

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 302/GT/2020**

**Coram:**

**Shri I. S. Jha, Member  
Shri Arun Goyal, Member  
Shri P. K. Singh, Member**

**Date of Order: 1<sup>st</sup> October, 2022**

**In the matter of**

Petition for revision of tariff of Feroze Gandhi Unchahar Thermal Power Station Stage-I (420 MW) for the period from 1.4.2014 to 31.3.2019 after truing up

**And**

**In the matter of**

NTPC Limited,  
NTPC Bhawan,  
Core-7, Scope Complex,  
7, Institutional Area, Lodhi Road,  
New Delhi – 110003.

**.....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,  
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, Civil Secretariat,  
Srinagar.
10. Electricity Department,  
Union Territory of Chandigarh,  
Addl. Office Building, Sector-9D  
Chandigarh.
11. Uttarakhand Power Corporation Limited,  
Urja Bhavan, Kanwali Road,  
Dehradun – 248 001.

...Respondents

**Parties Present:**

Ms. Swapna Seshadri, Advocate, NTPC  
Ms. Ritu Apurva, Advocate, NTPC  
Ms. Ashabari Basu Thakur, Advocate, NTPC  
Shri Mansoor Ali Shoket, Advocate, TPDDL  
Shri Nitin Kala, Advocate, TPDDL  
Shri Kunal Singh, Advocate, TPDDL  
Shri Vishal Sagar, Advocate, TPDDL  
Ms. Megha Bajpeyi, BRPL  
Shri Aditya Ajay, Advocate, BRPL and BYPL  
Shri Rahul Kinra, Advocate, BRPL and BYPL  
Shri Hemant Khera, Advocate, BRPL and BYPL

**ORDER**

This petition has been filed by the Petitioner, NTPC Limited for truing up of tariff of Feroze Gandhi Unchahar Thermal Power Station Stage-I (420 MW) (hereinafter referred to as ‘the generating station’) for the 2014-19 tariff period in accordance with Regulation 8 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 420 MW comprises of two units of 210 MW each. The dates of commercial operation of the different units of the generating station are as under:

Unit-I	21.11.1988
Unit-II	22.3.1989

3. The generating station was taken over by the Petitioner from the erstwhile UPSEB on 13.2.1992. The Commission vide order dated 25.5.2016 in Petition No. 320/GT/2014 had determined the tariff of the generating station for the period from 1.4.2009 to 31.3.2014 after truing up exercise. Subsequently, the Commission vide order dated 22.3.2017 in Petition No. 319/GT/2014, had determined the tariff of the generating station for the 2014-19 tariff period, considering opening capital cost of Rs.96843.70 lakh, as on 1.4.2014. Thereafter, the Commission vide Corrigendum order dated 26.5.2017, had revised the tariff determined in order dated 22.3.2017 in Petition No. 319/GT/2014. The capital cost and the annual fixed charges allowed by order dated 26.5.2017 (read with order dated 22.3.2017) are as under:

### Capital Cost allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	96843.70	96843.70	96843.70	96843.70	96843.70
Additional Capitalization	0.00	0.00	0.00	0.00	0.00
Closing Capital Cost	<b>96843.70</b>	<b>96843.70</b>	<b>96843.70</b>	<b>96843.70</b>	<b>96843.70</b>
Average Capital Cost	96843.70	96843.70	96843.70	96843.70	96843.70

### Annual Fixed Charges allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	559.97	559.97	559.97	559.97	520.77
Interest on Loan	50.01	20.45	1.09	0.00	0.00
Return on Equity	9404.79	9450.36	9450.36	9450.36	9450.36
Interest on Working Capital	907.70	947.33	988.54	1033.83	1080.18
O&M Expenses	10261.58	10891.58	11563.58	12277.58	13037.78
Compensation Allowance	3150.00	3350.03	3562.75	3788.99	4029.59
<b>Total</b>	<b>24334.04</b>	<b>25219.70</b>	<b>26126.27</b>	<b>27110.72</b>	<b>28118.66</b>



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

*“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 13.12.2019, has filed the present Petition for truing up of tariff of the generating station for the 2014-19 tariff period. However, subsequently, the Petitioner vide affidavit dated 8.4.2022, has revised its claim for capital cost and annual fixed charges as under:

**Capital Cost claimed**

*(Rs. in lakh)*

		<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
A	Opening capital cost	96843.70	96836.81	96877.43	96795.34	96747.76
B	Addition during the year	0.00	34.10	0.00	0.00	422.79
C	De-capitalisation during the year	6.89	2.15	82.09	47.58	118.16
D	Reversal during the year	0.00	0.00	0.00	0.00	0.00
E	Discharges during the year	0.00	8.66	0.00	0.00	0.00
F	Closing capital cost	<b>96836.81</b>	<b>96877.43</b>	<b>96795.34</b>	<b>96747.76</b>	<b>97052.39</b>
G	Average capital cost	96840.25	96857.12	96836.39	96771.55	96900.08

**Annual Fixed Charges claimed**

*(Rs in lakh)*

	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	560.60	564.95	583.80	575.75	757.46
Interest on Loan	57.80	23.02	1.87	0.00	0.00
Return on Equity	9405.07	9451.63	9450.40	9446.57	9479.12
Interest on Working Capital	4583.86	4657.12	4760.35	4927.44	5165.17
O&M Expenses	10402.72	11461.13	11640.05	12352.01	13094.37
Compensation Allowance	0.00	0.00	0.00	0.00	0.00
Special Allowance	3150.00	3350.03	3562.75	3788.99	4029.59
<b>Sub-total (A)</b>	<b>28160.05</b>	<b>29507.87</b>	<b>29999.92</b>	<b>31090.76</b>	<b>32525.70</b>
<b>Additional O&amp;M Expenses</b>					
Impact of Pay Revision	0.00	31.29	1597.94	2050.70	2451.02
Impact of GST	0.00	0.00	0.00	91.77	157.66
Ash Transportation Expenditure	0.00	0.00	0.00	0.00	2537.23
<b>Total Additional O&amp;M Expenditures (B)</b>	<b>0.00</b>	<b>31.29</b>	<b>1597.94</b>	<b>2142.47</b>	<b>5145.91</b>
<b>Total (A+B)</b>	<b>28160.05</b>	<b>29539.16</b>	<b>31597.16</b>	<b>33233.23</b>	<b>37671.61</b>



