratio.

(b) Cumulative repayment of loan approved as on 31.3.2014 in order dated 24.3.2017 in Petition No.299/GT/2014 has been considered as on 1.4.2014. Addition to normative loan on account of the admitted additional capital expenditure has been considered on year to year basis.

(c) 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 generating station. Rate of interest has been considered as the weighted average rate of interest as provided by the petitioner as shown in Annexure-I has been considered for the purpose of tariff. The necessary calculation for interest on loan is as under:

(₹ in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Gross opening loan	84331.56	84331.56	84331.56	84331.56	84331.56
Cumulative repayment of loan upto previous year	84331.56	84331.56	84331.56	84331.56	84331.56
Net Loan Opening	0.00	0.00	0.00	0.00	0.00

	2014-15	2015-16	2016-17	2017-18	2018-19
Addition due to additional capital expenditure	0.00	0.00	0.00	0.00	0.00
Repayment of loan during the year	0.00	0.00	0.00	0.00	0.00
Less: Repayment adjustment on account of de-capitalization	0.00	0.00	0.00	0.00	0.00
Net Loan Closing	0.00	0.00	0.00	0.00	0.00
Average Loan	0.00	0.00	0.00	0.00	0.00
Weighted Average Rate of Interest of loan (%)	9.5800	9.5800	9.5800	9.5800	9.5800
Interest on Loan	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Depreciation

42. 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 12years 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 on1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2014 from the gross depreciable value of the assets.

(7) The generating company or the transmission license, 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."

43. The cumulative depreciation as on 31.3.2014 as considered in order dated 24.3.2017 has been considered for the purpose of tariff. Since useful life of the generating station as on 1.4.2014 exceeds 12 years from the effective date of COD of the generating station (1.12.1995), depreciation for the period 2014-19 has been calculated by spreading the remaining depreciable value over the balance useful life of the generating station for the respective years. Accordingly, depreciation has been computed as follows:

(₹ in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Opening Capital Cost	169042.76	169042.76	169042.76	169042.76	169042.76

	2014-15	2015-16	2016-17	2017-18	2018-19
Add: Additional Capital Expenditure	0.00	0.00	0.00	0.00	0.00
Closing Capital Cost	**169042.76**	**169042.76**	**169042.76**	**169042.76**	**169042.76**
Average Capital Cost	169042.76	169042.76	169042.76	169042.76	169042.76
Depreciable value (excluding land)@ 90%	147986.55	147986.55	147986.55	147986.55	147986.55
Balance depreciable Value	17050.53	14655.79	12261.05	9866.32	7471.58
Balance Useful life	7.12	6.12	5.12	4.12	3.12
Depreciation	**2394.74**	**2394.74**	**2394.74**	**2394.74**	**2394.74**
Cumulative depreciation at the end of the period (before adjustment)	133330.76	135725.49	138120.23	140514.97	142909.70
Less: Cumulative depreciation adjustment on account of de-capitalization	0.00	0.00	0.00	0.00	0.00
Cumulative depreciation (at the end of the period)	133330.76	135725.49	138120.23	140514.97	142909.70

O&M Expenses

44. Regulation 29 (1) (a) of the 2014 Tariff Regulations provides for 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
23.90	25.40	27.00	28.70	30.51

45. The petitioner has claimed O&M expense in accordance with above regulation as under:-

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
20076.00	21336.00	22680.00	24108.00	25628.40

46. The respondent BRPL has submitted that the petitioner may not be allowed to claim variation in O&M expenses as the same is not applicable under the 2014 Tariff Regulations.

47. Accordingly, the year-wise O&M expenses claimed by the petitioner are in accordance with the above regulations and hence allowed as under:

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
20076.00	21336.00	22680.00	24108.00	25628.40

Water Charges

48. 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"

49. In terms of the above regulation, 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. In the present petition, the petitioner has submitted the details of water charges for the year 2013-14 as shown under.

Description	Remarks
Type of Plant	Coal
Type of cooling water system	Closed Circuit/Natural Draft
Total Water Charges	₹150.40 lakh

50. The petitioner has claimed water charges based on the expected water consumption of the generating station for the period 2014-19.

