

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 191/GT/2020

Coram:

Shri I.S. Jha, Member

Shri Arun Goyal, Member

Shri P.K. Singh, Member

Date of Order: 28th November, 2022

IN THE MATTER OF

Petition for revision of tariff of Singrauli Super Thermal Power Station (2000 MW) for the period from 1.4.2014 to 31.3.2019, after truing up exercise.

AND

IN THE MATTER OF

NTPC Limited,
NTPC Bhawan, Scope Complex
Core-7, Institutional Area, Lodhi Road,
New Delhi-11003

.... Petitioner

Vs

1. Uttar Pradesh Power Corporation Limited,
Shakti Bhawan, 14, Ashok Marg,
Lucknow – 226 001
2. Rajasthan Urja Vikas Nigam Limited,
Vidyut Bhawan, Janpath,
Jaipur – 302 005
3. Tata Power Delhi Distribution Limited,
Grid Substation, Hudson Road,
Kingsway Camp, Delhi – 110 009
4. BSES Rajdhani Power Limited,
2nd Floor, B-Block, BSES Bhawan, Nehru Place,
New Delhi – 110 019
5. BSES Yamuna Power Limited,
Shakti Kiran Building,
Karkardooma, Delhi – 110 092
6. Haryana Power Purchase Centre,
Shakti Bhawan, Sector- VI,



Panchkula, Haryana – 134 109

7. Punjab State Power Corporation Limited,
The Mall, Patiala – 147 001
8. Himachal Pradesh State Electricity Board Limited,
Kumar Housing Complex Building- II,
Vidyut Bhawan, Shimla – 171 004
9. Power Development Department,
Government of J&K,
Srinagar
10. Electricity Department,
Union Territory of Chandigarh,
Addl. Office Building, Sector- 9D, Chandigarh
11. Uttarakhand Power Corporation Limited,
Urja Bhawan, Kanwali Road, Dehradun,
Uttarakhand – 248 001

.....Respondents

Parties Present:

Ms. Swapna Seshadri, Advocate, NTPC
Shri Anand K. Ganesan, Advocate, NTPC
Ms. Ritu Apurva, Advocate, NTPC
Shri Jai Dhanani, Advocate, NTPC
Shri R.B. Sharma, Advocate, BRPL
Ms. Megha Bajpeyi, BRPL
Shri Buddy Ranganathan, Advocate, BYPL
Shri Rahul Kinra, Advocate, BRPL & BYPL
Shri Aditya Ajay, Advocate, BRPL & BYPL
Shri Hemant Khera, Advocate, BRPL & BYPL
Shri Abhishek Srivastava, BYPL
Shri Sameer Singh, BYPL

ORDER

This petition has been filed by the Petitioner, NTPC Limited for truing up of tariff of Singrauli Super Thermal Power Station (2000 MW) (hereinafter referred to as 'the generating station') for the 2014-19, in accordance with Regulation 8(1) 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 2000 MW comprises of five units of 200 MW each and two units of 500 MW each. The dates of commercial operation of the units of the generating station are as under:

Unit	COD
Unit-I	1.6.1982
Unit-II	1.2.1983
Unit-III	1.7.1983
Unit-IV	1.1.1984
Unit-V	1.6.1984
Unit-VI	1.7.1987
Unit-VII/ Generating Station	1.5.1988

3. The Commission vide its order dated 21.12.2015 in Petition No. 315/GT/2014, while determining the true up tariff of the generating station for the 2009-14 tariff period, had approved the closing capital cost of Rs.124746.99 lakh, on cash basis, as on 31.3.2014. Subsequently, the Commission vide its order dated 28.7.2016 in Petition No. 290/GT/2014 had approved the tariff of the generating station for the 2014-19 tariff period, considering the opening capital cost of Rs.124746.99 lakh (the corresponding un-discharged liabilities being Rs.340.63 lakh out of which Rs.206.92 lakh pertains to period upto 31.3.2009 and balance Rs.133.70 lakh pertains to 2009-14 tariff period), on cash basis, as on 1.4.2014. The capital cost and annual fixed charges allowed by order dated 28.7.2016 for the 2014-19 tariff period are as under:

Capital Cost allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	124746.99	124746.99	124746.99	124746.99	124746.99
Add: Projected additional capital expenditure	0.00	0.00	0.00	0.00	0.00
Closing capital cost	124746.99	124746.99	124746.99	124746.99	124746.99
Average capital cost	124746.99	124746.99	124746.99	124746.99	124746.99

Annual Fixed Charges allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	2.16	2.16	2.16	2.16	2.16
Interest on Loan	845.37	897.53	966.35	1018.56	1019.87



Return on Equity	11808.18	11865.40	11865.40	11865.40	11865.40
Interest on Working Capital	7683.62	7849.98	8009.65	8304.55	8492.27
O&M Expenses	40689.64	43199.64	45869.64	48709.64	51729.64
Special Allowance	13713.85	14584.68	15510.81	16495.75	17543.23
Total	74742.84	78399.40	82224.01	86396.06	90652.57

4. Regulation 8(1) of the 2014 Tariff Regulations provides as under:

“8. Truing up

(1) The Commission shall carry out truing up exercise along with the tariff petition filed for the next tariff period, with respect to the capital expenditure including additional capital expenditure incurred up to 31.3.2019, as admitted by the Commission after prudence check at the time of truing up:

Provided that the generating company or the transmission licensee, as the case may be, shall make an application for interim truing up of capital expenditure including additional capital expenditure in FY 2016-17.”

5. In terms of the above regulations, the Petitioner vide affidavit dated 3.1.2020 has filed the present Petition for truing up of tariff of the generating station for the 2014-19 tariff period. The capital cost and annual fixed charges claimed by the Petitioner for the 2014-19 tariff period are as under:

Capital Cost claimed

(Rs. in lakh)

		2014-15	2015-16	2016-17	2017-18	2018-19
A	Opening capital cost	124746.99	124586.11	125039.62	124398.62	123964.77
B	Addition during the year	0.00	517.16	8.41	465.19	44.19
C	De-capitalisation during the year	160.88	81.34	721.55	899.04	1038.03
D	Reversal during the year	0.00	0.00	0.00	0.00	0.00
E	Discharges during the year	0.00	17.69	72.14	0.00	10.00
F	Closing capital cost	124586.11	125039.62	124398.62	123964.77	122980.92
G	Average capital cost	124666.55	124812.86	124719.12	124181.69	123472.85

Annual Fixed Charges claimed

(Rs in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	2.16	15.82	29.69	42.19	55.64
Interest on Loan	871.68	895.82	908.97	841.48	865.69
Return on Equity	11803.53	11869.35	11863.81	11832.04	11821.21
Interest on Working Capital	9288.05	9506.43	9862.17	10246.47	10482.61
O&M Expenses	42777.11	45989.59	46700.13	49984.87	53003.15
Special Allowance	13713.85	14584.68	15510.81	16495.75	17543.23
Sub-total (A)	78456.39	82861.70	84875.58	89442.80	93771.53
Additional O&M Expenses					
Impact of Pay Revision	0.00	99.38	5268.56	5380.34	5966.69
Impact of GST	0.00	0.00	0.00	361.91	546.93
Total Additional O&M Expenditures (B)	0.00	99.38	5268.56	5742.25	6513.62
Total (A+B)	78456.39	82961.08	90144.14	95185.05	100285.15



6. The Respondent UPPCL has filed its replies vide affidavits dated 8.6.2020 and 28.8.2021 and the Petitioner has filed its rejoinders to the said replies vide affidavits dated 26.5.2021 and 8.11.2021. The Respondent TPDDL has filed its reply vide affidavit dated 26.8.2021 and the Petitioner has filed its rejoinder to the same vide affidavit dated 8.11.2021. The Respondent BYPL has filed its reply vide affidavit dated 23.7.2021 and the Petitioner has filed its rejoinder to the same vide affidavit dated 8.11.2021. The Petitioner has also filed additional information vide affidavit dated 30.6.2021 after serving copies on the Respondents. The Petition was heard through video conferencing on 31.3.2022 and the Commission after permitting the parties, to complete pleadings in the matter, reserved its order. Based on the submissions of the parties and the documents available on record and on prudence check, we proceed for truing up the tariff of the generating station for the 2014-19 tariff period, as stated in the subsequent paragraphs.

Capital Cost

7. Regulation 9(1) 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.

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

“(3) 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 capitalisation and de-capitalisation for the respective year of tariff as determined in accordance with Regulations 14;

expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15;”

8. The Commission vide its order dated 28.7.2016 in Petition No. 290/GT/2014 had approved the annual fixed charges of the generating station for the 2014-19 tariff period considering the opening capital cost of Rs. 124746.99 lakh (on cash basis).



Accordingly, in terms of Regulation 9(3) of the 2014 Tariff Regulations, the capital cost of Rs.124746.99 lakh has been considered as opening capital cost as on 1.4.2014.

9. Regulation 14 of the 2014 Tariff Regulations, provides as under:

“14. Additional Capitalisation and De-capitalisation:

(1) The capital expenditure in respect of the new project or an existing project incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:

(i) Un-discharged liabilities recognised to be payable at a future date;

(ii) Works deferred for execution;

(iii) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 13;

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

v) Change in law or compliance of any existing law:

Provided that the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognised to be payable at a future date and the works deferred for execution shall be submitted along with the application for determination of tariff.”

(2) The capital expenditure incurred or projected to be incurred in respect of the new project on the following counts within the original scope of work 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) Deferred works relating to ash pond or ash handling system in the original scope of work; and

(iv) 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.

(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-materialisation 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 stabilisers, refrigerators, coolers, computers, fans, washing machines, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for additional capitalisation 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.”

10. The Commission vide its order dated 28.7.2016 in Petition No. 290/GT/2014 had not allowed any projected additional capital expenditure for the 2014-19 tariff



period. The additional capital expenditure claimed by the Petitioner, duly supported by auditor certificate, for the 2014-19 tariff period, is as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Closing gross block as per audited books *	191951.11	200697.05	78755.29	95586.83	122289.52
Less: Opening gross block as per audited books *	166913.90	191951.11	53043.22	78755.29	95586.83
Additional capital expenditure as per audited books *	25037.21	8745.94	25712.07	16831.54	26702.69
Less: Additional capital expenditure pertaining to other Stages/ Solar #	9270.39	0.00	306.32	100.36	(-) 9496.92
Additional capital expenditure as per books for the generating station #	15766.82	8745.94	25405.75	16731.18	36199.62
Less: IND AS adjustment #	0.00	0.00	6023.76	4149.51	4112.02
Additional capital expenditure as per IGAAP for the generating station #	15766.82	8745.94	19381.99	12581.68	32087.60
Less: Exclusions	15927.70	8178.42	20094.45	13015.12	33081.44
Additional capital expenditure claimed for the generating station (on accrual basis)	(-) 160.88	567.52	(-) 712.46	(-) 433.45	(-) 993.84
Less: Un-discharged liabilities included above	0.00	131.70	0.69	0.41	0.00
Additional capital expenditure claimed for the generating station (on cash basis)	(-) 160.88	435.82	(-) 713.14	(-) 433.85	(-) 993.84
Add: Discharges of liabilities	0.00	17.69	72.14	0.00	10.00
Net additional capital expenditure claimed including discharges for the generating station (on cash basis)	(-) 160.88	453.52	(-) 641.00	(-) 433.85	(-) 983.84

* As per IGAAP for the period 2014-16 and IND AS for the period 2016-19. # Duly certified by the auditor.