6. The Respondent No. 1, UPPCL has filed its reply vide affidavits dated 1.6.2020 and 14.7.2021 and the Petitioner has filed its rejoinder to the same, vide affidavits dated 24.5.2021 and 29.10.2021. The Respondent No. 3, TPDDL has filed its reply vide affidavits dated 13.7.2021 and 30.5.2022 and the Petitioner has filed its rejoinders vide affidavit dated 29.10.2021 and 8.7.2022. The Respondents No. 4 and 5, BRPL and BYPL have filed a common reply on 13.3.2022. The Petitioner has also filed the additional information vide affidavits dated 30.6.2021, 12.7.2021, 29.10.2021 and 24.1.2022, after serving copy to the Respondents. The Petition was heard through video conferencing on 25.1.2022 and 15.3.2022 and the Commission vide Record of Proceedings (ROP) dated 15.3.2022 directed the Petitioner to submit certain additional information. In compliance to the direction of the Commission, the Petitioner vide affidavit dated 8.4.2022, has filed the additional information after serving copies to the Respondents. The Petition was again heard on 14.7.2022, through video conferencing and the Commission, after directing the parties to complete their pleadings, reserved its order in the matter. 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 capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and*
- (c) *expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15.”*

8. The Commission vide order dated 22.3.2017 read with Corrigendum order dated 26.5.2017 in Petition No. 319/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.96843.70 lakh (on cash basis as well as accrual basis) as on 1.4.2014. Accordingly, in terms of Regulation 9(3) of the 2014 Tariff Regulations, the capital cost of Rs. 96843.70 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 recognized 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 recognized 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-materialization of coal supply corresponding to full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station:*

*Provided that any expenditure on acquiring the minor items or the assets including tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, computers, fans, washing machines, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for additional capitalization for determination of tariff w.e.f. 1.4.2014:*

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

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



10. The Commission had allowed “Nil” projected additional capital expenditure vide its order dated 22.3.2017 read with Corrigendum order dated 26.5.2017 in Petition No. 319/GT/2014.

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

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Closing gross block as per audited books*	350012.34	351053.45	142132.91	420904.96	439538.68
Less: Opening gross block as per audited books*	343553.14	350012.34	133694.43	142132.91	420904.96
Additional capital expenditure as per audited books*	6459.20	1041.11	8438.47	278772.06	18633.72
Less: Additional capital expenditure pertaining to other Stages / Solar #	4265.23	640.03	3326.52	273274.26	16032.77
Additional capital expenditure as per books for the generating station #	2193.98	401.08	5111.95	5497.79	2600.95
Less: IND AS adjustment #	0.00	0.00	1306.77	1025.61	1012.10
Additional capital expenditure as per IGAAP for the generating station #	2193.98	401.08	3805.18	4472.18	1588.85
Less: Exclusions	2200.87	369.13	3887.27	4519.76	1284.22
Additional capital expenditure claimed for the generating station (on accrual basis)	(-) 6.89	31.96	(-) 82.09	(-) 47.58	304.63
Less: Un-discharged liabilities included above	0.00	0.00	0.00	0.00	0.00
Additional capital expenditure claimed for the generating station (on cash basis)	(-) 6.89	31.96	(-) 82.09	(-) 47.58	304.63
Add: Discharges of liabilities	0.00	8.66	0.00	0.00	0.00
<b>Net additional capital expenditure claimed including discharges for the generating station (on cash basis)</b>	<b>(-) 6.89</b>	<b>40.62</b>	<b>(-) 82.09</b>	<b>(-) 47.58</b>	<b>304.63</b>

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

### **Exclusions**

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

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Disallowed items	586.81	62.80	3189.67	3872.00	0.00
Items not claimed	1294.71	802.64	10.40	56.45	92.62
Capital spares	538.06	186.20	700.86	594.71	1466.23
Miscellaneous Bought Out Assets	0.00	0.00	0.00	0.00	21.27
De-cap of buildings (part of capital cost)	(-) 88.15	0.00	0.00	0.00	0.00





De-cap of capital spares (not part of capital cost)	(-) 140.23	(-) 557.13	0.00	0.00	(-) 1.40
De-cap of Miscellaneous Bought Out Assets (part of capital cost)	(-) 59.42	(-) 38.77	(-) 12.39	(-) 1.38	(-) 155.50
De-cap of Miscellaneous Bought Out Assets (not part of capital cost)	0.00	0.00	0.00	0.00	(-) 144.83
De-cap of Loco 1350/1120 HP	0.00	(-) 167.84	0.00	0.00	0.00
Loan FERV	68.51	81.23	(-) 1.25	0.00	0.00
Inter-unit transfer of assets	6.70	0.00	0.00	0.00	5.83
Reversal of liabilities	(-) 6.11	0.00	0.00	(-) 2.03	0.00
Re-grouping of assets	0.00	0.00	0.00	0.00	0.00
<b>Total Exclusions claimed</b>	<b>2200.87</b>	<b>369.13</b>	<b>3887.27</b>	<b>4519.76</b>	<b>1284.22</b>

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

**(a) Disallowed items**

14. The Petitioner has claimed net exclusion of Rs.586.81 lakh in 2014-15, Rs.62.80 lakh in 2015-16, Rs.3189.67 lakh in 2016-17 and Rs.3872.00 lakh in 2017-18 towards items not allowed by the Commission under the head “Claims disallowed in 2014-19” and “Disallowed Items in Period 2009-14”. The Petitioner has submitted that these items were disallowed by the Commission vide its orders dated 16.4.2015, 25.5.2016 and 22.3.2017 in Petition No.(s) 284/GT/2013, 320/GT/2014 and 319/GT/2014, respectively. It is observed from the submissions of the Petitioner that these items have not been allowed in tariff and do not form part of the capital cost. Since these assets do not form part of the capital cost, the exclusion for these items for the said amount is allowed. Further, de-capitalization of assets is also excluded against which capitalization are not allowed.

**(b) Items not claimed**

15. The Petitioner has claimed exclusion of Rs.1294.71 lakh in 2014-15, Rs. 802.64 lakh in 2015-16, Rs.10.40 lakh in 2016-17, Rs.56.45 lakh in 2017-18 and Rs.92.62 lakh in 2018-19 incurred towards R&M schemes under this head. It is observed from the submissions of the Petitioner that these items have been met



through from the Special allowance and do not form part of the capital cost. In justification the Petitioner has submitted that the Petitioner is claiming special allowance and expenditure towards R&M schemes is being done through special allowance, accordingly Petitioner is claiming additional capital expenditure towards R&M schemes under exclusions. 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, de-capitalization of assets is also excluded against which capitalization are not allowed.