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
150.40	159.95	170.11	180.91	192.40

51. The respondent UPPCL has submitted that water charges should be allowed after considering various factors. It has also submitted that the water consumption should be

determined on normative basis based on designed capacity less reduction on various water conservation measures and the rate shall be on actual basis. Accordingly, it has submitted that the contention of the petitioner that water charges are allowed on actuals may be rejected. The respondent has further submitted that Regulation 29(2) of the 2014 Tariff Regulations does not have provision for escalation of water charges and hence the petitioner should submit the basis for consideration of the escalation factor.

52. The respondent BYPL has submitted that the petitioner has considered water charges as one month working capital under O&M Expense and in terms of Regulation 29(2) of the 2014 Tariff Regulations, the same may be allowed separately. Accordingly, it has submitted that the same shall not be considered for computation in interest in working capital.

53. In response the petitioner has submitted that tariff for the 2014-19 period is based on projections and is subject to revision based on truing-up of the actual capital expenditure as per the 2014 Tariff Regulations. Accordingly, in line with Regulation 29(2) of the 2014 Tariff Regulations, the petitioner has furnished the details of water charges. The petitioner has referred to the Statement of Reason for the 2014 Tariff Regulations and has submitted that the 2014 Tariff Regulation do not provide for recovery of water charges on normative basis. It has further submitted that since water charges is required to be paid to the relevant authority, the same has been projected for the year 2014-15 based on actual expenditure incurred for 2013-14. It has further stated that the projections have been made by escalating the value of 2014-15 for 6.35% as per escalation rate considered for O&M expenses for subsequent years for the period 2014-19 and water charges are subject to retrospective adjustment based on actual expenditure incurred and the details provided at the time of truing up.

54. The petitioner was directed vide letter dated 22.6.2016 to submit the details of contracted quantum of water, allocated quantity of water and actual water consumption along with rate of water charges for the last 5 years i.e. 2009-10 to 2013-14 and the relevant notification in support of the claim and response, the petitioner has submitted that there is a

single reservoir for meeting water requirement for the whole Dadri station and the UP Irrigation Department is accordingly raising invoices for payment of water charges for the whole generating station. It has however submitted that the actual expenditure incurred for 2013-14 towards water charges for the entire Dadri generating station was apportioned in the ratio of steam turbine generation capacity of Dari Stage-I (840 MW), Dadri Stage-II (980 MW) and Dadri gas station (2 steam turbine of 154.54 MW capacity each) which was claimed for the period 2014-19 formed the basis of water charges of respective stages for 2014-15. The petitioner further submitted that the rate of water charges as per notification of the UP Irrigation Department is ₹3.12 per 1000 cubic feet up to 15.7.2011 and the same has been revised to ₹12.48 per 1000 cubic feet on consumption basis and the rate of royalty as per notification of UP Irrigation Department is ₹115000.00 per cusec per annum which has been later revised to ₹600000.00 per cusec per annum on consumption basis. The petitioner has also submitted the detailed calculations regarding the same and has further submitted that projections for subsequent years have been made by escalating the projected value of 2014-15 at 6.35% as per escalation considered by the Commission for O&M charges for the period 2014-19. Wit has also stated that the water charges claimed by the petitioner are subject to retrospective adjustment based on the actual expenditure incurred.

55. As per provisions of Regulation 29(2) of the 2014 Tariff Regulations, water charges are to be allowed separately. It was observed from the above that the petitioner has claimed water charges for the year 2014-15 on the basis of water charges during 2013-14 and has escalated the same @ of 6.35% on year to year for the period 2014-19 without any proper reasoning. The petitioner has not furnished the actual water consumption charges for the year 2014-15. In this backdrop, the actual water charges have been computed based on water consumption in 2013-14 at the rates applicable for March, 2014. The petitioner has not furnished any document in support of the escalation of 6.35%. Based on this, water charges allowed for the period 2014-19 are as under:

(₹in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
150.40	150.40	150.40	150.40	150.40

56. The water charges allowed as above is subject to truing-up at the end of the tariff period based on the relevant information to be submitted by the petitioner. Accordingly, the total O&M expenses including water charges as allowed for the purpose of tariff is as under:

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Water charges as claimed	150.40	159.95	170.11	180.91	192.40
Water charges as allowed	**150.40**	**150.40**	**150.40**	**150.40**	**150.40**

57. The total O&M charges allowed for the period 2014-19 including water charges are as under:

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses allowed	20076.00	21336.00	22680.00	24108.00	25628.40
Water charges allowed	150.40	150.40	150.40	150.40	150.40
Total	**20226.40**	**21486.40**	**22830.40**	**24258.40**	**25778.80**

Capital spares

58. The petitioner has not claimed any capital spares on projection basis, during the period 2014-19. The petitioner was directed to submit details of consumption of capital spares for the last 5 years i.e. during 2009-14 along with relevant notification in support of the claim. In response the petitioner has submitted the details of capital spares which are summarized as shown below:

(₹ in lakh)

Years	Capital Spares
2009-10	195.86
2010-11	232.09
2011-12	144.77
2012-13	224.33
2013-14	271.85

59. As the petitioner has not claimed capital spares on projection basis during the period 2014-19. Accordingly, the same has not been considered in this order.