Exclusions

11. The summary of exclusions from the books of accounts, as claimed (on accrual basis) by the Petitioner for the 2014-19 tariff period, is as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Capitalization of R&M related works	770.97	3623.72	5116.55	4451.63	25730.49
De-capitalization related to R&M works	(-) 69.49	0.00	(-) 261.75	0.00	0.00
Items disallowed as projected additional capital expenditure for the 2014-19 tariff period	10099.22	278.04	8308.65	57.37	59.74
Loan FERV	547.91	87.21	(-) 1.35	0.00	1366.32



Capitalization of capital spares	5887.08	7967.63	5407.34	7041.61	7587.25
Inter-unit transfer of assets	(-) 7.76	(-) 991.11	1102.76	(-) 2.89	1626.11
Reversal of Liabilities	(-) 4.20	(-) 28.68	(-) 0.18	(-) 51.59	(-) 9.75
Capitalization of Miscellaneous Bought Out Assets (MBOA's)	573.01	361.94	597.81	1969.57	270.73
Expenses related to 5 KM electrification scheme	0.00	(-) 206.61	0.00	0.00	0.00
De-capitalization of spares (not part of capital cost)	(-) 1868.52	(-) 2650.55	(-) 50.87	(-) 318.12	(-) 156.51
De-capitalization of MBOA's (not part of capital cost)	(-) 0.53	(-) 54.76	(-) 101.13	(-) 22.51	(-) 556.88
De-capitalisation of MBOA (part of capital cost)	0.00	(-) 208.40	(-) 23.38	(-) 109.93	(-) 2836.07
Re-grouping of assets	0.00	0.00	0.00	0.00	0.00
Total Exclusions Claimed	15927.70	8178.42	20094.45	13015.12	33081.44

12. We examine the exclusions claimed by the Petitioner for the 2014-19 tariff period in the subsequent paragraphs:

(a) Capitalization of R&M related works

13. The Petitioner has claimed exclusion of expenditure of Rs.770.97 lakh in 2014-15, Rs.3623.72 lakh in 2015-16, Rs.5116.55 lakh in 2016-17, Rs.4451.63 lakh in 2017-18 and Rs.25730.49 lakh in 2018-19, incurred towards R&M works of the generating station. The Petitioner has also claimed de-capitalization of Rs.69.49 lakh in 2014-15 and 261.75 lakh in 2016-17, towards these R&M works. In justification to the same, the Petitioner has submitted that since it is availing special allowance in lieu of R&M expenses under Regulation 16(1) of the 2014 Tariff Regulations, hence the expenditure towards R&M works with corresponding de-capitalization/adjustments have been claimed under exclusion. Since, the generating station has already elapsed its useful life and special allowance is being allowed to the generating station, the exclusion claimed under this head is allowed for the purpose of tariff. Further, since the capitalization of the R&M related expenditure is not allowed the corresponding de-capitalization is also not considered for the purpose of tariff and are being allowed in exclusion.



(b) Items disallowed as projected additional capital expenditure

14. The Petitioner has claimed exclusion of expenditure of Rs.10099.22 lakh in 2014-15, Rs.278.04 lakh in 2015-16, Rs.8308.65 lakh in 2016-17, Rs.57.37 lakh in 2017-18 and Rs.59.74 lakh in 2018-19, towards various assets disallowed as projected additional capital expenditure vide Commission's order dated 28.7.2016 in Petition No. 290/GT/2014. In justification, the Petitioner has submitted that Commission vide its order dated 28.7.2016 in Petition No. 290/GT/2014, had not allowed the projected additional capitalization towards these schemes, stating that these schemes shall be met from the Special Allowance allowed to the generating station. Accordingly, these works are kept under exclusions. It is observed that the Commission vide its order dated 28.7.2016 in Petition No. 290/GT/2014 had not allowed any projected additional capital expenditure for the 2014-19 tariff period and accordingly, the Petitioner has not claimed these additions under exclusions. In view of above, the Petitioner's claim under this head is allowed.

(c) Loan FERV

15. The Petitioner has claimed exclusion of loan FERV of Rs.547.91 lakh in 2014-15, Rs.87.21 lakh in 2015-16, (-) Rs.1.35 lakh in 2016-17 and Rs.1366.32 lakh in 2018-19. In justification, the Petitioner has submitted that since, it is entitled to directly claim FERV on foreign currency loans as per the 2014 Tariff Regulations the same has been kept under exclusions. As the Petitioner is entitled to bill the claim for loan FERV directly from the beneficiaries, the Petitioner's claim under this head is allowed.

(d) Capitalization of capital spares



16. The Petitioner has claimed exclusion of capital spares of Rs.5887.08 lakh in 2014-15, Rs.7967.63 lakh in 2015-16, Rs.5407.34 lakh in 2016-17, Rs.7041.61 lakh in 2017-18 and Rs.7587.25 lakh in 2018-19. In justification, the Petitioner has submitted that capital spares capitalized after the cut-off date, are not allowable as per the 2014 Tariff Regulations and accordingly the same has been claimed as exclusion. Since the capitalisation of spares, over and above initial spares, procured after the cut-off date of the generating station, is not allowed as part of capital cost, in terms of the 2014 Tariff Regulations, the Petitioner's claim for exclusion under this head is allowed.

(e) Inter-unit transfer of assets

17. The Petitioner has claimed exclusion of (-) Rs.7.76 lakh in 2014-15, (-) Rs.991.11 lakh in 2015-16, Rs.1102.76 lakh in 2016-17, (-) Rs.2.89 lakh in 2017-18 and Rs.1626.11 lakh in 2018-19, on account inter-unit transfer of assets to/from the generating station. In justification, the Petitioner has submitted that since the Commission is not considering the temporary inter-unit transfer of assets, for the purpose of tariff, the same has been kept under exclusions. The Commission in its various orders while dealing with the application for additional capitalisation in respect of other generating stations of the Petitioner, had decided that both positive and negative entries arising out of inter-unit transfers of a temporary nature shall be ignored for the purposes of tariff. In line with the said decision, the exclusion of the said amounts on account of inter-unit transfer is allowed.

(f) Reversal of liabilities

18. The Petitioner has claimed exclusion of reversal of liabilities of (-) Rs.4.20 lakh in 2014-15, (-) Rs.28.68 lakh in 2015-16, (-) Rs.0.18 lakh in 2016-17, (-)



Rs.51.59 lakh in 2017-18 and (-) Rs.9.75 lakh in 2018-19. In justification, the Petitioner has submitted that the tariff is allowed on cash basis and liabilities do not form part of tariff, accordingly the reversal of the same has been kept under exclusion. Since, the tariff is allowed on cash basis, the exclusion of reversal of un-discharged liabilities is allowed for the purpose of tariff.

(g) Capitalization of MBOA's

19. The Petitioner has claimed exclusion of capitalisation of MBOA's amounting to Rs.573.01 lakh in 2014-15, Rs.361.94 lakh in 2015-16, Rs.597.81 lakh in 2016-17, Rs.1969.57 lakh in 2017-18 and Rs.270.73 lakh in 2018-19. In justification, the Petitioner has submitted that as MBOA's capitalised after the cut-off date of the generating station are not allowed as per the 2014 Tariff Regulations, the same has been claimed under exclusions. Since capitalisation of MBOA's after the cut-off date of the generating station is not allowed as part of capital cost as per the 2014 Tariff Regulations, the Petitioner's claim for exclusion under this head is allowed.

(h) Expenses related to 5 KM Electrification Scheme

20. The Petitioner has claimed exclusion of expenditure of (-) Rs.206.61 lakh in 2015-16 incurred towards 5 KM electrification scheme. In justification, the Petitioner has submitted that the said scheme was taken up by NTPC at the various generating stations including Singrauli STPS, as per Ministry of Power (MoP), Government of India (GoI) order dated 27.4.2010. However, MoP vide its order dated 25.3.2013 directed for withdrawal this scheme. Subsequently, MoP vide its order dated 8.3.2014, directed NTPC to complete the scheme in 8 ongoing projects (including Singrauli STPS) and handover the assets to concerned State Power Utilities free of cost and to capitalize the expenditure, as per provisions of the scheme. In line with



the same, the expenditure was claimed by the Petitioner for additional capitalization in respect of Singrauli during 2013-14 and the Commission had allowed the same as reimbursement vide its order its dated 21.12.2015 in Petition No. 315/GT/2014. As the assets have now been transferred to the DISCOM, free of cost, as per the MoP directive, the same has been written off in the books of accounts of the Petitioner. Therefore, the item has been kept under exclusion. It is observed that the Commission vide order dated 21.12.2015 in Petition 315/GT/2014 had allowed the reimbursement of expenditure incurred towards 5 KM electrification scheme, without impacting the admitted capital cost of the generating station. In view of the above, the Petitioner's claim under this head is allowed.

(i) De-capitalization of Spares (not forming part of capital cost)

21. The Petitioner has claimed exclusion of de-capitalisation of capital spares of Rs.1868.52 lakh in 2014-15, Rs.2650.55 lakh in 2015-16, Rs.50.87 lakh in 2016-17, Rs.318.12 lakh in 2017-18 and Rs.156.51 lakh in 2018-19. In justification, the Petitioner has submitted that these capital spares do not part of allowed capital cost of the generating station and accordingly their de-capitalisation has been claimed as exclusions. It is observed from the submission of the Petitioner that these capital spares do not form part of the allowed capital cost of the generating station. Accordingly, the Petitioner's claim for exclusion under this head is allowed.

(j) De-capitalisation of MBOA's (not forming part of capital cost)

22. The Petitioner has claimed exclusion of de-capitalisation of MBOA of Rs.0.53 lakh in 2014-15, Rs.54.76 lakh in 2015-16, Rs.101.13 lakh in 2016-17, Rs.22.51 lakh in 2017-18 and Rs.556.88 lakh in 2018-19. In justification, the Petitioner has submitted that these MBOA's do not part of the allowed capital cost of the generating



and accordingly their de-capitalisation has been claimed as exclusions. Since, these de-capitalised MBOA's do not form part of the allowed capital cost of the generating station, the exclusion claimed under this head is allowed.

(k) De-capitalisation of MBOA's (forming part of capital cost)

23. The Petitioner has claimed exclusion of de-capitalisation of MBOA's of Rs.208.40 lakh in 2015-16, Rs.23.28 lakh in 2016-17, Rs.109.93 lakh in 2017-18 and Rs.2836.07 lakh in 2018-19. In justification, the Petitioner has submitted that as the capitalisation of expenditure against these items are not being allowed for the purpose of tariff under the 2014 Tariff Regulations, the de-capitalisation of the same has been claimed as exclusions. Since Regulation 14(4) of the 2014 Tariff Regulations provides that in case of de-capitalisation of assets, the original cost of such assets shall be removed from the admitted capital cost of the generating station, the claim of the Petitioner under this head is not allowed.

(l) Re-grouping of assets

24. The Petitioner has re-grouped some assets in the books of accounts in 2015-16 having 'nil' impact on net basis. Accordingly, the Petitioner has claimed exclusion of 'nil' value in 2015-16. The same is allowed for the purpose of tariff.