***(c) Capitalisation of capital spares***

16. The Petitioner has claimed exclusion of capital spares of Rs.538.06 lakh in 2014-15, Rs.186.20 lakh in 2015-16, Rs.700.86 lakh in 2016-17, Rs.594.71 lakh in 2017-18 and Rs.1466.23 lakh in 2018-19. In justification, the Petitioner has submitted that as capital spares capitalised after the cut-off date are not allowed in terms of the 2014 Tariff Regulations, the same has been kept under exclusions. Since, capitalisation of spares over and above initial spares procured after the cut-off date of the generating station are not allowed for the purpose of tariff as they form part of O&M expenses as and when consumed, the Petitioner's claim for exclusion under this head is allowed.

***(d) Capitalisation of Miscellaneous Bought Out Assets (MBOA's)***

17. The Petitioner has claimed exclusion of capitalisation of MBOA's amounting to Rs.21.27 lakh in 2018-19. In justification of the same, 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 capitalization 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.

***(e) De-capitalisation of Buildings (part of capital cost)***

18. The Petitioner has claimed exclusion of de-capitalisation of buildings (pertaining to temp erection, store office, open storage yard for stores, construction of sheds, satcom building, semi covered sheds and store building) amounting to Rs.88.15 lakh in 2014-15. In justification of the same, the Petitioner has submitted that these decapitalized assets form part of the allowed capital cost of the generating station and as capitalization of these items as replacements are not being allowed for the generating station the corresponding de-cap is claimed under exclusions. Since Regulation 14(4) of the 2014 Tariff Regulations provides that in case of de-capitalization 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.

***(f) De-capitalisation of capital spares (not forming part of capital cost)***

19. The Petitioner has claimed exclusion of de-capitalization of capital spares not forming part of admitted capital cost of the generating station of Rs.140.23 lakh in 2014-15, Rs.557.13 lakh in 2015-16 and Rs.1.40 lakh in 2018-19. In justification of the same, the Petitioner has submitted that these capital spares do not form part of the 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 are not forming part of the allowed capital cost of the generating station. Accordingly, the Petitioner's claim for exclusion under this head is allowed.



***(g) De-capitalisation MBOA's (forming part of the capital cost)***

20. The Petitioner has claimed exclusion of de-capitalization of MBOA's forming part of admitted capital cost of the generating station amounting to Rs.59.42 lakh in 2014-15, Rs.38.77 lakh in 2015-16, Rs.12.39 lakh in 2016-17, Rs.1.38 lakh in 2017-18 and Rs.155.50 lakh in 2018-19. In justification of the same, the Petitioner has submitted that as the capitalization of expenditure against these items are not being allowed in the instant Petition, the de-capitalization of the same has been claimed as exclusions. Since Regulation 14(4) of the 2014 Tariff Regulations provides that in case of de-capitalization 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.

***(h) De-capitalisation of MBOA's (not forming part of the capital cost)***

21. The Petitioner has claimed exclusion of de-capitalization of MBOA's not forming part of admitted capital cost of the generating station amounting to Rs.144.83 lakh in 2018-19. In justification of the same, the Petitioner has submitted that these MBOA's do not form part of the allowed capital cost of the generating station and is therefore kept under exclusion. 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.

***(i) Decapitalization of Loco 1350/1120 HP***

22. The Petitioner has claimed exclusion of de-capitalization of Loco 1350/1120 HP amounting to Rs.167.84 lakh in 2015-16. In justification of the same, the Petitioner has submitted that the Commission vide order dated 16.4.2015 in Petition No. 284/GT/2013 had allowed the net additional capital expenditure of Rs 727.04 lakh



(additional capital expenditure of Rs.894.88 lakh with corresponding estimated de-capitalization of Rs 167.84 lakh) during 2011-12 for replacement of old Loco with new Locos. The Petitioner further, submitted that since, de-cap of Rs.167.84 lakh has already been deducted from the admissible capital cost on anticipated basis in 2011-12 itself, the corresponding actual de-cap of Loco of equivalent amount has been kept under exclusions. Since, de-cap of Loco of Rs.167.84 lakh has already been considered for the purpose of tariff in 2011-12, on anticipated basis, in order dated 16.4.2015 in Petition No. 284/GT/2013, the exclusion of actual de-cap of the said amount in the books of account in 2015-16 is allowed and not considered for the purpose of tariff.

***(j) Loan FERV***

23. The Petitioner has claimed exclusion of loan FERV of Rs.68.51 lakh in 2014-15, Rs.81.23 lakh in 2015-16 and (-) Rs.1.25 lakh in 2016-17. In justification of the same 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 required to bill the claim for loan FERV directly from the beneficiaries, the Petitioner's claim under this head is allowed.

***(k) Inter-unit transfer of assets***

24. The Petitioner has claimed exclusion of Rs.6.70 lakh in 2014-15 and Rs.5.83 lakh in 2018-19, on account of inter-unit transfer of assets to/from the generating station. In justification of the same, 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 capitalization 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.

**(l) Reversal of liabilities**

25. The Petitioner has claimed reversal of liabilities of Rs. 6.11 lakh in 2014-15 and Rs.2.03 lakh in 2017-18. In justification of the same, the Petitioner has submitted that 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 tariff is allowed on cash basis, the exclusion of reversal of un-discharged liabilities is allowed for the purpose of tariff.

**(m) Re-grouping of Assets**

26. 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.

27. Based on 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
Disallowed items	586.81	62.80	3189.67	3872.00	0.00
Items not claimed	1294.71	802.64	10.40	56.45	92.62
Capital spares	538.06	186.20	700.86	594.71	1466.23
Miscellaneous Bought Out Assets	0.00	0.00	0.00	0.00	21.27
De-cap of capital spares (not part of capital cost)	(-) 140.23	(-) 557.13	0.00	0.00	(-) 1.40
De-cap of Miscellaneous Bought Out Assets (not part of capital cost)	0.00	0.00	0.00	0.00	(-) 144.83
De-cap of Loco 1350/1120 HP	0.00	(-) 167.84	0.00	0.00	0.00
Loan FERV	68.51	81.23	(-) 1.25	0.00	0.00
Inter-unit transfer of assets	6.70	0.00	0.00	0.00	5.83
Reversal of liabilities	(-) 6.11	0.00	0.00	(-) 2.03	0.00



Re-grouping of assets	0.00	0.00	0.00	0.00	0.00
<b>Total Exclusions allowed</b>	<b>2348.44</b>	<b>407.89</b>	<b>3899.66</b>	<b>4521.14</b>	<b>1439.72</b>
<b>Total Exclusions disallowed</b>	<b>(-) 147.58</b>	<b>(-) 38.77</b>	<b>(-) 12.39</b>	<b>(-) 1.38</b>	<b>(-) 155.50</b>

### **Additional Capital Expenditure**

28. The Petitioner, in Form-9A, has submitted the actual additional capital expenditure claimed for the 2014-19 tariff period, as under:

		<i>(Rs. in lakh)</i>				
	<b>Regulation</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Continuous Emission Monitoring System (CEMS)	14(3)(ii)	0.00	34.10	0.00	0.00	0.00
LED electrification	14(3)(ii)	0.00	0.00	0.00	0.00	422.79
<b>Sub-total (A)</b>		<b>0.00</b>	<b>34.10</b>	<b>0.00</b>	<b>0.00</b>	<b>422.79</b>
De-capitalization of capital spares (part of capital cost) (B)	14(4)	(-) 6.89	(-) 2.15	(-) 82.09	(-) 47.58	(-) 118.16
Discharge of liabilities (C)	14(3)(vi)	0.00	8.66	0.00	0.00	0.00
<b>Total additional capital expenditure claimed (A+B+C)</b>		<b>(-) 6.89</b>	<b>40.62</b>	<b>(-) 82.09</b>	<b>(-) 47.58</b>	<b>304.63</b>

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

#### **(A) New Claims**

##### **(a) Continuous Emission Monitoring System (CEMS)**

30. The Petitioner has claimed actual additional capital expenditure of Rs.34.10 lakh (on accrual as well as cash basis) in 2015-16 towards Continuous Emission Monitoring System (CEMS) under Regulation 14(3)(ii) of the 2014 Tariff Regulations. In justification of the same, the Petitioner has submitted that continuous monitoring of stack emissions is a statutory requirement to comply with the directions dated 5.2.2014 issued by the Central Pollution Control Board (CPCB) under Section 18(1)(b) of the Air (Prevention & Control of Pollution) Act, 1981. The Petitioner has also attached copy of CPCB direction dated 5.2.2014. The Petitioner has also submitted



that the CEMS has been installed for continuous online monitoring of emission parameters, such as SOx, NOx, CO, CO2, Flue gas exit temp etc.

31. The matter has been considered. It is observed that the CPCB order dated 5.2.2014 provides for installation of CEMS. Also, the Commission vide its order dated 24.2.2017 in Petition No. 342/GT/2014 had allowed the claim for additional capital expenditure towards CEMS in respect of Vindhychal Super Thermal Power Station Stage-III of the Petitioner, for the period 2014-16, as under:

*“We have examined the matter. It is noticed that in Petition No. 148/GT/2013, the petitioner had claimed an expenditure of Rs. 32.00 lakh in 2013-14 for this work and the same was allowed on projection basis vide order dated 15.5.2014 under Regulation 9(2)(ii) of the 2009 Tariff Regulations on the ground that the same is a statutory requirement as per guidelines issued by MoEF, GOI dated 6.4.2011. However, based on the submissions of the petitioner in Petition No. 343/GT/2014 (truing-up of 2009-14) that the expenditure towards CEMS has been awarded and will be capitalized during the period 2014-19, the Commission vide order dated 6.2.2017 had granted liberty to the petitioner to claim the expenditure during 2014-19 with the observation that the same will be considered in accordance with the 2014 Tariff Regulations. The petitioner, in this petition has claimed the expenditure on CEMS under Regulation 14 (3) (ii) of the 2014 Tariff Regulations on the ground that the same is a statutory requirement in terms of the MoEF, GOI guidelines dated 6.4.2011. On perusal of the said guidelines dated 6.4.2011, it is observed that the petitioner in terms of the said guidelines is required to comply with certain additional conditions which includes the continuous monitoring of stack emissions as well as ambient air quality and to take corrective measures from time to time to ensure that the levels are within permissible limits. In view of the above, we are inclined to allow the claim of the petitioner for Rs. 34.37 lakh in 2014-15 and Rs. 2.38 lakh in 2015-16 under Regulation 14 (3) (ii) of the 2014 Tariff Regulations.”*

32. In line with the above decision and keeping in view that the additional capital expenditure incurred is in respect of the asset/work which is mandatory required for continuous monitoring of stack emissions as well as ambient air quality, we allow the actual additional capital expenditure claimed by the Petitioner under Regulation 14(3)(ii) of the 2014 Tariff Regulations.

**(b) LED electrification**





33. The Petitioner has claimed total actual additional capital expenditure of Rs.422.79 lakh in 2018-19 towards LED electrification under Regulation 14(3)(ii) of the 2014 Tariff Regulations. The Petitioner has submitted that the additional capital expenditure has been incurred in compliance to the Ministry of Power (MoP), Gol letter dated 2.8.2017, which mandated the Petitioner to replace all old bulbs with LED bulbs in all buildings of the Petitioner, including compound/street lighting occupied by the Petitioner. Accordingly, the Petitioner has prayed that the additional capital expenditure may be allowed under Change in law.

34. The submissions have been considered. It is noticed that the additional capital expenditure incurred towards LED electrification is in terms of the MoP, Gol letter dated 2.8.2017, which recommends the replacement of existing old bulbs with LED bulbs, thereby resulting in the reduction of about 50% to 90% in energy consumption by LED lighting. In our view, the MoP, Gol letter is recommendatory in nature and cannot be construed as a Change in law event or for compliance to an existing law. Moreover, the benefits of replacement of existing lighting system with LED lighting system, accrues to the Petitioner. Further, it is observed that the generating station has been allowed an amount of Rs.17881.35 lakh as Special Allowance during the 2014-19 tariff period. Accordingly, we direct the Petitioner to meet the said expenditure out of the Special allowance allowed to the generating station, during the year 2018-19. In view of this, the additional capital expenditure claimed on account of LED electrification is not allowed.

#### **(B) De-capitalisation of capital spares**

35. The Petitioner has claimed de-capitalisation of capital spares of Rs.6.89 lakh in 2014-15, Rs.2.15 lakh in 2015-16, Rs.82.09 lakh in 2016-17, Rs.47.58 lakh in 2017-18



and Rs.118.16 lakh in 2018-19, under Regulation 14(4) of the 2014 Tariff Regulations. In justification of the same, the Petitioner has submitted that these capital spares were part of allowed capital cost on becoming unserviceable have been de-capitalised.

36. The matter has been examined. Regulation 14(4) of the 2014 Tariff Regulations provides that in case of de-capitalization of assets the original cost of such asset shall be removed from the admitted capital cost of the generating station. Accordingly, the de-capitalization claimed under this head is allowed for the purpose of tariff.

**(C) Discharges of liabilities**

37. 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
0.00	8.66	0.00	0.00	0.00

38. The discharges of liabilities of Rs.8.66 lakh claimed by the Petitioner in 2015-16 do not correspond to assets allowed for the purpose of tariff and is accordingly not being considered for the purpose of tariff. Accordingly, 'nil' discharges are allowed for the purpose of tariff for the 2014-19 tariff period and balance un-discharged liabilities corresponding to allowed capital cost as on 31.3.2019 is 'nil'.