Operational Norms

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

Target Availability (%)	83.00
Heat Rate (kCal/kWh)	2450.00
Auxiliary Energy Consumption (%)	8.50
Specific Oil Consumption (ml/ kWh)	0.50

61. The respondent BRPL has submitted that the petitioner has not detailed out the energy consumed for supply of power to housing colony and other facilities. The petitioner was directed to submit details of sale of washery rejects and revenue earned from it. In response, the petitioner has submitted that the generating station has been receiving both raw coal and washed coal from Coal India Limited (CIL). It has also submitted that the washing of coal is done by CIL at mine and the petitioner makes payment of the notified price of washery coal as billed by CIL. It has further submitted that any washery rejects should be the property of CIL and accordingly there is no possibility of income from sale of rejects from washery of coal during the period 2014-19.

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

Normative Annual Plant Availability Factor (NAPAF)

63. 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."

64. The petitioner has considered the Target Availability of 83% for the period 2014-19. The Commission due to shortage of domestic coal supply has relaxed the Target Availability norm to 83% for first 3 years from 1.4.2014 and the same shall be reviewed after 3 years. Accordingly, in terms of the Regulation 36(A) of the 2014 Tariff Regulations, the Target Availability of 83% is considered for the period 2014-17 and 85% for the period 2017-19.

Heat Rate (kCal/kWh)

65. Regulation 36(C)(a)(ii) of the 2014 Tariff Regulations, provides the Gross Station Heat Rate of 2450 kCal/kWh for the generating station and the petitioner has claimed the same.

66. Accordingly, the heat rate considered by the petitioner is as per norms and the same is allowed.

Auxiliary Energy Consumption

67. Regulation 36(E)(b) of Tariff Regulations, 2014 provides Auxiliary Energy Consumption of 8.50% for this generating station. The petitioner has claimed Auxiliary Energy Consumption at 8.50% during the period 2014-19 and the same is allowed for the purpose of tariff.

Specific Oil Consumption

68. Regulation 36(D)(a) of the 2014 Tariff Regulations, provides secondary fuel oil consumption of 0.50 ml/kWh for coal-based generating station.

69. The petitioner had claimed secondary fuel oil consumption of 0.50 ml/kWh for coal-based generating station in terms of the above regulation and the same has been allowed for the period 2014-19.

Interest on Working Capital

70. Sub-section (1) of clause (1) of Regulation 28 of the 2014 Tariff Regulations provides asunder:

“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

71. The petitioner has claimed cost for fuel components in working capital based on the as fired GCV of coal for average fuel data for preceding three months of January, 2014, February, 2014 and March, 2014 and has considered the same for each year of the tariff period as under:

(₹in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal for Generation for 30 days	15185.81	15227.42	15185.81	15185.81	15185.81
Cost of Main Secondary Fuel Oil for 2 months	185.64	186.15	185.64	185.64	185.64

72. The respondents, UPPCL and BYPL has submitted that the petitioner has considered GCV as on “fired basis” since the petitioner’s company does not have the infrastructure for measuring the representative figure of “as received” basis. It has further submitted that the petitioner should furnish details such as details of current infrastructure like lab, equipment

etc. to measure GCV at the time of firing along with the Auditor's Certificates as mentioned as per Note-2 of Form-15. The respondent, BYPL has submitted that the petitioner should be directed to revise the bills raised till date on the basis of GCV as billed or alternatively the Commission should consider some benchmark like 0.25% of billed GCV as normative allowance for revising the previous bills. The respondent BRPL has submitted that the petitioner has not made any arrangement for measurement of GCV "as received" basis even by resorting to manual sampling. It has further submitted that there is a huge gap between the weighted average GCV of coal "as billed" and "as fired" during the months of January, Feb and March 2010 in respect of Rihand STPS, Stage-I as under below:

(₹ in lakh)

Sl No	Description	Jan 2014	Feb 2014	March 2014
1	Weighted average GCV of coal as billed in kCal/kg	4571.12	4449.93	4873.00
2	Weighted average GCV of coal as fired in kCal/kg	3766.00	3875.00	3726.00
	Difference	**805.12**	**574.93**	**1147.00**

73. It has further submitted that there is a huge difference in weighted average GCV of coal as billed and as fired and the loss in GCV due to self-ignition, windage, spillage etc. is only miniscule proportion of the difference.