25. Based on the above, the summary of exclusions allowed and disallowed for the 2014-19 tariff period is as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Capitalization of R&M related works	770.97	3623.72	5116.55	4451.63	25730.49
De-capitalization related to R&M works	(-) 69.49	0.00	(-) 261.75	0.00	0.00
Items disallowed as projected additional capital expenditure for the 2014-19 tariff period	10099.22	278.04	8308.65	57.37	59.74
Loan FERV	547.91	87.21	(-) 1.35	0.00	1366.32



Capitalization of capital spares	5887.08	7967.63	5407.34	7041.61	7587.25
Inter-unit transfer of assets	(-) 7.76	(-) 991.11	1102.76	(-) 2.89	1626.11
Reversal of Liabilities	(-) 4.20	(-) 28.68	(-) 0.18	(-) 51.59	(-) 9.75
Capitalization of Miscellaneous Bought Out Assets (MBOA's)	573.01	361.94	597.81	1969.57	270.73
Expenses related to 5 KM electrification scheme	0.00	(-) 206.61	0.00	0.00	0.00
De-capitalization of spares (not part of capital cost)	(-) 1868.52	(-) 2650.55	(-) 50.87	(-) 318.12	(-) 156.51
De-capitalization of MBOA's (not part of capital cost)	(-) 0.53	(-) 54.76	(-) 101.13	(-) 22.51	(-) 556.88
De-capitalisation of MBOA (part of capital cost)	0.00	(-) 208.40	(-) 23.38	(-) 109.93	(-) 2836.07
Re-grouping of assets	0.00	0.00	0.00	0.00	0.00
Total Exclusions allowed	15927.70	8178.42	20094.45	13015.12	33081.44
Total Exclusions disallowed	0.00	(-) 208.40	(-) 23.38	(-) 109.93	(-) 2836.07

Additional Capital Expenditure

26. The Petitioner has submitted the actual additional capital expenditure claimed, on cash basis, for the 2014-19 tariff period as under:

		<i>(Rs. in lakh)</i>				
	Regulation	2014-15	2015-16	2016-17	2017-18	2018-19
Effluent Quality Monitoring System	14(3)(ii)	0.00	28.06	0.00	7.73	0.00
Continuous Emission Monitoring System		0.00	243.42	8.27		0.00
Fire Protection for ACSF & FOPH		0.00	120.02	0.00	0.00	0.00
CCTV based surveillance system	14(3)(iii)	0.00	125.67	0.14	0.00	0.00
LED Lighting	14(3)(ii)	0.00	0.00	0.00	457.46	44.19
De-capitalization of capital spares (part of capital cost)	14(4)	(-) 160.88	(-) 81.34	(-) 721.55	(-) 899.04	(-) 1038.03
Sub-total (A)		(-) 160.88	435.82	(-) 713.14	(-) 433.85	(-) 993.84
Discharge of liabilities (B)	14(3)(vi)	0.00	17.69	72.14	0.00	10.00
Total additional capital expenditure claimed (A+B)		(-) 160.88	453.52	(-) 641.00	(-) 433.85	(-) 983.84

27. We now examine the actual additional capital expenditure claimed by the Petitioner for the 2014-19 tariff period as under:

(a) Effluent Quality Monitoring System (EQMS) and Continuous Emission Monitoring System (CEMS)



The Petitioner has claimed additional capital expenditure of Rs.28.06 lakh (after removal of un-discharged liabilities of Rs.6.56 lakh), on cash basis, in 2015-16 towards EQMS under Regulation 14(3)(ii) of the 2014 Tariff Regulations. The Petitioner has also claimed additional capital expenditure of Rs.243.42 lakh (after removal of un-discharged liabilities of Rs.29.25 lakh) and Rs.8.27 lakh (after removal of un-discharged liabilities of Rs.0.69 lakh), on cash basis, in 2015-16 and 2016-17, respectively towards CEMS under Regulation 14(3)(ii) of the 2014 Tariff Regulations. The Petitioner has also claimed additional capital expenditure for Rs.7.73 lakh (after removal of un-discharged liabilities of Rs.0.41 lakh), on cash basis, in 2017-18 towards balance works of CEMS and EQMS, under Regulation 14(3)(ii) of the 2014 Tariff Regulations. In justification, the Petitioner has submitted that Central Pollution Control Board (CPCB) has mandated the continuous monitoring of effluent quality vide its letter dated 5.2.2014. The Petitioner has furnished a copy of letter of CPCB as documentary evidence towards the additional capital expenditure claimed.

28. The Respondent, UPPCL has submitted that the generating station has outlived its useful life and has opted for the Special Allowance and therefore, the Petitioner may be directed to meet these expenses through the Special Allowance claimed under Regulation 16 of the 2014 Tariff Regulations. The Respondents, TPDDL and BYPL have submitted that the Petitioner has not submitted any documentary evidence in support of the claim for prudence check and hence, the claim is liable to be rejected. They have also submitted that since the Petitioner has claimed Special Allowance, the Petitioner should be meet the same form such allowance. In response, the Petitioner has clarified that these claims have been added as the Petitioner has incurred these expenditures on account of change in law and are statutory/ mandatory in nature and hence cannot be met through such



allowances. It has also submitted that the expenditure has been incurred for the benefit of the beneficiaries.

29. We have examined the matter. It is observed that the Petitioner has claimed the additional capital expenditure towards EQMS and CEMS, based on the directions given by the CPCB under The Water (Prevention and Control of Pollution) Act, 1974 and The Air (Prevention and Control of Pollution) Act, 1981 vide its letter dated 5.2.2014. Since, the claim of the Petitioner under this head is attributable to change in law/compliance with the existing law, the claim of the Petitioner under this head is allowed.

(b) Fire Protection for ACSF & FOPH

30. The Petitioner has claimed additional capital expenditure of Rs.120.02 lakh (after removal of un-discharged liabilities of Rs.20.56 lakh), on cash basis, in 2015-16 towards Fire Protection for ACSF & FOPH, under Regulation 14(3)(ii) of the 2014 Tariff Regulations. In justification, the Petitioner has submitted these works have been carried out to prevent any catastrophic damage in case fire breaks out in Fuel Oil Pump House (FOPH) as existence of Heavy Fuel Oil in FOPH area makes it vulnerable to fire hazard and mobile fire protection equipment may not be quite enough to control the spread of fire. The Petitioner has further submitted that Regulation 12(5) of the Central Electricity Authority (Technical Standards for construction of Electrical Plants and Electric Lines) Regulations, 2010 also mandates the same. The Respondents, UPPCL, TPDDL and BYPL has submitted that since the Petitioner has not submitted requisite documents to carry out the prudence check. They have also submitted that since the Petitioner has claimed special allowance, the expenditure towards such assets should be met through the same.



The Petitioner, in response to the replies filed by the Respondents has submitted that the Special Allowance is being allowed in lieu of R&M activities and not for items pertaining to change in law.

31. The matter has been considered. It has been observed that the Petitioner has claimed the expenditure under this head under change in law in terms of the Central Electricity Authority (Technical Standards for construction of Electrical Plants and Electric Lines) Regulations, 2010. We are of the view, that though these Regulations were notified in 2010 but the claim of the Petitioner is admissible under compliance of existing law as the same is mandated by the Regulations issued by CEA which is a statutory body. In view of the above the claim of the Petitioner of Rs.120.02 lakh is allowed along with an undischarged liability of Rs.20.56 lakh.

(c) CCTV based surveillance system

32. The Petitioner has claimed additional capital expenditure of Rs.125.67 lakh (after removal of un-discharged liabilities of Rs.75.33 lakh), on cash basis, in 2015-16 and Rs.0.14 lakh (on accrual cum cash basis) in 2016-17, towards installation of CCTV based surveillance system under Regulation 14(3)(iii) of the 2014 Tariff Regulations. In justification, the Petitioner has submitted that these works were taken up on the basis of the recommendation of industrial security inspection team of Intelligence Bureau (IB), Ministry of Home Affairs, Government of India. The Petitioner has also submitted the copy of the recommendation letter from IB. The matter has been considered. It is observed that the Intelligence Bureau vide its letter dated 13.3.2012 has recommended the elaboration of the CCTV surveillance system and other related works. In view of the above, the claim of the Petitioner under this head is allowed towards safety and security of the generating station.



(d) LED Lighting

The Petitioner has claimed additional capital expenditure of Rs.457.46 lakh and Rs.44.19 lakh, on accrual cum cash basis, in 2017-18 and 2018-19, respectively under Regulation 14(3)(ii) of the 2014 Tariff Regulations. In justification, the Petitioner has submitted that the Prime Minister of India on 5.1.2015, had launched the National LED programme with an objective to reduce energy consumption by using energy efficient lighting. In line with the objective, Unnat Jyoti by Affordable LEDs for All (UJALA) and Street Lighting National Program is being implemented by M/s. EESL. Further, on 2.8.2017, the Ministry of Power, Gol, issued letter to NTPC, wherein it mandated to replace all old bulbs with LED bulbs in all buildings of the Petitioner including compound/ street lighting occupied by NTPC. It has submitted that the directions of the Government of India are required to be implemented and therefore, in order to comply with the directions issued by the Prime Minister and the Gol, the Petitioner had initiated the work of replacing the old inefficient lights with energy efficient LED lighting in the premises of the generating station compound/ building owned and operated by the Petitioner. Accordingly, the Petitioner has submitted that the claim may be allowed under change in law under Regulation 14(3)(ii) of the 2014 Tariff Regulations. The Petitioner has added that it is a settled position of law, that the expenditure incurred by a generating company, in compliance to an event of change in law, ought to be allowed as the letter issued by MoP, Gol is an action by an Indian Governmental Instrumentality, the same falls within the definition of change in law, as per Regulation 3(9) of the 2014 Tariff Regulations. Referring to the judgments dated 27.5.2019 in Appeal No. 195 of 2017 titled as GMR Karmalanga Ltd. & anr. Vs. CERC & ors. and Judgment of the Hon'ble Supreme Court in Energy Watchdog Vs. CERC & ors. (2017) 14 SCC 80, the



Petitioner has stated that when a specific provision of change in law has been envisaged under the Tariff Regulations, then the general provision related to O&M expenditure cannot be resorted to (judgment of the APTEL in Appeal No. 125 of 2017 (NTPC Ltd. Vs CERC & Ors.) was referred to.

33. The Respondents, UPPCL and TPDDL have submitted that the replacement of incandescent bulbs with LED lights cannot be considered as a capital expenditure and the same is covered under O&M expenses. The Respondent, BYPL has submitted that the claim for LED lighting by the Petitioner is not permissible as this is a measure for conservation of energy and the Petitioner is the only beneficiary of the reduction in energy consumption.

34. The submissions have been considered. It is noticed that the additional capital expenditure incurred towards installation of 'LED based light fittings' is in terms of the MoP, Gol letter dated 2.8.2017, which recommends the replacement of existing old bulbs with LED bulbs, which would result in reduction of about 50% to 90% in energy consumption by lighting. In our view, the letter of the MoP, Gol, as referred to by the Petitioner, is recommendatory in nature and cannot be construed as a change in law event or for compliance to an existing law, to consider the additional capital expenditure claimed by the Petitioner. Moreover, as pointed out by the Respondents the benefits of replacement of incandescent light with LED lighting system, accrues to the Petitioner. In this background, the additional capital expenditure claimed by the Petitioner is not allowed.

(e) De-capitalisation of capital spares (forming part of capital cost)

35. The Petitioner has claimed de-capitalisation of capital spares forming part of the admitted capital cost of Rs.160.88 lakh in 2014-15, Rs.81.34 lakh in 2015-16,



Rs.721.55 lakh in 2016-17, Rs.899.04 lakh in 2017-18 and Rs.1038.03 lakh in 2018-19, under Regulation 14(4) of the 2014 Tariff Regulation. Regulation 14(4) of the 2014 Tariff Regulations provides that in case of de-capitalisation of assets the original cost of such asset shall be removed from the admitted capital cost of the generating station. Accordingly, the de-capitalisation claimed under this head is allowed for the purpose of tariff.