39. Accordingly, the additional capital expenditure 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
Continuous Emission Monitoring System (CEMS)	0.00	34.10	0.00	0.00	0.00
LED electrification	0.00	0.00	0.00	0.00	0.00
<b>Sub-total (A)</b>	<b>0.00</b>	<b>34.10</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
De-capitalization of capital spares (part of capital cost) (B)	(-) 6.89	(-) 2.15	(-) 82.09	(-) 47.58	(-) 118.16
Discharge of liabilities (C)	0.00	0.00	0.00	0.00	0.00
<b>Total additional capital expenditure allowed (D = A+B+C)</b>	<b>(-) 6.89</b>	<b>31.95</b>	<b>(-) 82.09</b>	<b>(-) 47.58</b>	<b>(-) 118.16</b>



	2014-15	2015-16	2016-17	2017-18	2018-19
Add: Exclusions disallowed (E)	(-) 147.58	(-) 38.77	(-) 12.39	(-) 1.38	(-) 155.50
<b>Net additional capital expenditure allowed (D+E)</b>	<b>(-) 154.47</b>	<b>(-) 6.81</b>	<b>(-) 94.48</b>	<b>(-) 48.96</b>	<b>(-) 273.66</b>

### **Capital cost allowed for the 2014-19 tariff period**

40. Based on above, the capital cost allowed for the period 2014-19 is as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	96843.70	96689.24	96682.43	96587.95	96538.99
Add: Additional capital expenditure	(-) 154.47	(-) 6.81	(-) 94.48	(-) 48.96	(-) 273.66
<b>Closing capital cost</b>	<b>96689.24</b>	<b>96682.43</b>	<b>96587.95</b>	<b>96538.99</b>	<b>96265.33</b>
Average capital cost	96766.47	96685.83	96635.19	96563.47	96402.16

### **Debt-Equity Ratio**

41. Regulation 19 of the 2014 Tariff Regulations provides as follows:

*“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 utilization 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 modernization expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.

42. Accordingly, the gross normative loan and equity amounting to Rs.48884.54 lakh and Rs.47959.18 lakh, respectively as on 1.4.2014 as considered in order dated 22.3.2017 read with Corrigendum order dated 26.5.2017 in Petition No. 319/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 the 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	48884.54	50.48%	23.87	70.00%	306.24	50.00%	48602.17	50.49%
Equity	47959.18	49.52%	10.23	30.00%	306.24	50.00%	47663.17	49.51%
<b>Total</b>	<b>96843.70</b>	<b>100.00%</b>	<b>34.10</b>	<b>100.00%</b>	<b>612.48</b>	<b>100.00%</b>	<b>96265.33</b>	<b>100.00%</b>

### **Return on Equity**

43. 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 kilometer.”*

44. 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:*

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

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

*(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.”

45. 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 20.9605% in 2014-15, 21.3416% in 2015-18 and 21.5488% 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:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Normative Equity-Opening	47959.18	47881.94	47871.72	47824.47	47800.00
Add: Addition of Equity due to additional capital expenditure	(-) 77.23	(-) 10.22	(-) 47.24	(-) 24.48	(-) 136.83
Normative Equity-Closing	47881.94	47871.72	47824.47	47800.00	47663.17
Average Normative Equity	47920.56	47876.83	47848.10	47812.24	47731.58
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%
<b>Return on Equity (Pre-Tax) (annualized)</b>	<b>9397.22</b>	<b>9434.13</b>	<b>9428.47</b>	<b>9421.40</b>	<b>9430.81</b>

### Interest on Loan

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

*“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 Decapitalization 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-capitalization of such asset*

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



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

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

*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.”*

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

- (a) Gross normative loan amounting to Rs.48884.54 lakh as on 1.4.2014, as considered in order dated 22.3.2017 read with Corrigendum order dated 26.5.2017 in Petition No. 319/GT/2014, has been retained as on 1.4.2014;
- (b) Cumulative repayment amounting to Rs.47738.67 lakh as on 1.4.2014, as considered in order dated 22.3.2017 read with Corrigendum order dated 26.5.2017 in Petition No. 319/GT/2014, has been retained as on 1.4.2014;
- (c) Accordingly, the net normative opening loan as on 1.4.2014 works out to Rs.1145.87 lakh;
- (d) Addition to normative loan on account of additional capital expenditure (net of de-cap's) approved above has been considered;
- (e) 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-capitalization of assets considered for the purpose of tariff;
- (f) The Petitioner has claimed interest on loan considering weighted average rate of interest (WAROI) of 6.6783% in 2014-15, 7.2445% in 2015-16, 7.4242% in 2016-17, 7.4708% in 2017-18 and 7.5087% in 2018-19. The interest on loan claimed for the year 2017-18 and 2018-19 is 'nil'. In line with



the provisions of the regulations stated above, the weighted average rate of interest has been calculated by applying the actual loan portfolio existing as on 1.4.2014, along with subsequent additions during the 2014-19 tariff period, if any, for the generating station.

48. Accordingly, Interest on loan has been worked out as under:

		<i>(Rs in lakh)</i>				
		2014-15	2015-16	2016-17	2017-18	2018-19
A	Gross opening loan	48884.54	48807.30	48810.72	48763.48	48739.00
B	Cumulative repayment of loan upto previous year	47738.67	48207.30	48749.62	48763.48	48739.00
C	Net Loan Opening (A-B)	1145.87	600.00	61.10	0.00	0.00
D	Addition due to additional capital expenditure	(-) 77.23	3.42	(-) 47.24	(-) 24.48	(-) 136.83
E	Repayment of loan during the year	545.87	562.78	61.10	0.00	0.00
F	Repayment adjustment on account of de-capitalization	77.23	20.46	47.24	24.48	136.83
G	Net Repayment of loan during the year (E-F)	468.63	542.32	13.86	(-) 24.48	(-) 136.83
H	Net Loan Closing (C+D-G)	600.00	61.10	0.00	0.00	0.00
I	Average Loan [(C+H)/2]	872.94	330.55	30.55	0.00	0.00
J	WAROI	6.6783%	7.2445%	7.4242%	7.4708%	7.5087%
K	<b>Interest on Loan (IxJ)</b>	<b>58.30</b>	<b>23.95</b>	<b>2.27</b>	<b>0.00</b>	<b>0.00</b>

### Depreciation

49. 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 upto 31.3.2014 from the gross depreciable value of the assets.*