74. The respondent BYPL vide affidavit dated 29.3.2016 submitted that blending ratio of domestic coal and imported coal should be furnished by the petitioner for the period 2014-19 so that in case of any variation in cost as well as ratio prior permission of beneficiary may be obtained in terms of the 2014 Tariff Regulations. It has further submitted that while approving the variable cost, the petitioner should be directed to provide the status of FSA and actual coal supply under FSA shall be analyzed so that permission of beneficiary be obtained by the petitioner before procuring imported coal, as procurement imported coal would result in increase of ECR.

75. BRPL vide affidavit dated 29.4.2016 submitted that the petitioner has not provided details of stock storage neither in bills nor in any declaration and hence the petitioner should be directed to submit actual details of cost of coal for all its generating stations as per the 2014 Tariff Regulations. We direct the petitioner to submit the same at the time of truing up of tariff.

76. In response, the petitioner has submitted that the energy charges are calculated based on the data available with the petitioner at the time of truing up of the petition No. 299/GT/2014. The determination of representative GCV depends on the representative nature of the sample. The petitioner does not have such infrastructure for measuring representative figures of “as received” GCV for the required months. It has stated that the matter of calculation of ECR using GCV as fired and as received has been challenged in the Hon’ble High Court of Delhi and the petitioner shall amend, if required, Form-15 and ECR calculation based on the directions contained in the Judgment of the Hon’ble High Court of Delhi. Accordingly it has stated that the Auditor’s certificate in respect of Form-15, has been submitted vide affidavit dated 29.10.2014.

77. The petitioner has claimed Energy Charge Rate (ECR) of 328.081 Paise/kWh based on the weighted average price & GCV of coal (as fired basis) & Oil procured and burnt for the preceding three months i.e. January, 2014, February, 2014 and March, 2014. However, as per the 2014 Tariff Regulations, fuel components and ECR is to be worked out and allowed based on the price and GCV of primary fuel on ‘as received’ basis for the preceding three months i.e. January, February and March, 2014 respectively.

78. The Commission in various tariff orders, pertaining to the determination of tariff, of Simhadri Stage-I (order dated 27.6.2016 in Petition No. 270/GT/2014), Vindhyachal STPS Stage-II (order dated 6.2.2017 in Petition No. 327/GT/2014), Mauda Stage-I (order dated 11.2.2017 in Petition No. 328/GT/2014), Ramagundam Stage-I & II (order dated 24.1.2017 in Petition No. 292/GT/2014), Kahalgaon stage-II (order dated 21.1.2017 in Petition No.

283/GT/2014), Rihand STPS Stage-III (order dated 6.2.2017 in Petition No. 372/GT/2014) etc., of the petitioner for the period 2014-19 had allowed fuel components and 2 months of Energy Charges in working capital considering the GCV of coal on 'as billed' basis and had accordingly allowed the adjustment formulae for total moisture as under:

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

Where: GCV=Gross Calorific value of coal
TM=Total moisture
IM= Inherent moisture

79. In the absence of GCV of coal on 'as billed' as well as on 'as received' basis for the preceding 3 months i.e. January, 2014, February, 2014 and March, 2014, the computation of fuel component and 2 months Energy charges in working capital has not been considered for the period 2014-19. In view of this, Interest on Working capital (IWC) is allowed without considering the fuel components and 2 months Energy Charges in Working Capital. We direct the petitioner to obtain the GCV 'as billed' from the coal supplier and work out the IWC components.