(f) Discharge of Liabilities

36. The discharges of liabilities claimed by the Petitioner for the 2014-19 tariff period is as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Out of liabilities deducted as on 1.4.2009	0.00	17.69	1.37	0.00	0.00
Other liabilities	0.00	0.00	70.77	0.00	10.00
Total	0.00	17.69	72.14	0.00	10.00

37. The discharges as claimed above are in order and have been considered for the purpose of tariff. Further, considering the reversal of liabilities, during the 2014-19 tariff period, corresponding to admitted capital cost, the flow of un-discharged liabilities corresponding to admitted capital cost is as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
(A) Out of liabilities deducted as on 1.4.2009					
Opening liability (a)	206.92	206.92	165.93	164.55	160.24
Addition during the year (b)	0.00	0.00	0.00	0.00	0.00
Discharges during the year (c)	0.00	17.69	1.38	0.00	0.00
Reversal during the year (d)	0.00	23.30	0.00	4.31	0.00
Closing liability (e) = (a+b-c-d)	206.92	165.93	164.55	160.24	160.24
(B) Other liabilities					
Opening liability (f)	133.71	133.71	265.41	195.15	174.99
Addition during the year (g)	0.00	131.70	0.69	0.41	0.00
Discharges during the year (h)	0.00	0.00	70.77	0.00	10.00
Reversal during the year (i)	0.00	0.00	0.18	20.56	9.75
Closing liability (j) = (f+g-h-i)	133.71	265.41	195.15	174.99	155.25
Total Closing liabilities (e+j)	206.92	206.92	165.93	164.55	160.24



38. Accordingly, the additional capital expenditure allowed for the 2014-19 tariff period is summarized as under:

	(Rs. in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Effluent Quality Monitoring System	0.00	28.06	0.00	7.73	0.00
Continuous Emission Monitoring System	0.00	243.42	8.27		0.00
Fire Protection for ACSF & FOPH	0.00	120.02	0.00	0.00	0.00
CCTV based surveillance system	0.00	125.67	0.14	0.00	0.00
LED Lighting	0.00	0.00	0.00	0.00	0.00
De-capitalization of capital spares (part of capital cost)	(-) 160.88	-81.34	(-) 721.55	(-) 899.04	(-) 1038.03
Sub-total (A)	(-)160.88	435.82	(-)713.15	(-)891.31	(-)1038.03
Discharge of liabilities (B)	0.00	17.69	72.14	0.00	10.00
Total additional capital expenditure allowed (C = A+B)	(-) 160.88	453.51	(-) 641.00	(-) 891.31	(-) 1028.03
Exclusions disallowed (D)	0.00	(-) 208.40	(-) 23.38	(-) 109.93	(-) 2836.07
Net additional capital expenditure allowed (E = C+D)	(-) 160.88	245.11	(-) 664.38	(-) 1001.24	(-) 3864.10

Capital cost allowed for the 2014-19 tariff period

39. Based on above, the capital cost allowed for the purpose of tariff is as under:

	(Rs. in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	124746.99	124586.11	124711.20	124046.82	123045.58
Add: Additional capital expenditure	(-) 160.88	245.11	(-) 664.38	(-) 1001.24	(-) 3864.10
Closing capital cost	124586.11	124831.22	124046.82	123045.58	119181.48
Average capital cost	124666.55	124708.66	124379.01	123546.20	121113.53

Debt-Equity Ratio

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

“19. Debt-Equity Ratio: (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 the 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 ratio 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.”

41. Accordingly, the gross normative loan and equity amounting to Rs.64533.25 lakh and Rs.60213.74 lakh, respectively as on 1.4.2014 as considered in order dated 28.7.2016 in Petition No. 290/GT/2014 has been considered as gross normative loan and equity as on 1.4.2014. Further, the additional capital expenditure approved above has been allocated to debt and equity in debt-equity ratio of 70:30. Further also, for the assets de-capitalised during the 2014-19 tariff period debt-equity ratio of 50:50 has been considered as these assets were originally allocated to debt and equity in the debt-equity ratio of 50:50, in respective tariff petitions. Accordingly, the details of debt-equity ratio in respect of the generating station as on 1.4.2014 and as on 31.3.2019 is as under:



	Capital cost as on 1.4.2014 (Rs. in lakh)	(%)	Additional capital expenditure (Rs. in lakh)	(%)	De- capitalization (Rs. in lakh)	(%)	Total cost as on 31.3.2019 (Rs. in lakh)	(%)
Debt	64533.25	51.73	443.19	70.00	3039.31	50.00	61937.13	51.92
Equity	60213.74	48.27	189.95	30.00	3039.31	50.00	57364.38	48.08
Total	124746.99	100.00	633.14	100.00	6078.63	100.00	119301.51	100.00

Return on Equity

42. Regulation 24 of the 2014 Tariff Regulation 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 kilometre.”*

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

“25. 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:

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

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

(3) The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2014-15 to 2018-19 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee as the case may be. Any under- recovery or over recovery of grossed up rate on return on equity after truing up, shall be recovered or refunded to beneficiaries or the long term transmission customers/DICs as the case may be on year to year basis.”

44. The Petitioner has claimed tariff considering rate of return on equity of 19.611% in 2014-15, 19.706% in 2015-18 and 19.758% in 2018-19. The Petitioner has arrived at these rates after grossing up base rate of return on equity of 15.50% with MAT rate of 20.961% in 2014-15, 21.342% in 2015-18 and 21.549% in 2018-19. However, after rectifying the rounding off errors the rate of return on equity to be considered for the purpose of tariff works out to 19.610% for 2014-15, 19.705% for 2015-18 and 19.758% for 2018-19. Accordingly, return on equity has been worked out as under:

	(Rs. in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Notional Equity- Opening	60213.74	60133.30	60148.88	59800.58	59298.42
Add: Addition of Equity due to additional capital expenditure	-80.44	15.59	-348.30	-502.17	-1934.05
Normative Equity – Closing	60133.30	60148.88	59800.58	59298.42	57364.37
Average Normative Equity	60173.52	60141.09	59974.73	59549.50	58331.39
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Effective Tax Rate for respective years	20.961%	21.342%	21.342%	21.342%	21.549%
Rate of Return on Equity (Pre-tax)	19.610%	19.705%	19.705%	19.705%	19.758%
Return on Equity (Pre-tax) - (annualised)	11800.03	11850.80	11818.02	11734.23	11525.12



Interest on loan

45. 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-capitalisation 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 up to the date of de-capitalisation 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 capitalised:

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 refinancing 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 re-financing.

(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.”

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

i) The gross normative loan of Rs.64533.25 lakh as on 1.4.2014, as considered in order dated 28.7.2016 in Petition No. 290/GT/2014, has been retained as on 1.4.2014;



- ii) Cumulative repayment of Rs.54580.79 lakh as on 1.4.2014, as considered in order dated 28.7.2016 in Petition No. 290/GT/2014, has been retained as on 1.4.2014;
- iii) Accordingly, the net normative opening loan as on 1.4.2014 works out to Rs.9952.46 lakh;
- iv) Addition to normative loan on account of additional capital expenditure approved above has been considered;
- v) Depreciation allowed has been considered as repayment of normative loan during the respective year of the 2014-19 tariff period. Further, the repayments have been adjusted for de-capitalisation of assets considered for the purpose of tariff. Further also, proportionate adjustment has been made to the repayments corresponding to discharges and reversal of liabilities considered during the respective years on account of cumulative repayment adjusted, corresponding to liabilities deducted, as on 1.4.2009 (the balance repayment to be adjusted back as on 31.3.2019, towards the repayment adjusted corresponding to liabilities deducted as on 1.4.2009, is Rs.71.42 lakh);
- vi) The Petitioner has claimed interest on loan considering weighted average rate of interest (WAROI) of 8.7594% in 2014-15, 8.8463% in 2015-16, 8.8115% in 2016-17, 8.0366% in 2017-18 and 8.1642% in 2018-19. The WAROI, has been calculated by applying the actual loan portfolio existing as on 1.4.2014, along with subsequent additions during the 2014-19 tariff period for the generating station.

47. The necessary calculation of interest of loan is as under:

		<i>(Rs. in lakh)</i>				
		2014-15	2015-16	2016-17	2017-18	2018-19
A	Gross opening loan	64533.25	64452.81	64682.34	64366.26	63867.18
B	Cumulative repayment of loan upto previous year	54580.79	54470.33	54290.21	53800.86	53130.11
C	Net Loan Opening (A-B)	9952.46	9982.47	10392.12	10565.40	10737.08
D	Addition due to additional capital expenditure	(-)80.44	229.53	(-)316.08	(-)499.07	(-)1930.05
E	Repayment of loan during the year	2.16	15.82	31.56	33.85	34.32
F	Repayment adjustment on account of de-capitalisation	112.62	202.82	521.45	706.28	2711.87
G	Repayment adjustment on account of discharges/reversals corresponding to un-discharged liabilities deducted as on 1.4.2009	0.00	6.88	0.53	1.68	0.00
H	Net Repayment of loan during the year (E-F+G)	(-)110.46	(-)180.12	(-)489.36	(-)670.75	(-)2677.55
I	Net Loan Closing (C+D-H)	9982.47	10392.12	10565.40	10737.08	11484.57
J	Average Loan [(C+I)/2]	9967.47	10187.30	10478.76	10651.24	11110.83
K	WAROI	8.7594%	8.8463%	8.8115%	8.0366%	8.1642%
L	Interest on Loan (J x K)	873.09	901.20	923.34	856.00	907.11



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 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-capitalisation 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-capitalised asset during its useful services.”

49. The cumulative depreciation amounting to Rs.112060.84 lakh [Rs.112055.00 lakh for assets capitalized upto 31.3.2009 (hereinafter referred to as “existing assets”) and Rs.5.84 lakh for assets capitalized on/ after 1.4.2009 (hereinafter referred to as “new assets”)] as on 1.4.2014, as considered in order dated 28.7.2016 in Petition No. 290/GT/2014, has been retained as on 1.4.2014. Also, the value of freehold land of Rs.1081.00 lakh as on 1.4.2014, as considered in order dated 28.7.2016 in Petition No. 290/GT/2014, has been retained as on 1.4.2014 for existing assets. Accordingly, the balance depreciable value before providing depreciation for the year 2014-15, works out to ‘nil’ for existing assets and Rs.31.02 lakh for new assets. The remaining useful life of the generating station as on 1.4.2014 is ‘nil’. Further, as decided in order dated 21.12.2015 in Petition 315/GT/2014, the depreciation for existing assets have been computed considering spreading over of the balance depreciable value and the depreciation for new assets have been computed considering the weighted average rate of depreciation (WAROD) of 5.28%. Further, proportionate adjustment has been made to cumulative depreciation, on account of de-capitalization of assets and also on account of discharges and reversal of liabilities considered during the respective years on account of cumulative depreciation adjusted, corresponding to liabilities deducted as on 1.4.2009 (the balance depreciation to be adjusted back as on 31.3.2019, towards the depreciation adjusted corresponding to liabilities deducted as on 1.4.2009, is Rs.164.37 lakh). Accordingly, depreciation has been worked out and allowed as under:



(Rs. in lakh)