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

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

50. Cumulative depreciation amounting to Rs.84077.32 lakh as on 1.4.2014, as considered in order dated 22.3.2017 read with Corrigendum order dated 26.5.2017 in Petition No. 319/GT/2014, has been retained for the purpose of tariff. The value of freehold land amounting to Rs.357.08 lakh and balance useful life of the generating station of 4.93 years as on 1.4.2014, as considered in order dated 22.3.2017 read with Corrigendum order dated 26.5.2017 in Petition No. 319/GT/2014 has been retained for



the purpose of tariff. Since, the elapsed life of the generating station as on 1.4.2014 is more than 12 years from the effective station COD of 20.1.1989, the depreciation has been calculated by spreading over the remaining depreciable value over the balance useful life of the plant. The balance depreciable value before providing depreciation for the year 2014-15 works out to Rs.2691.13 lakh. Accordingly, depreciation is worked out and allowed as under:

		<i>(Rs. in lakh)</i>				
		2014-15	2015-16	2016-17	2017-18	2018-19
A	Average capital cost	96766.47	96685.83	96635.19	96563.47	96402.16
B	Value of freehold land included in 'A'	357.08	357.08	357.08	357.08	357.08
C	Depreciable value [(A-B) x 90%]	86768.45	86695.88	86650.30	86585.75	86440.57
D	Remaining depreciable value at the beginning of the year (C – 'J' of previous year)	2691.13	2211.71	1640.17	1100.87	429.36
E	Balance useful life at the beginning of the year	4.93	3.93	2.93	1.93	0.93
F	Weighted average rate of depreciation (G/A)	0.5641%	0.5821%	0.5793%	0.5907%	0.4454%
G	<b>Depreciation during the year (D/E)</b>	<b>545.87</b>	<b>562.78</b>	<b>559.79</b>	<b>570.40</b>	<b>429.36</b>
H	Cumulative depreciation at the end of the year, before adjustment for de-capitalization ('J' of previous year + G)	84623.19	85046.94	85569.91	86055.28	86440.57
I	Depreciation adjustment on account of de-capitalization	139.02	36.82	85.03	44.06	246.29
J	Cumulative depreciation at the end of the year (H-I)	84484.17	85010.12	85484.87	86011.22	86194.28

### **Operation & Maintenance Expenses**

51. Regulation 29(1)(a) of the 2014 Tariff Regulations specifies the following norms for O&M expenses for coal based/lignite fired generating station:

*“Normative Operation and Maintenance expenses of thermal generating stations shall be as follows:*

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

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

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

”	200/210/250 MW	Additional 5 <sup>th</sup> & 6th units	0.90
		Additional 7 <sup>th</sup> & more units	0.85
”	300/330/350 MW	Additional 4 <sup>th</sup> & 5th units	0.90
		Additional 6 <sup>th</sup> & more units	0.85
”	500 MW and above	Additional 3 <sup>rd</sup> & 4th units	0.90
		Additional 5 <sup>th</sup> & above units	0.85

52. The O&M expenses claimed by the Petitioner is as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
O&M expenses (normative) under Regulation 29 (1) of the 2014 Tariff Regulations (A)	10038.00	10668.00	11340.00	12054.00	12814.20
<b>O&amp;M expenses under Regulation 29(2) of the 2014 Tariff Regulations</b>					
Water Charges (B)	217.60	233.85	217.96	250.43	160.61
Capital Spares consumed (C)	147.12	559.28	82.09	47.58	119.55
<b>Total O&amp;M expenses claimed (Regulation 29(1) &amp; Regulation 29 (2) of the 2014 Tariff Regulations (D) = (A+B+C)</b>	<b>10402.72</b>	<b>11461.13</b>	<b>11640.05</b>	<b>12352.01</b>	<b>13094.37</b>
Impact of Pay revision (E)	0.00	31.29	1597.94	2050.70	2451.02
Impact of GST (F)	0.00	0.00	0.00	91.77	157.66
Ash Transportation Expenditure (G)	0.00	0.00	0.00	0.00	2537.23
<b>Total O&amp;M expenses claimed (H) = (D+E+F+G)</b>	<b>10402.72</b>	<b>11492.42</b>	<b>13237.99</b>	<b>14494.48</b>	<b>18240.28</b>

53. The normative O&M expenses claimed by Petitioner are in terms of Regulation 29(1)(a) of the 2014 Tariff Regulations and are the same as allowed by order dated 22.3.2017 in Petition No. 319/GT/2014. Hence, the claim of the Petitioner for normative O&M expenses is allowed as under:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
10038.00	10668.00	11340.00	12054.00	12814.20

## Water Charges



54. Regulation 29(2) of the 2014 Tariff Regulations provide as follows:

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

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

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

55. The Petitioner, in support of claim, has submitted the notification dated 15.7.2011 from the State Irrigation Department as regards the computation of water charges. The Petitioner vide affidavit dated 12.7.2021 has furnished Audited Form 3(B), in respect of the actual water charges incurred for the 2014-19 tariff period along with the computation of the year-wise claim as shown below:

		2014-15	2015-16	2016-17	2017-18	2018-19
Type of Cooling Tower	-	Induced Draft Cooling Tower				
Type of Cooling Water System	-	Closed Cycle				
Water Consumption	Cusec	19.97	19.04	19.96	19.27	14.89
Actual water Consumption	1000 Cubic Feet	621053.57	592199.42	620701.06	599440.28	462998.59
Rate of Water Charges	Rs/ 1000 cubic feet	12.48	12.48	12.48	12.48	12.48
Rate of Royalty	Rs lakh/ cusec/ year	6.00	6.00	6.00	6.00	6.00
Water Charges Paid	Rs. lakh	197.31	188.14	197.20	190.44	147.10
Maintenance Charges	Rs. lakh	20.29	45.70	20.76	59.99	13.52
Total water Charges Paid	Rs. lakh	217.60	233.85	217.96	250.43	160.61

56. After scrutiny of the said information, the audited actual water charges claimed by the Petitioner, as above, are allowed on prudence check:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
217.60	233.85	217.96	250.43	160.61



## Capital Spares

57. The second proviso to Regulation 29(2) of the 2014 Tariff Regulations provides as follows:

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

58. As per Regulation 29(2) of the 2014 Tariff Regulations, capital spares are admissible separately. The Petitioner has claimed total capital spares for Rs.955.62 lakh for 2014-19 tariff period (i.e., Rs.147.12 lakh in 2014-15, Rs.559.28 lakh in 2015-16, Rs.82.09 lakh in 2016-17, Rs.47.58 lakh in 2017-18 and Rs.119.55 lakh in 2018-19). The Petitioner has submitted that in order to meet the customers demand and to maintain high machine availability at all times by the generating station, the units/equipment's are taken under overhaul/maintenance and inspected regularly for wear and tear. It has stated that during such works, spares parts of equipment's which had been damaged/ unserviceable are replaced/consumed so that the machines continue to perform at expected efficiency, on a sustained basis. Therefore, the Petitioner has prayed that capital spares replaced/consumed by the generating station during the 2014-19 tariff period may be allowed.