Maintenance spares

80. Maintenance spares in the working capital claimed by the petitioner, are as under:

(₹in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
4045.28	4299.28	4570.02	4857.78	5164.16

81. The maintenance spares allowed in terms of Regulation 28(1)(a)(iv) of the 2014 Tariff Regulation are as under:

(₹in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
4045.28	4297.28	4566.08	4851.68	5155.76

Receivables

82. Receivables equivalent to two months of capacity charge and energy charges has been worked out and allowed as under:

(₹in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
*Secondary fuel oil (two months)	190.12	190.64	190.12	190.12	190.12
Fixed Charges (two months)	6830.01	7066.80	7304.70	7557.49	7826.64
Total	**7020.12**	**7257.44**	**7494.82**	**7747.61**	**8016.76**

** The Commission has not allowed the fuel charges as a part of the energy charges as discussed in Para 79. However the expenditure on account of Secondary fuel oil component has been considered as a part of Receivables.*

O&M Expenses

83. O&M expenses for 1 month claimed by the petitioner are in line with the 2014 Tariff Regulation and are allowed as under:

(₹in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
1685.53	1790.53	1902.53	2021.53	2148.23

Rate of interest on working capital

84. 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."

85. In terms of the above regulations, SBI PLR of 13.50% (Bank rate 10.00 + 350bps) 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- 30 days	0.00	0.00	0.00	0.00	0.00
Cost of coal towards generation- 30 days	0.00	0.00	0.00	0.00	0.00

Cost of secondary fuel oil- 2 months	190.12	190.64	190.12	190.12	190.12
O & M expenses- 1 Month	1685.53	1790.53	1902.53	2021.53	2148.23
Maintenance Spares	4045.28	4297.28	4566.08	4851.68	5155.76
Receivables- 2 months	7020.12	7257.44	7494.82	7747.61	8016.76
Total Working Capital	**12941.06**	**13535.89**	**14153.55**	**14810.94**	**15510.87**
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	**1747.04**	**1827.35**	**1910.73**	**1999.48**	**2093.97**

86. Regulation 17 of the 2014 Tariff Regulation provides as under:

(1) In case of coal-based or lignite-fired thermal generating station or a unit thereof, a separate compensation allowance shall be admissible to meet expenses on new assets of capital nature which are not admissible under Regulation 14 of these regulations, and in such an event, revision of the capital cost shall not be allowed on account of compensation allowance but the compensation allowance shall be allowed to be recovered separately.

(2) The Compensation Allowance shall be allowed in the following manner from the year following the year of completion of 10, 15, or 20 years of useful life:

Years of operation	Compensation Allowances (₹ in Lakh/MW/year)
0-10	NIL
11-15	0.20
16-20	0.50
21-25	1.00

87. The petitioner has claimed Compensation allowance during the period 2014-19 as under:

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
630.00	**735.00**	**840.00**	**840.00**	**630.00**

88. Based on the above, the Compensation allowance allowed for the units of the generating station is as under:

Name of Unit	Unit Size (MW)	COD	No. of years from COD till 31.3.2014	2014-15	2015-16	2016-17	2017-18	2018-19
Unit-I	210	1.01.1993	21.250	210.00	210.00	210.00	210.00	-

Name of Unit	Unit Size (MW)	COD	No. of years from COD till 31.3.2014	2014-15	2015-16	2016-17	2017-18	2018-19
Unit-II	210	1.02.1994	20.167	105.00	210.00	210.00	210.00	210.00
Unit-III	210	1.04.1995	19.000	105.00	105.00	210.00	210.00	210.00
Unit-IV	210	1.12.1995	18.333	105.00	105.00	105.00	210.00	210.00
	840			**630.00**	**735.00**	**840.00**	**840.00**	**630.00**

89. Regulation 16 of the 2014 Tariff Regulation provides as under:

"(1) In case of coal-based/lignite fired thermal generating station, the generating company, instead of availing R&M may opt to avail a "special allowance" in accordance with the norms specified in this regulation, as compensation for meeting the requirement of expenses including renovation and modernization beyond the useful life of the generating station or a unit thereof, and in such an event, revision of the capital cost shall not be allowed and the applicable operational norms shall not be relaxed but the special allowance shall be included in the annual fixed cost:

Provided that such option shall not be available for a generating station or unit for which renovation and modernization has been undertaken and the expenditure has been admitted by the Commission before commencement of these regulations, or for a generating station or unit which is in a depleted condition or operating under relaxed operational and performance norms.