		2014-15	2015-16	2016-17	2017-18	2018-19
A	For existing assets (i.e. assets admitted upto 31.3.2009)					
a	Opening capital cost	124706.04	124545.16	124273.11	123529.55	122520.58
b	Additional capital expenditure	(-) 160.88	(-) 272.05	(-) 743.56	(-) 1008.97	(-) 3874.10
c	Closing capital cost (a+b)	124545.16	124273.11	123529.55	122520.58	118646.48
d	Average capital cost [(a+c)/2]	124625.60	124409.13	123901.33	123025.06	120583.53
e	Value of freehold land included in 'd' above	1081.00	1081.00	1081.00	1081.00	1081.00
f	Depreciable value [(d-e) x 0.9]	111190.14	110995.32	110538.30	109749.66	107552.28
g	Remaining depreciable value at the beginning of the year (f - 'n' of preceding year)	0.00	0.00	0.00	0.00	0.00
h	Balance useful life at the beginning of the year	0.00	0.00	0.00	0.00	0.00
i	WAROD (j x 100 / d)	0.0%0%	0.0%0%	0.0%0%	0.0%0%	0.0%0%
j	Depreciation during the year (g/h)	0.00	0.00	0.00	0.00	0.00
k	Cumulative depreciation at the end of the year (before adjustment for de-capitalisation and liabilities adjustment) ['n' of preceding year + j]	112055.00	111910.20	111665.28	110996.07	110091.86
l	Depreciation adjustment on account of de-capitalisation	144.80	260.77	670.44	908.07	3486.69
m	Depreciation adjustment on account of discharges/ reversals corresponding to un-discharged liabilities deducted as on 1.4.2009	0.00	15.85	1.23	3.86	0.00
n	Cumulative depreciation at the end (k-l+m)	111910.20	111665.28	110996.07	110091.86	106605.17
B	For new assets (i.e. assets admitted on/ after 1.4.2009)					
o	Opening capital cost	40.95	40.95	558.11	637.29	645.02
p	Additional capital expenditure	0.00	517.16	79.18	7.73	10.00
q	Closing capital cost (o+p+q)	40.95	558.11	637.29	645.02	655.02
r	Average capital cost [(o+q)/2]	40.95	299.53	597.70	641.15	650.02
s	Value of freehold land included in 'r' above	0.00	0.00	0.00	0.00	0.00
t	Depreciable value [(r-s) x 0.9]	36.86	269.58	537.93	577.04	585.02
u	Remaining depreciable value at the beginning of the year (t - 'ab' of preceding year)	31.02	261.58	514.11	521.66	495.79
v	Balance useful life at the beginning of the year	0.00	0.00	0.00	0.00	0.00
w	WAROD	5.28%	5.28%	5.28%	5.28%	5.28%
x	Depreciation during the year (r x w)	2.16	15.82	31.56	33.85	34.32
y	Cumulative depreciation at the end of the year (before adjustment for de-	8.00	23.82	55.38	89.23	123.55



	capitalisation and liabilities adjustment) ['ab' of preceding year + x)					
z	Depreciation adjustment on account of de-capitalisation	0.00	0.00	0.00	0.00	0.00
aa	Depreciation adjustment on account of discharges/ reversals corresponding to un-discharged liabilities deducted as on 1.4.2009	0.00	0.00	0.00	0.00	0.00
ab	Cumulative depreciation at the end (y-z+aa)	8.00	23.82	55.38	89.23	123.55
C	Total Depreciation (i.e. for existing assets and new assets)					
ac	Total Depreciation during the year (j+x)	2.16	15.82	31.56	33.85	34.32

O&M Expenses

50. The Commission in its order dated 28.7.2016 in Petitioner No. 290/GT/2014 had allowed O&M expenses as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M expenses allowed under Regulation 29(1)(a)	39900.00	42410.00	45080.00	47920.00	50940.00
Water Charges allowed under Regulation 29(2)	789.64	789.64	789.64	789.64	789.64
Total O&M Expenses	40689.64	43199.64	45869.64	48709.64	51729.64

51. The O&M expenses claimed the Petitioner are as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M expenses under Regulation 29(1)(a) of the 2014 Tariff Regulations	39900.00	42410.00	45080.00	47920.00	50940.00
O&M expenses under Regulation 29(2) of the 2014 Tariff Regulations:	0.00	0.00	0.00	0.00	0.00
- Water Charges	847.71	847.71	847.71	847.71	868.61
- Capital Spares consumed	2029.41	2731.89	772.42	1217.16	1194.54
Sub-total O&M Expenses	42777.11	45989.59	46700.13	49984.87	53003.15
Impact of Wage revision	0.00	99.38	5268.56	5380.34	5966.69
Impact of GST	0.00	0.00	0.00	361.91	546.93
Total O&M Expenses	42777.11	46088.97	51968.69	55727.12	59516.77

52. The normative O&M expenses claimed in terms of the Regulation 29(1)(a) of the 2014 Tariff Regulations were allowed by the Commission vide order dated 28.7.2016 in Petitioner No. 290/GT/2014. Accordingly, the same is allowed for the purpose of revision of tariff of the generating station.



Water Charges

53. 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 capitalisation or consumption of stores and spares and renovation and modernisation”.

54. 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. The Petitioner has claimed water charges based on actual water consumption of the generating station.

55. The water charges allowed, on projected basis, by the Commission in order dated 28.7.2016 in Petition No. 290/GT/2014 is as under:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
789.64	789.64	789.64	789.64	789.64

56. It has been observed that Singrauli Super Thermal Power Station and Rihand Super Thermal Power Station (another power station of the Petitioner) draw their consumptive water from Rihand water reservoir. On the same reservoir two hydel power stations of UP (Rihand 6X50 MW) and Obra (3X30 MW) are also located which meet the peaking/ emergency power requirement of Uttar Pradesh. There was a dispute between UP and NTPC over the consumptive water drawl by NTPCL for the two thermal power stations Viz Singrauli and Rihand STPS. The dispute was referred to umpire in which it was decided that NTPC shall pay a compensation towards the generation loss of hydro power plants of UP viz Rihand and Obra. The



cost of this energy would be double the rate of maximum energy charge rate charged by NTPC in any concerned year.

57. Further, there was an agreement between NTPC, Government of UP and erstwhile UPSEB wherein the principles of consumptive water charges were decided. The Petitioner has submitted the copy of the agreement dated 3.4.1999.

The principles decided in the agreement were as follows:

- i. Water level may be taken on theoretical basis i.e., minimum 830 feet and maximum 880 feet of Rihand reservoir.
- ii. T&D losses would be considered as 12%.
- iii. Auxiliary consumption of UP Hydro stations viz Rihand and Obra would be 0.5%.
- iv. The energy loss will be calculated taking into consideration the actual availability of Rihand hydro station of UP for the year 1998.
- v. Water charges shall be payable from the date of synchronization of the units.
- vi. The per kilowatt hour charges to be applied will be the highest average annual rate during 1998 amongst Northern Region coal based stations of the Petitioner and will be applicable w.e.f. 1.1.199 for next five years and there would be upward revision of 10% every 5 years.

58. Accordingly, in terms of the above agreement the actual water charges incurred during the year 2012-13 were considered by Commission as projections of water charges for 2014-19 tariff period in order dated 28.7.2016 in Petition 290/GT/2014.



59. It has been observed that the Petitioner has claimed water charges based on the rates allowed by order dated 28.7.2016 in Petition 290/GT/2014 i.e., Rs.2.6868/kWh of generation loss of downstream Hydro projects for the period 2014-15 to 2017-18. Further, as per the records of discussion dated 3.4.1999 between the Petitioner and the Minister of Energy, UP there would be an upward escalation of 10% in water charges for every 5 years. Accordingly, the Petitioner has claimed water charges on the basis of revised rates in 2018-19 i.e., Rs 2.9554/kWh of generation loss of downstream Hydro projects. Accordingly, the actual water consumption during the 2014-19 tariff period has been 74.38 CUSEC. In view of above, the water charges claimed by the Petitioner and allowed are as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Actual water charges claimed	847.71	847.71	847.71	847.71	868.61
Actual water charges allowed	847.71	847.71	847.71	847.71	868.61

Capital Spares

60. The last proviso to Regulation 29(2) of the 2014 Tariff Regulations provides as under:

“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 capitalisation or consumption of stores and spares and renovation and modernisation”.

61. In terms of the above proviso, capital spares consumed are admissible separately, at the time of truing up of tariff, based on the details furnished by the Petitioner. The capital spares claimed by the Petitioner for the 2014-19 tariff period is as under:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
2029.41	2731.89	772.42	1217.16	1194.54



62. We have examined the list of spares furnished by the Petitioner along with the de-cap details as submitted in Form-9Bi. The capital spares consumption claimed by the Petitioner comprise of two categories as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Capital spares (forming part of allowed capital cost)	160.88	81.34	721.55	899.04	1038.03
Capital spares (not forming part of allowed capital cost)	1868.52	2650.55	50.87	318.12	156.51
Total capital spares consumed claimed	2029.41	2731.89	772.42	1217.16	1194.54

63. In respect of capital spares which forms part of capital cost of the generating station, the Petitioner has been recovering tariff since their procurement and therefore same cannot be allowed as part of additional O&M expenses. Accordingly, only those capital spares which do not form part of the capital cost of the generating station are only being considered in the present Petition. It is pertinent to mention that the term 'capital spares' has not been defined in the 2014 Tariff Regulations. The term capital spares, in our view, is a piece of equipment, or a spare part, of significant cost that is maintained in inventory for use in the event that a similar piece of critical equipment fails or must be rebuilt. Keeping in view the principle of materiality and to ensure standardised practices in respect of earmarking and treatment of capital spares, the value of capital spares exceeding Rs.1.00 lakh, on prudence check of the details furnished by the Petitioner in Form-17, of the Petition, has been considered for the purpose of tariff. Based on this, the details of capital spares consumption allowed for the 2014-19 tariff period is summarised as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Total capital spares consumed claimed	2029.41	2731.89	772.42	1217.16	1194.54
Less: Capital spares (forming part of allowed capital cost)	160.88	81.34	721.55	899.04	1038.03
Total capital spares consumed (not forming part of allowed capital cost)	1868.52	2650.55	50.87	318.12	156.51
Less: Value of capital spares below	5.00	15.27	0.00	1.42	0.00



Rs.1.00 lakh disallowed on individual basis					
Net value of capital spares considered	1863.52	2635.28	50.87	316.70	156.51

64. Also, considering the fact that the original value of capital spares taken out of service is neither available nor has been furnished by the Petitioner for the 2014-19 tariff period, we are the view that the salvage value of the capital spares being replaced is required to be deducted from the net total value of capital spares considered during the 2014-19 tariff period. In view of above, the salvage value of 10% has been deducted from the net value of capital spares considered during the 2014-19 tariff period. Accordingly, net capital spares allowed is summarised as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Net total value of capital spares considered	1863.52	2635.28	50.87	316.70	156.51
Less: Salvage value @ 10%	186.35	263.53	5.09	31.67	15.65
Net capital spares allowed	1677.17	2371.75	45.78	285.03	140.86

Additional O&M Expenses on account of Goods and Service Tax

65. The Petitioner has claimed additional O&M expenses of Rs.361.91 lakh in 2017-18 and Rs.546.93 lakh in 2018-19, on account of payment of Goods and Service Tax (GST). The Respondent, UPPCL has submitted the taxation on services, payable earlier as 'service tax' is levied now under 'Goods and Service Tax'. Thus, it is merely a name change. Services which were earlier taxed at 15% and levied under new rate under GST, which can be less or more. UPPCL has also submitted that the services which were earlier exempt of service tax, has now been brought to tax under GST Act. The Respondent, TPDDL and BYPL have submitted that in case of O&M activities carried out through outsourced agencies, payment of GST ought to be borne by the Petitioner having taken the decision to outsource such



work and beneficiaries should not be burdened by consequences of the decision taken by the Petitioner. The Petitioner, in its rejoinders have submitted that the amount claimed is only on account of differential rate of tax for taxable services relating to O&M i.e. under erstwhile service tax 15% and in GST 18%. The Petitioner has further submitted that when the tax regime itself has been replaced by the constitutional amendment and promulgation of the GST law, impact of the same cannot be denied to the Petitioner.

66. The submissions have been considered. It is observed that the Commission while specifying the O&M expense norms for the 2014-19 tariff period had considered taxes to form part of the O&M expense calculations and accordingly, had factored the same in the said norms. This is evident from paragraph 49.6 of the SOR (Statement of Objects and Reasons) issued with the 2014 Tariff Regulations, which is extracted hereunder:

“49.6 With regards to suggestion received on other taxes to be allowed, the Commission while approving the norms of O&M expenses has considered the taxes as part of O&M expenses while working out the norms and therefore the same has already been factored in...”