59. The Petitioner vide affidavit dated 12.7.2021 has submitted the audited Form-17, in support of capital spares consumed. The details of the capital spares submitted by the Petitioner in Form-9Bi is as follows:

*(Rs. in lakh)*

Year	Capital Spares		
	Part of capital cost	Not part of capital cost	Total Consumed
	(A)	(B)	(A+B)
2014-15	6.89	140.23	147.12
2015-16	2.15	557.13	559.28
2016-17	82.09	0.00	82.09



Year	Capital Spares		
	Part of capital cost	Not part of capital cost	Total Consumed
	(A)	(B)	(A+B)
2017-18	47.58	0.00	47.58
2018-19	118.16	1.40	119.55

60. We have examined the list of the capital spares consumed by the Petitioner. It is evident from the audited statement and Form-9Bi of the respective years, that capital spares claimed comprise of two categories i.e. (i) spares which form part of the capital cost and (ii) spares which do not form part of the capital cost of the project. In respect of capital spares which form part of the capital cost of the project, the Petitioner has been recovering tariff since their procurement and, therefore, the 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 project, are being considered.

61. 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 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 the allowed capital spares considered for the 2014-19 tariff period is summarized as follows:

		<i>(Rs. in lakh)</i>				
		2014-15	2015-16	2016-17	2017-18	2018-19
A	Capital spares claimed (not part of capital cost)	140.23	557.13	0.00	0.00	1.40
B	Value of capital spares disallowed (less than Rs.1 lakh)	2.08	2.21	0.00	0.00	0.34



		2014-15	2015-16	2016-17	2017-18	2018-19
	on individual basis)					
C	Total value of capital spares considered (A-B)	138.14	554.92	0.00	0.00	1.06

62. Further, we are of the view that spares do have a salvage value. Accordingly, in line with the practice of considering the salvage value, presumed to be recovered by the Petitioner on sale of other capital assets, on becoming unserviceable, the salvage value of 10% has been deducted from the cost of capital spares considered above, for the 2014-19 tariff period. Therefore, on prudence check of the information furnished by the Petitioner in Form-17 and on applying the said ceiling limit along with deduction of the salvage value @10%, the net capital spares allowed in terms of Regulation 29(2) of 2014 Tariff Regulations is as follows:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Net total value of capital spares considered (A)	138.14	554.92	0.00	0.00	1.06
Salvage value @ 10% (B)	13.81	55.49	0.00	0.00	0.11
<b>Net value of capital spares allowed (A-B)</b>	124.33	499.43	0.00	0.00	0.95

#### **Additional O&M Expenses on account of Goods and Service Tax (GST)**

63. The Petitioner has claimed additional O&M expenses of Rs.91.77 lakh in 2017-18 and Rs.157.66 lakh in 2018-19 on account of payment of GST. 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 para 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...”*



64. 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**

65. The Petitioner has claimed an amount of Rs.6130.95 lakh (Rs.31.29 lakh during 2015-16, Rs.1597.94 lakh during 2016-17, Rs.2050.70 lakh during 2017-18 and Rs.2451.02 lakh during 2018-19) as impact of wage revision of employees of CISF and Kendriya Vidyalaya Staff from 1.1.2016 and 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 employee’s consequent upon wage revision. As such, as per consistent methodology adopted by the Commission, 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. Accordingly, the claim of the Petitioner in respect of wage revision impact stands reduced to Rs.5344.75 lakh with the following year-wise break-up:

	<i>(Rs. in lakh)</i>				
	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>	<b>Total</b>
Wage revision impact claimed excluding PRP/ ex-gratia	31.29	1597.94	1888.83	1826.70	5344.75

66. The Petitioner vide affidavit dated 30.6.2021 has submitted the following:

- (a) Comparative table indicating the actual O&M expenses incurred at this generating station versus the normative O&M expenses allowed for the 2014-19 tariff period for the whole generating station (i.e., all Stages of the generating station);





(b) Actual impact of pay revision duly certified by Auditor, Expenses after comparing salaries wages before and after pay revision; and

(c) Detailed break-up of the actual O&M expenses booked by the Petitioner on gross basis

67. The Petitioner vide affidavit dated 30.6.2021 has furnished the comparative table indicating the actual O&M expenses incurred vis-a-vis the normative O&M expenses recovered in tariff in respect of the generating station (all stages combined) (1550 MW) and for this generating station (420 MW) for the 2014-19 tariff period as under:

		<i>(in Rs. lakh)</i>				
		2014-15	2015-16	2016-17	2017-18	2018-19
1	Actual O&M expenditure for Unchahar STPS excluding water charges (1550 MW)	31183	34983	35960	42561	64281
2	Total Normative O&M recovery excluding water charges in tariff for Unchahar STPS (1550MW)	25095	26670	28350	34953	42250
3	Under-recovery of O&M Charges in Unchahar TPS (1550 MW)	(-) 6088	(-) 8313	(-) 7610	(-) 7608	(-) 22031

68. The Petitioner has also submitted the actual O&M expenses (prorated) to MW ratio in comparison to the normative O&M expenses allowed, as under:

		<i>(Rs.in lakh)</i>				
		2014-15	2015-16	2016-17	2017-18	2018-19
1	Actual O&M expenditure incurred for Unchahar Stage –I (2x210 MW) excluding water charges (Pro rata in the ratio of installed capacity)	12473	13993	14384	13743	17418
2	Normative O&M recovery in tariff of Unchahar Stage –I (2x210 MW) allowed in order dated 22.3.2017 in Petition No. 319/GT/2014	10038	10668	11340	12054	12814
3	Difference (Normative - Actual) / Under Recovery for Unchahar Stage-I (2 - 1)	(-) 2435	(-) 3325	(-) 3044	(-) 1689	(-) 4604

69. The Petitioner has also submitted that O&M norms for the 2014 Tariff Regulations, were decided on actual O&M expenses for 2008-09 to 2012-13 period. However, the 3<sup>rd</sup> Pay Revision Committee for CPSU's was not in existence and/ or



incorporated while the 2014 Tariff Regulations were being framed by the Commission. The Petitioner has further submitted that the implementation of recommendations of 7<sup>th</sup> Pay Commission and Office Memorandum of Department of Public Enterprises (DPE) were communicated in 2016/2017, whereas the 2014 Tariff Regulations were notified much prior to 3.8.2017. Accordingly, the Petitioner has submitted that the impact thereof, ought to be made pass through in terms of Regulation 54 and 55 of the 2014 Tariff Regulations.