(2) The Special Allowance shall be @ Rs. 7.5 lakh/MW/year for the year 2014-15 and thereafter escalated @ 6.35% every year during the tariff period 2014-15 to 2018-19, unit wise from the next financial year from the respective date of the completion of useful life with reference to the date of commercial operation of the respective unit of generating station:
Provided that in respect of a unit in commercial operation for more than 25 years as on 1.4.2014, this allowance shall be admissible from the year 2014-15:

Provided further that the special allowance for the generating stations, which, in its discretion, has already availed of a „special allowance" in accordance with the norms specified in clause (4) of regulations 10 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff Determination) Regulations, 2009, shall be allowed Special Allowance by escalating the special allowance allowed for the year 2013-14 @ 6.35% every year during the tariff period 2014-15 to 2018-19.

(3) In the event of granting special allowance by the Commission, the expenditure incurred or utilized from special allowance shall be maintained separately by the generating station and details of same shall be made available to the Commission as and when directed to furnish details of such expenditure."

90. The petitioner has claimed Special allowance of ₹2014.79 lakh in 2018-19 and the same is allowed in terms of above regulation.

Annual Fixed Charges

91. 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	2394.74	2394.74	2394.74	2394.74	2394.74
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	16611.87	16692.34	16692.34	16692.34	16692.34
Interest on Working Capital	1747.04	1827.35	1910.73	1999.48	2093.97
O&M Expenses	20226.40	21486.40	22830.40	24258.40	25778.80
Sub-Total	**40927.53**	**42348.17**	**43775.69**	**45292.44**	**46907.33**
Compensation Allowance	630.00	735.00	840.00	840.00	630.00
Special Allowance	0.00	0.00	0.00	0.00	2014.79
Total	**41610.05**	**43135.82**	**44668.21**	**46184.96**	**49604.64**

Month to Month Energy Charges

92. 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 formula*:
>
> *(a) For coal based and lignite fired stations*
> *ECR = {(GHR – SFC x CVSF) x LPPF / CVPF+SFC x LPSFi + LC x LPL} x 100 / (100 – AUX)*
>
> *Where,*
>
> *AUX = Normative auxiliary energy consumption in percentage.*
> *CVPF = Gross calorific value of primary fuel as received, in kCal per kg, per litre or per standard cubic metre, as applicable.*
> *CVSF = Calorific value of secondary fuel, in kCal per ml.*
> *ECR = Energy charge rate, in Rupees per kWh sent out.*
> *GHR = Gross station heat rate, in kCal per kWh.*
> *LC = Normative limestone consumption in kg per kWh.*
> *LPL = Weighted average landed price of limestone inRupees per kg.*
> *LPPF = Weighted average landed price of primary fuel, in Rupees per kg*
> *SFC = Normative Specific fuel oil consumption, in ml per kWh.*

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

Provided that energy charge rate for a gas/liquid fuel based station shall be adjusted for open cycle operation based on certification of Member Secretary of respective Regional Power Committee for the open cycle operation during the month.

93. The petitioner shall compute and claim the Energy Charges on month to month basis from the beneficiaries based on the formulae given under Regulation 30(6)(a) of the 2014 Tariff Regulations, 2014 read with Commission's order dated 25.1.2016 in Petition No. 283/GT/2014.

94. The petitioner has been directed by the Commission in its order dated 19.2.2016 in Petition No. 33/MP/2014 to introduce helpdesk to attend to the queries of the beneficiaries with regard to the Energy Charges. Accordingly, contentious issues if any, which arise regarding the Energy Charges in respect of this generating station, should be sorted out with the beneficiaries at the Senior Management level.

Application Fee and Publication Expenses

95. 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 period2014-15 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.

96. The annual fixed charges approved for the period 2014-19 as above are subject to truing-up in terms of Regulation 8 of the 2014 Tariff Regulations.

97. Petition No. 330/GT/2014 is disposed of in terms of the above.

Sd/-	**Sd/-**	**Sd/-**	**Sd/-**
(Dr. M.K.Iyer)	**(A. S. Bakshi)**	**(A. K. Singhal)**	**(Gireesh. B. Pradhan)**
Member	**Member**	**Member**	**Chairperson**

Annexure-I

DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO (2014-19)

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Net Loans Opening	10138.00	7603.50	5069.00	2534.50	-
Add: Drawl(s) during the year	-	-	-	-	-
Less: Repayment(s) of Loan during the year	2534.50	2534.50	2534.50	2534.50	-
Net Closing Loan	7603.50	5069.00	2534.50	0.00	-
Average Net Loan	8870.75	6336.25	3801.75	1267.25	-
Rate of Interest on Loan (%)	9.5800%	9.5800%	9.5800%	9.5800%	9.5800%
Interest on Loan	849.82	607.01	364.21	121.40	-