67. Further, the escalation rates considered in the O&M expense norms is only after accounting for the variations during the past five years of the 2014-19 tariff period, which in our view, takes care of any variation in taxes also. It is pertinent to mention that in case of reduction of taxes or duties, no reimbursement is ordered. In this background, we find no reason to grant additional O&M expenses towards payment of GST.

Additional O&M Expenses on account of impact of Wage Revision

68. The Petitioner has submitted that the Commission while specifying the 2014 Tariff Regulations applicable for the 2014-19 tariff period, had taken note in SOR to



the said regulations that any increase in the employee expenses, on account of pay revision shall be considered appropriately, on case-to-case basis, balancing the interest of generating stations and consumers. The Petitioner has, therefore, claimed additional O&M expenses of Rs.99.38 lakh in 2015-16, Rs.5268.56 lakh in 2016-17, Rs.5380.34 lakh in 2017-18 and Rs.5966.69 lakh in 2018-19, towards impact of wage revision of employees of CISF and Kendriya Vidyalaya (KV) from 1.1.2016 and the employees of the Petitioner posted in the generating station with effect from 1.1.2017. In this regard the Petitioner vide affidavit dated 30.6.2021 has submitted the following:

- (a) Detailed break-up of the actual O&M expenses booked by the Petitioner for the 2014-19 tariff period for the whole generating station
- (b) Detailed break-up of actual O&M expense of the Corporate Centre and its allocation to various generating stations, for the 2014-19 tariff period.
- (c) Break-up of claimed wage revision impact on employee cost, expenses on corporate centre and on salaries of CISF & Kendriya Vidyalaya employee of the generating station for the 2014-19 tariff period.

69. We have examined the submissions and the documents available on record. As stated, the Petitioner has claimed total amount of Rs.16714.98 lakh (Rs.99.38 lakh in 2015-16, Rs.5268.56 lakh of in 2016-17, Rs.5380.34 lakh in 2017-18 and Rs.5966.69 lakh in 2018-19) as impact of wage revision of employees of CISF and Kendriya Vidyalaya staff from 1.1.2016 and for employees of the Petitioner posted at the generating station with effect from 1.1.2017. However, it is noticed that the said claim of the Petitioner includes the impact on account of the payment of additional PRP/ex-gratia to its employees, consequent upon wage revision, of Rs.385.04 lakh in 2017-18 and Rs.1514.35 lakh in 2018-19. As such, as per consistent methodology adopted by the Commission of excluding PRP/ex-gratia from actual O&M expenses of past data for finalisation of O&M norms for various tariff settings, the additional PRP/ex-gratia, paid as a result of wage revision impact has been excluded from the



wage revision impact claimed by the Petitioner, in the present case. Accordingly, the claim of the Petitioner in respect of wage revision impact stand reduced to Rs.14815.59 lakh with the following year-wise break up.

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Wage revision impact claimed (excluding PRP/ex-gratia)	0.00	99.38	5268.56	4995.30	4452.33	14815.59

70. The Commission while specifying the O&M expense norms under the 2014 Tariff Regulations had considered the actual O&M expense data for the period from 2008-09 to 2012-13. However, considering the submissions of the stakeholders, the Commission, in the SOR to the 2014 Tariff Regulations, had observed that the increase in employees cost due to impact of pay revision impact, will be examined on a case to case basis, balancing the interest of generating stations and the consumers. The relevant extract of the SOR is extracted under:

“29.26. Some of the generating stations have suggested that the impact of pay revision should be allowed on the basis of actual share of pay revision instead of normative 40% and one generating company suggested that the same should be considered as 60%. In the draft Regulations, the Commission had provided for a normative percentage of employee cost to total O&M expenses for different type of generating stations with an intention to provide a ceiling limit so that it does not lead to any exorbitant increase in the O&M expenses resulting in spike in tariff. The Commission would however, like to review the same considering the macro economics involved as these norms are also applicable for private generating stations. In order to ensure that such increase in employee expenses on account of pay revision in case of central generating stations and private generating stations are considered appropriately, the Commission is of the view that it shall be examined on case to case basis, balancing the interest of generating stations and consumers.

33.2 The draft Regulations provided for a normative percentage of employee cost to total O&M expenses for generating stations and transmission system with an intention to provide a ceiling limit so that the same should not lead to any exorbitant increase in the O&M expenses resulting in spike in tariff. The Commission shall examine the increase in employee expenses on case to case basis and shall consider the same if found appropriate, to ensure that overall impact at the macro level is sustainable and thoroughly justified. Accordingly, clause 29(4) proposed in the draft Regulations has been deleted. The impact of wage revision shall only be given after seeing impact of one full year and if it is found that O&M norms provided under Regulations are inadequate/insufficient to cover all justifiable O&M expenses for the particular year including employee expenses, then balance amount may be considered for reimbursement.”



71. The methodology indicated in SOR quoted above suggests a comparison of the normative O&M expenses with the actual O&M expenses, on year to year basis.

However, in this respect the following facts needs consideration:

- (a) The norms are framed based on the averaging of the actual O&M expense of past five years to capture the year on year variations in sub-heads of O&M;
- (b) Certain cyclic expenditure may occur with a gap of one year or two years and as such adopting a longer duration i.e. five years for framing of norms also captures such expenditure which is not incurred on year to year basis;
- (c) When generating companies find that their actual expenditure has gone beyond the normative O&M expenses in a particular year put departmental restrictions and try to bring the expenditure for the next year below the norms.

72. In consideration of above facts, we find it appropriate to compare the normative O&M expenses with the actual O&M expenses for a longer duration so as to capture the variation in the sub-heads. Accordingly, it is decided that for ascertaining that the O&M expense norms provided under the 2014 Tariff Regulations are inadequate/ insufficient to cover all justifiable O&M expenses, including employee expenses, the comparison of the normative O&M expenses and the actuals O&M expenses incurred shall be made for 2015-19 on a combined basis, which is commensurate with the wage revision claim being spread over these four years.

73. The Petitioner has furnished the detailed breakup of the actual O&M expenses incurred during the 2014-19 tariff period for Singrauli Super Thermal Power Station. It is noticed that the total O&M expenses incurred for generating station is more than the normative O&M expenses recovered during each year of the 2014-19 tariff period. The impact of wage revision/ pay revision could not be factored by the Commission while framing the O&M expense norms under the 2014-19 Tariff Regulations since the pay/ wage revision came into effect from 1.1.2016 (CISF & KV employees) and 1.1.2017 (employees of the Petitioner) respectively. As such, in



terms of SOR to the 2014 Tariff Regulations, the following approach has been adopted for arriving at the allowable impact of pay revision:

- (a) Comparison of the normative O&M expenses with the actual O&M expenses incurred for the period from 2015-16 to 2018-19, commensurate to the period for which wage revision impact has been claimed. For like to like comparison, the components of O&M expenses like productivity linked incentive, water charges, filing fee, ex-gratia, loss of provisions, prior period expenses, community development store expenses, ash utilisation expenses, RLDC fee & charges and others (without breakup/details) which were not considered while framing the O&M expense norms for the 2014-19 tariff period, have been excluded from the yearly actual O&M expenses. Having done so, if the normative O&M expenses for the period 2015-19 are higher than the actual O&M expenses (normalised) for the said period, then the impact of wage revision (excluding PRP and ex-gratia) as claimed for the said period is not admissible/allowed as the impact of pay revision gets accommodated within the normative O&M expenses. However, if the normative O&M expenses for the period 2015-19 are lesser than the actual O&M expenses (normalised) for the same period, the wage revision impact (excluding PRP and ex-gratia) to the extent of under recovery or wage revision impact (excluding PRP and Ex-gratia), whichever is lower, is required to be allowed as wage revision impact for the period 2015-19.

74. The details as furnished by the Petitioner for actual O&M expenses incurred for Singrauli STPS for 2014-19 tariff period and the wage revision impact (excluding PRP and ex-gratia) for the generating station are as under:

<i>(Rs. in lakh)</i>		
Year	Actual O&M expenses for Singrauli STPS, excluding water charges & capital spares	Wage revision impact claimed for the generating station i.e., Singrauli STPS
2014-15	46484.14	0.00
2015-16	47355.55	99.39
2016-17	53107.78	5268.57
2017-18	51632.25	4995.30
2018-19	52649.90	4452.33
Total		14815.59

75. As a first step, the expenditure against sub-heads of O&M expenses as indicated in paragraph 70 above have been excluded from the actual O&M expenses incurred to arrive at the actual O&M expenses (normalised) for Singrauli STPS. Accordingly, the comparison of the normative O&M expenses versus the actual O&M



expenses (normalised) along with the wage revision impact claimed by the Petitioner for the generating station i.e. Singrauli STPS for the period 2015-19 is as follows:

<i>(Rs. in lakh)</i>					
	2015-16	2016-17	2017-18	2018-19	Total
Actual O&M expenses (normalised) for the Singrauli STPS – (a)	43321.05	49493.69	47237.35	47547.98	187600.07
Normative O&M expenses for Singrauli STPS as per Regulation 29(1) of the 2014 Tariff Regulations – (b)	42410.00	45080.00	47920.00	50940.00	186350.00
Under/(Excess) recovery for the generating station (c)=(a)-(b)	911.05	4413.69	(-) 682.65	(-) 3392.02	1250.07
Wage revision impact claimed (excluding PRP/ex-gratia)	99.39	5268.57	4995.30	4452.33	14815.59

76. It is observed that for wage revision impact during the period 2015-19, the normative O&M expenses is less than of the actual O&M expenses (normalised) and the under recovery is to the tune of Rs.1250.07 lakh which is less than the wage revision impact claimed (excluding PRP/ex-gratia) by the Petitioner. As such, in terms of methodology described above, the wage revision impact (excluding PRP/ex-gratia) is allowed to the extent of the under recovery of O&M expenses. Accordingly, we, in exercise of the Power to relax under Regulation 54 of the 2014 Tariff Regulations, relax Regulation 29(1) of the 2014 Tariff Regulations and allow the reimbursement of the wage revision impact for this generating station, as additional O&M charges for the period 2015-19. The arrear payments on account of the wage revision impact is payable by the beneficiaries in twelve equal monthly instalments. Keeping in view the consumer interest, we, as a special case, direct that no interest shall be charged by the Petitioner on the arrear payments on the wage revision impact allowed in this order. This arrangement, in our view, will balance the interest of both, the Petitioner and the Respondents. Also, considering the fact that the impact of wage revision is being allowed in exercise of the power to relax, these



expenses are not made part of the O&M expenses and consequent annual fixed charges being determined in this order under the 2014 Tariff Regulations.

77. Accordingly, the actual O&M expenses allowed to the generating station for the 2014-19 tariff period is as under:

	2014-15	2015-16	2016-17	2017-18	2018-19
Normative O&M expenses claimed under Regulation 29(1)(a) of the 2014 Tariff Regulations (a)	39900.00	42410.00	45080.00	47920.00	50940.00
Normative O&M expenses allowed under Regulation 29(1)(a) of the 2014 Tariff Regulations (b)	39900.00	42410.00	45080.00	47920.00	50940.00
Water Charges claimed under Regulation 29(2) of the 2014 Tariff Regulations (c)	847.71	847.71	847.71	847.71	868.61
Water Charges allowed under Regulation 29(2) of the 2014 Tariff Regulations (d)	847.71	847.71	847.71	847.71	868.61
Capital Spares consumed claimed under Regulation 29(2) of the 2014 Tariff Regulations (e)	2029.41	2731.89	772.42	1217.16	1194.54
Capital Spares consumed allowed under Regulation 29(2) of the 2014 Tariff Regulations (f)	1677.17	2371.75	45.78	285.03	140.86
Total O&M expenses claimed under Regulation 29 of the 2014 Tariff Regulations (a + c + e)	42777.11	45989.59	46700.13	49984.87	53003.15
Total O&M expenses allowed under Regulation 29 of the 2014 Tariff Regulations (b + d + f)	42424.87	45629.45	45973.49	49052.73	51949.47
Impact of Wage revision claimed	0.00	99.38	5268.56	5380.34	5966.69
Impact of Wage revision allowed					1250.07
Impact of GST claimed	0.00	0.00	0.00	361.91	546.93
Impact of GST allowed	0.00	0.00	0.00	0.00	0.00

Operational Norms

78. The operational norms in respect of the generating station i.e. normative annual plant availability factor, gross station heat rate, specific fuel oil consumption and auxiliary power consumption are discussed as under:

(a) Normative Annual Plant Availability Factor (NAPAF)

79. In terms of Regulation 36(A)(a) of the 2014 Tariff Regulations, the Commission vide its order dated 28.7.2016 in Petitioner No. 290/GT/2014 had allowed NAPAF of 83% for the period 2014-17 and 85% for the period 2017-19. The same is considered for the purpose of revision of tariff.



(b) Gross Station Heat Rate (kCal/kWh)

80. In terms of Regulation 36(C)(a) of the 2014 Tariff Regulations, the Gross Station Heat Rate (GSHR) of 2412.50 kCal/kWh as allowed in order dated 28.7.2016 in Petitioner No. 290/GT/2014, is considered for the purpose of revision of tariff.

(c) Specific Oil Consumption

81. In terms of Regulation 36(D)(a) of the 2014 Tariff Regulations, the secondary fuel oil consumption of 0.50 ml/kWh as allowed in order dated 28.7.2016 in Petition No. 290/GT/2014, is considered for the purpose of revision of tariff.

(d) Auxiliary Power Consumption

82. In terms of the Regulation 36(E)(a) of the 2014 Tariff Regulations, the auxiliary power consumption of 6.875% as allowed in order dated 28.7.2016 in Petition No. 290/GT/2014, is considered for the purpose of revision of tariff.

Special Allowance

83. Regulation 16 of the 2014 Tariff Regulations provides for Special Allowance for Coal-based /Lignite fired Thermal Generating stations 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 modernisation 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 modernisation 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 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 utilised 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.”

84. The Petitioner has opted and claimed Special Allowance for 2014-19 tariff period as under:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
13713.85	14584.68	15510.81	16495.75	17543.23

85. The Special Allowance claimed by the Petitioner is same as approved in order dated 28.7.2016 in Petition 290/GT/2014. In view of the above, the Special Allowance claimed by the Petitioner is allowed.

Interest on Working Capital

86. 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.



(2) The cost of fuel in cases covered under sub-clauses (a) and (b) of clause (1) of this regulation shall be based on the landed cost incurred (taking into account normative transit and handling losses) by the generating company and gross calorific value of the fuel as per actual for the three months preceding the first month for which tariff is to be determined and no fuel price escalation shall be provided during the tariff period.

(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.

(4) Interest on working capital shall be payable on normative basis notwithstanding that the generating company or the transmission licensee has not taken loan for working capital from any outside agency.”

Fuel Cost and Energy Charges in Working Capital

87. Regulation 28(2) of the 2014 Tariff Regulations provides that the computation of cost of fuel as part of Interest on Working Capital (IWC) is to be based on the landed price and GCV of fuel as per actuals, for the three months preceding the first month for which the tariff is to be determined.

88. Regulation 30(6)(a) of the 2014 Tariff Regulations provides as under:

“30. 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

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

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 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.

SFC = Normative specific fuel oil consumption, in ml/ kWh

LPSFi = Weighted average landed price of secondary fuel in Rs/ ml during the month”.



89. Therefore, in terms of the above regulation, for determination of the Energy Charges in working capital, the GCV on 'as received' basis is to be considered.

90. Regulation 30(7) of the 2014 Tariff Regulations provides as under:

“(7) The generating company shall provide to the beneficiaries of the generating station the details of parameters of GCV and price of fuel i.e. domestic coal, imported coal, e-auction coal, lignite, natural gas, RLNG, liquid fuel etc., as per the forms prescribed at Annexure-I to these regulations:

Provided that the details of blending ratio of the imported coal with domestic coal, proportion of e-auction coal and the weighted average GCV of the fuels as received shall also be provided separately, along with the bills of the respective month:

Provided further that copies of the bills and details of parameters of GCV and price of fuel i.e. domestic coal, imported coal, e-auction coal, lignite, natural gas, RLNG, liquid fuel etc., details of blending ratio of the imported coal with domestic coal, proportion of e-auction coal shall also be displayed on the website of the generating company. The details should be available on its website on monthly basis for a period of three months.”

91. The Regulations for computation of energy charges and issue of 'as received' GCV specified in Regulation 30 of the 2014 Tariff Regulations was challenged by the Petitioner Company through various writ petitions filed before the Hon'ble High Court of Delhi (W.P. No.1641/2014-NTPC v CERC). The Hon'ble Court directed the Commission to decide the place from where the sample of coal should be taken for measurement of GCV of coal on 'as received' basis on the request of Petitioners. In terms of the directions of the Hon'ble High Court, the Commission vide order dated 25.1.2016 in Petition No. 283/GT/2014 (approval of tariff of Kahalgaon STPS for the 2014-19 tariff period) 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.”

92. The Review Petition No.11/RP/2016 filed by the Petitioner against the aforesaid order dated 25.1.2016 in Petition No. 283/GT/2014 was rejected by the Commission vide order dated 30.6.2016. The Petitioner has also filed Petition No. 244/MP/2016 before this Commission inter alia praying for removal of difficulties in view of the issues faced by it in implementing the Commission's orders dated 25.1.2016 and 30.6.2016 with regard to sampling of coal from loaded wagon top for measurement of GCV. The Commission by its order dated 19.9.2018 disposed of the preliminary objections of the respondents therein and held that the petition is maintainable. Against this order, some of the respondents have filed appeal before the APTEL in Appeal Nos. 291/2018 (GRIDCO v NTPC & ors) and the same is pending adjudication.

93. In Petition No. 290/GT/2014 filed by the Petitioner for determination of tariff of this generating station for the 2014-19 tariff period, the Petitioner had furnished GCV of coal on 'as billed' but not 'as received' basis for the preceding 3 months i.e. for January 2014, February 2014 and March 2014 that were required for determination of Interest on Working Capital (IWC). Therefore, the Commission vide its order dated 28.7.2016 in Petition No.290/GT/2014 had considered GCV of coal on 'as billed' basis and provisionally allowed adjustment for total moisture while allowing the cost of coal towards generation & stock and two months energy charges in the working capital.

94. As per the Commission's order dated 25.1.2016 in Petition No. 283/GT/2014, the Petitioner, in Form-13F, has considered the average GCV of coal on "as received



basis” i.e. from wagon top for the period from October 2016 to March 2019 for the purpose of computation of working capital for the 2014-19 tariff period. The Petitioner has further submitted that CEA vide letter dated 17.10.2017 has opined that a margin of 85-100 kCal/kg for pit-head station and a margin of 105-120 kCal/kg for non-pit head station is required to be considered as loss of GCV of coal on “as received” and on “as fired” basis respectively. Accordingly, the Petitioner has considered a margin of 100 kCal/kg on average GCV of coal for the period from October 2016 to March 2019 for computation of working capital of the generating station. Accordingly, the cost of fuel component in the working capital of the generating station based on (i) ‘as received’ GCV of coal for 30 months from October 2016 to March 2019 with adjustment of 100 kCal/kg towards storage loss, (ii) landed price of coal for preceding three months i.e. January 2014 to March 2014 and (iii) GCV and landed price of Secondary fuel oil procured for the preceding three months i.e. January 2014 to March 2014 for the generating station, has been claimed by the Petitioner in the working capital as under:

	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal towards stock (15 days)	6338.11	6338.11	6338.11	6490.84	6490.84
Cost of Coal towards Generation (30 days)	12676.23	12676.23	12676.23	12981.68	12981.68
Cost of Secondary fuel oil (2 months)	585.44	587.04	585.44	599.55	599.55

95. The Petitioner has claimed Energy Charge Rate (ECR) ex-bus of 116.49 paise/kWh for the generating station based on GCV and price of fuel (coal and secondary fuel oil) as indicated above.

96. The Petitioner, suo-moto has submitted the additional details on the GCV on ‘as received’ basis which is sought by the Commission in other similar matters for the months of January 2014 to March 2014, which was uploaded in the website of the Petitioner and shared with the beneficiaries. The Petitioner vide affidavit dated



30.6.2021 has submitted that though the computation of energy charges moved from 'as fired' basis to 'as received' basis with effect from 1.4.2014 in terms of Regulation 30(6) of the 2014 Tariff Regulations, for calculation of IWC under Regulation 28(2) of the 2014 Tariff Regulations, the GCV should be as per 'actuals' for the three months preceding the first month for which tariff is to be determined. It has further submitted that for the 2014-19 tariff period, Regulation 28(2) of the 2014 Tariff Regulations unequivocally provide that the actual cost and GCV of the preceding three months shall be considered and for these preceding three months (January 2014 to March 2014) by virtue of it falling under the 2009 Tariff Regulations shall be computed on the basis of 'as fired' GCV. Referring to the judgment of the Hon'ble Supreme Court in PTC India v CERC (2010) 4 SCC 603 and the judgment of APTEL in NEEPCO v TERC (2006) APTEL 148, the Petitioner has submitted that the Commission is bound by the provisions of the tariff regulations and that purposive interpretation ought to be given to the 2014 Tariff Regulations and interest on working capital ought to be computed in terms of Regulation 28(2) of the 2014 Tariff Regulations on actual GCV i.e. 'as fired' GCV. The Petitioner has submitted that without prejudice to the above submissions, it has furnished the details of GCV on 'as received' basis for the months of January 2014 to March 2014 in compliance with the directions of the Commission in other similar matters as under:

Sl. No.	Month	Weighted Average GCV of coal received (EM basis) (kcal/kg) (A)	Total Moisture TM) (in %) (B)	Equilibrated Moisture (EM) (in %) (C)	Weighted Average GCV of coal received (TM basis) (kcal/kg) $D=A*(1-B\%)/(1-C\%)$
1	January 2014	4038.11	16.30	6.40	3611.00
2	February 2014	3950.55	16.30	7.30	3567.00
3	March 2014	4148.35	16.30	7.90	3770.00
	Average				3649.33

97. The submissions have been considered. As stated in paragraph 93 above, the Petitioner in Form-13F, has considered the average GCV of coal on "as received



basis” i.e. from wagon top for the period from October 2016 to March 2019 for the purpose of computation of working capital for the 2014-19 tariff period. In addition to the average GCV, it has also considered a margin of 100 kCal/kg for computation of the working capital of the generating station.

98. Regulation 28(2) of the 2014 Tariff Regulations provides that the computation of cost of fuel as a part of IWC is to be based on the landed price and gross calorific value of the fuel, as per actuals, for the three months preceding the first month for which the tariff is to be determined. Thus, calculation of IWC for 2014-19 period is to be based on such values for months of January 2014, February 2014 and March 2014. The Petitioner has not been able to furnish these values at the time of determination of tariff for the 2014-19 tariff period in Petition No. 290/GT/2014. In the instant truing up petition, the Petitioner has proposed that instead of GCV for January 2014, February 2014 and March 2014, the Commission should consider the average values for months of October 2016 to March 2019 since the measurement of ‘as received’ GCV has been done in accordance with directions of the Commission vide order dated 25.1.2016 in Petition No. 283/GT/2014. In our view, the proposal of the Petitioner to consider the retrospective application of 30 months’ (October 2016 to March 2019) average of ‘as received’ GCV data in place of ‘as received’ GCV of the preceding three months (January 2014 to March 2014) is not acceptable, keeping in view that the average GCV for 30 months may not be commensurate to the landed cost of coal for the preceding three months to be considered for calculating IWC in terms of Regulation 28(2) of the 2014 Tariff Regulations and that due to efflux of time (gap of 30 month), the quality of coal extracted from the linked mines would have undergone considerable changes. Also,



the consideration of loss of GCV of 100 kCal/kg cannot be considered, as the same is not as per provisions of the 2014 Tariff Regulations.

99. It is observed that though the Petitioner has furnished the details of 'as received' GCV for the three months of January 2014 to March 2014 as in table under paragraph 95 above, it has submitted that GCV of fuel is to be considered 'on actuals' for January 2014 to March 2014 and as such, GCV is required to be considered on an 'as fired' basis. In other words, the Petitioner has contended that since the period of January 2014 to March 2014 falls in the 2009-14 tariff period for measurement of GCV of coal, Regulation 18(2) read with Regulation 21(6) of the 2009 Tariff Regulations was applicable which mandates that generating company shall measure GCV on 'as fired' basis (and not on 'as received' basis). This submission of the Petitioner is also not acceptable in view of provisions of Regulation 21(6) of the 2009 Tariff Regulations that was amended on 31.12.2012, by addition of the following provisos:

"The following provisos shall be added under Clause (6) of Regulation 21 of the Principal Regulations as under namely:

Provided that generating company shall provide to the beneficiaries of the generating station the details of parameters of GCV and price of fuel i.e. domestic coal imported coal e-auction coal lignite natural gas RLNG liquid fuel etc. as per the form 15 of the Part-I of Appendix I to these regulations:

*Provided further that the details of blending ratio of the imported coal with domestic coal proportion of e-auction coal and the weighted average GCV of the fuels **as received** shall also be provided separately along with the bills of the respective month:*

Provided further that copies of the bills and details of parameters of GCV and price of fuel i.e. domestic coal imported coal e-auction coal lignite natural gas RLNG liquid fuel etc. details of blending ratio of the imported coal with domestic coal proportion of e-auction coal shall also be displayed on the website of the generating company. The details should be available on its website on monthly basis for a period of three months."

100. Thus, in terms of the above amendment to the 2009 Tariff Regulations, the details regarding the weighted average GCV of the fuels on 'as received' basis was also required to be provided by the Petitioner along with bills of the respective



month. Also, bills detailing the parameters of GCV and price of fuel were to be displayed by the Petitioner on its website, on monthly basis.

101. As per SOR to the 2014 Tariff Regulations, we note that the main consideration of the Commission while moving from 'as fired' GCV to 'as received' GCV for the purpose of energy charges under Regulation 30(6) of the 2014 Tariff Regulations for the 2014-19 tariff period was to ensure that GCV losses which might occur within the generating station after receipt of coal are not passed on to the beneficiaries on account of improper handling and storage of coal by the generating companies. As regards the allowable (normative) storage loss within the generating station, CEA had observed that there is negligible difference between 'as received' GCV and 'as fired' GCV. As such, for the purpose of calculating energy charges, the Commission moved from 'as fired' GCV to 'as received' GCV under Regulation 30(6) of the 2014 Tariff Regulations without allowing any margin between the two measurements of GCV. Thus, 'as received' GCV was made applicable for the purpose of calculating working capital requirements based on the actual GCV of coal for the preceding three months of the first month for which tariff is to be determined in terms of Regulation 28(2) of 2014 Tariff Regulations. In case the submission of the Petitioner that 'as fired' is to be considered 'at actuals' for the preceding three months for purpose of IWC, the same would mean allowing (and passing through) all storage losses which would have occurred during the preceding three months (January 2014 to March 2014) for the 2014-19 tariff period. This, according to us, defeats the very purpose of moving from 'as fired' GCV to 'as received' GCV in the 2014 Tariff Regulations. In this background and keeping in view that in terms of amended Regulation 21(6) of the 2009 Tariff Regulations, the Petitioner is required to share details of the weighted average GCV of the fuel on 'as received' basis, we



consider the fuel component and energy charges for two months based on 'as received' GCV of the preceding three months (January 2014 to March 2014) for the purpose of computation of IWC in terms of Regulation 28(2) of the 2014 Tariff Regulations.

102. The Petitioner has calculated GCV 3649.33 kCal/kg which represents average of GCVs of preceding three months. The weighted average GCV for three months based on the net coal quantities as per Form-15 of the petition and the monthly GCVs as submitted by the Petitioner (in table at paragraph 96 above) works out to 3653.04 kCal/kg.

103. Accordingly, the cost for fuel components in working capital has been computed considering the fuel details (price and GCV) as per Form-15 of the petition except for 'as received' GCV of coal, which is considered as 3653.04 kCal/kg as discussed above. All other operational norms such as Station Heat Rate, Auxiliary Energy Consumption and Secondary Fuel Cost have been considered as per the 2014 Tariff Regulations for calculation of fuel components in working capital.

104. Based on the above discussion, the cost for fuel component in working capital is worked out and allowed as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal towards stock (15 days) generation corresponding to NAPAF	6165.31	6165.31	6165.31	6313.87	6313.87
Cost of Coal towards Generation (30 days) generation corresponding to NAPAF	12330.62	12330.62	12330.62	12627.74	12627.74
Cost of Secondary fuel oil 2 months generation corresponding to NAPAF	585.44	587.04	585.44	599.55	599.55

Energy Charge Rate (ECR) for calculating working capital



105. Regulation 30(6)(a) of the 2014 Tariff Regulations provides for computation and payment of 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:

(b) 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 = 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 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.

SFC= Normative specific fuel oil consumption, in ml/ kWh

LPSFi= Weighted average landed price of secondary fuel in Rs/ ml during the month”.

106. The Petitioner has claimed Energy Charge Rate (ECR) of 113.40 Paise/kWh for the generating station. The allowable ECR, based on the operational norms as specified in Regulation 36(A) of the 2014 Tariff Regulations and on weighted average of ‘as received’ GCV of 4049.50 kCal/kg is worked out as under:

	Unit	2014-19
Capacity	MW	2000
Gross Station Heat Rate	kCal/kWh	2412.50
Aux. Energy Consumption	%	6.875
Weighted average GCV of Oil	kCal/lit	9976.40
Weighted average GCV of Coal	Kcal/kg	3653.04
Weighted average price of Oil	Rs./KL	48311.61
Weighted average price of Coal	Rs./MT	1565.42
Rate of Energy Charge ex-bus	Rs./kWh	1.134

107. The Energy Charges for two months for computation of working capital based on ECR of Rs.1.134 /kWh, has been worked out as under:

(Rs. in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
25594.12	25664.25	25594.12	26210.85	26210.85



108. Accordingly, the fuel component and energy charges for two months in working capital is allowed as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal for 45 days (15 days for coal stock and 30 days for generation)	18495.93	18495.93	18495.93	18941.61	18941.61
Cost of Secondary fuel oil for 2 months	585.44	587.04	585.44	599.55	599.55
Energy Charges for 2 months	25594.12	25664.25	25594.12	26210.85	26210.85

Working Capital for Maintenance Spares

109. The Petitioner in Form-13B has claimed the maintenance spares in the working capital as under:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
8555.42	9217.79	10393.74	11145.42	11903.35

110. Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provide for maintenance spares @ 20% of the O&M expenses as specified in the Regulation 29 of the 2014 Tariff Regulations. Accordingly, maintenance spares @ 20% of the O&M expenses (including the water charges and capital spares) allowed for the 2014-19 tariff period is as under:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
8484.97	9125.89	9194.70	9810.55	10389.89

Working Capital for Receivables

111. Receivables equivalent to two months of capacity charges and energy charges has been worked out duly taking into account mode of operation of the generating station on secondary fuel, is allowed as under:



	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Variable Charges - for two months (A)	25594.12	25664.25	25594.12	26210.85	26210.85
Fixed Charges - for two months (B)	10699.76	11284.48	11344.60	11889.10	12375.04
Total (C = A+B)	36293.89	36948.73	36938.72	38099.96	38585.89

Working Capital for O&M Expenses (1 month)

112. The O&M expenses for 1 month as claimed by the Petitioner in Form-13B is as under:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
3564.76	3840.75	4330.72	4643.93	4959.73

113. For consideration of working capital, O&M expenses of 1 month are to be considered. The normative O&M expenses allowed as per Regulation 29(1) of the 2014 Tariff Regulations, water charges and capital spares allowed as per Regulation 29(2) of the 2014 Tariff Regulations have been considered for calculating O&M expenses for 1 month as a part of working capital.

114. Accordingly, in terms of Regulation 28(1)(a)(vi) of the 2014 Tariff Regulations, one month's O&M expenses allowed is as under:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
3535.41	3802.45	3831.12	4087.73	4329.12

Rate of interest on working capital

115. In terms of Regulation 28(3) of the 2014 Tariff Regulations, the rate of interest on working capital has been considered as 13.50% (Bank rate 10% + 350 bps).

116. Accordingly, interest on working capital has been computed as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Working capital for Cost of Coal towards	6165.31	6165.31	6165.31	6313.87	6313.87



Stock (15 days generation corresponding to NAPAF) (A)					
Working capital for Cost of Coal towards Generation (30 days generation corresponding to NAPAF) (B)	12330.62	12330.62	12330.62	12627.74	12627.74
Working capital for Cost of Secondary fuel oil (2 months generation corresponding to NAPAF) (C)	585.44	587.04	585.44	599.55	599.55
Working capital for Maintenance Spares (20% of O&M expenses) (D)	8484.97	9125.89	9194.70	9810.55	10389.89
Working capital for Receivables (2 months of sale of electricity at NAPAF) (E)	36293.89	36948.73	36938.72	38099.96	38585.89
Working capital for O&M expenses (1 month of O&M expenses) (F)	3535.41	3802.45	3831.12	4087.73	4329.12
Total Working Capital (G = A+B+C+D+E+F)	67395.64	68960.04	69045.92	71539.39	72846.07
Rate of Interest (H)	13.5000%	13.5000%	13.5000%	13.5000%	13.5000%
Interest on Working Capital (I = G x H)	9098.41	9309.61	9321.20	9657.82	9834.22

117. The calculation of interest on working capital and energy charge worked out as above are subject to the final decision of the Commission in Petition No. 244/MP/2016.

Annual Fixed Charges

118. Accordingly, the annual fixed charges approved for the 2014-19 tariff period for the generating station is summarised as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	2.16	15.82	31.56	33.85	34.32
Interest on Loan	873.09	901.20	923.34	856.00	907.11
Return on Equity	11800.03	11850.80	11818.02	11734.23	11525.12
Interest on Working Capital	9098.41	9309.61	9321.20	9657.82	9834.22
O&M Expenses	42424.87	45629.45	45973.49	49052.73	51949.47
Special Allowance	13713.85	14584.68	15510.81	16495.75	17543.23
Total	77912.41	82291.56	83578.41	87830.38	91793.46

Note: All figures are on annualised basis. All figures under each head have been rounded. The figure in total column in each year is also rounded. As such, the sum of individual items may not be equal to the arithmetic total of the column.

119. The Petitioner has been directed by the Commission's order dated 19.2.2016 in Petition No. 33/MP/2014 to introduce a helpdesk to attend to the queries of the beneficiaries with regard to the energy charges. Accordingly, contentious issues, if



any, which may arise regarding the energy charges, should be sorted out with the beneficiaries at the senior management level.

120. The difference between the annual fixed charges already recovered in terms of the order dated 28.7.2016 in Petition No. 290/GT/2014 and the annual fixed charges determined by this order shall be adjusted in terms of Regulation 8(13) of the 2014 Tariff Regulations.

121. Petition No. 191/GT/2020 is disposed of in terms of the above.

**Sd/-
(Pravas Kumar Singh)
Member**

**Sd/-
(Arun Goyal)
Member**

**Sd/-
(I.S Jha)
Member**