70. We have examined the matter. 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 Statement of Object and Reasons (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 SOR is extracted as follows:

*"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 macroeconomics 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 the SOR above suggests a comparison of the normative O&M expenses with the actual O&M expenses, on a year to year basis.

However, in this respect, the following facts need consideration:

- a) The norms are framed based on the averaging of the actual O&M expenses 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. As such, 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 whether 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 actual 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 break-up of the actual O&M expenses incurred during the 2014-19 tariff period for combined stages i.e. Stage-I, II, III and IV of the generating station (1550 MW). It is noticed that the total O&M expenses incurred is more than the normative O&M expenses recovered during each year of the 2014-19 tariff period. The impact of the wage revision could not be factored by the Commission while framing the O&M expenses 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 relevant provisions of SOR of the 2014 Tariff Regulations, the approach followed for arriving at the allowable impact of pay revision is given in the subsequent paragraphs.

74. First step is to compare the normative O&M expenses with the actual O&M expenses 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 fees, ex-gratia, loss of provisions, prior period expenses, community development, store expenses, ash utilization expenses, RLDC fee & charges and others (without breakup/ details) which were not considered while framing the O&M expenses norms for the 2014-19 tariff period, have been excluded from the yearly actual O&M expenses of the generating station as well as corporate centre. Having brought the normative O&M expenses and actual O&M expenses at same level, if normative O&M expenses for the period 2015-19 are higher than actual O&M expenses (normalized) for the same period, the impact of wage revision (excluding PRP and ex-gratia) as claimed for the 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 less than the actual O&M expenses (normalized) 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.



75. In this regard, the details as furnished by the Petitioner for actual O&M expenses for Stage-I, II, III and IV of the generating station (1550 MW) and wage revision impact (excluding PRP and ex-gratia) for Stage-I (420 MW) of the generating station are as follows:

	<i>(Rs. in lakh)</i>				
	2015-16	2016-17	2017-18	2018-19	Total for 2015-19
Actual O&M expenditure (normalized) for the generating station (Combined for stage-I, II, III and IV) (A)	34983.11	35960.36	42561.08	64281.01	177785.57
Actual O&M expenditure (normalized) for Stage-I of the generating station prorated based on capacity (B)	9479.30	9744.10	11532.68	17418.08	48174.15
Normative O&M Expenses for Stage-I of the generating station (C)	10668.00	11340.00	12054.00	12814.20	46876.20
Under-recovery (D) = (C)-(B)	1188.70	1595.90	521.32	(-) 4603.88	(-) 1297.95
Wage revision impact claimed excluding PRP/ex-gratia (E)	31.29	1597.94	1888.83	1826.70	5344.75

76. As stated, for like to like comparison of the actual O&M expenses and normative O&M expenses, sub-heads as discussed at above, has been excluded from the actual O&M expenses to arrive at the actual O&M expenses (normalized) for the Stage-I of the generating station (420 MW). Accordingly, the following table portrays the comparison of normative O&M expenses versus the actual O&M expenses (normalized) along with wage revision impact claimed by the Petitioner for the generating station (Stage-I 420 MW) for period 2015-19 (on combined basis) commensurate with the wage revision claim being spread over these four years:

	<i>(Rs. in lakh)</i>				
	2015-16	2016-17	2017-18	2018-19	Total for 2015-19
Actual O&M expenditure (normalized) for the generating station (Combined for stage-I, II, III and IV) (a)	31162.56	33682.91	37531.98	50644.03	153021.47
Actual O&M expenditure (normalized) for Stage -I of the generating station prorated based on	8444.05	9126.98	10169.96	13722.90	41463.88



	2015-16	2016-17	2017-18	2018-19	Total for 2015-19
capacity (b)					
Normative O&M Expenses for Stage -I of the generating station (c)	10668.00	11340.00	12054.00	12814.20	46876.20
Under-recovery (d) = (c)-(b)	2223.95	2213.02	1884.04	(-) 908.70	5412.32
Wage revision impact excluding PRP/ex-gratia (Claimed)	31.29	1597.94	1888.83	1826.70	5344.75
Wage revision impact excluding PRP/ex-gratia (Allowed)	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

77. It is observed that for the period from 2015-16 to 2018-19, the normative O&M expenses is more than the actual O&M expenses (normalized) incurred and the over recovery is to the tune of Rs.5412.32 lakh. As such, in terms of methodology as discussed above, the wage revision impact (excluding PRP/incentive) of Rs.5344.75 lakh is not allowable for this generating station.

#### **Additional O&M Expenses on account of Fly Ash Transportation expenses**

78. The Petitioner has claimed an amount of Rs.2537.23 lakh on account of Ash Transportation expenses in 2018-19 as additional O&M expenses. The Petitioner has submitted that the Ministry of Environment, Forest & Climate Change (MOEF&CC) notification dated 25.1.2016, under the statutory provisions of Environment (Protection) Act 1986, provides for transportation cost of Fly ash generated at power stations to be borne by such generating companies. The Petitioner has stated that it had filed Petition No. 172/MP/2016 before this Commission, seeking reimbursement of the additional expenses incurred towards Fly Ash transportation, directly from the beneficiaries as the same are statutory expenses.

79. The Petitioner vide affidavit dated 30.6.2021 has submitted the following details:

- (i) *Award of fly ash transportation contract through a transparent competitive bidding procedure. Alternatively, the schedule rates of the respective State Governments, as applicable for transportation of fly ash.*



(ii) Details of the actual additional expenditure incurred on Ash transportation after 25.1.2016, duly certified by auditors.

(iii) Details of the Revenue generated from sale of fly ash/ fly ash products and the expenditure incurred towards Ash utilization up to 25.1.2016 and from 25.1.2016 to till date, separately.

(iv) Revenue generated from fly Ash sales maintained in a separate account as per the MoEF notification.

80. The Petitioner has submitted the details along with the computation of the claimed cost towards Ash Transportation. The Petitioner has also submitted that a Memorandum of Understanding (MoU) was entered into between NTPC and National Highways Authority of India (NHAI) on 9.10.2017 for bearing the cost of transportation of ash from Unchahar generating station, for utilization in the construction of road embankment at four-laning of Sultanpur to Varanasi section of NH-56 and four-laning of Ghaghra bridge to Varanasi section of NH-233 in the State of Uttar Pradesh, in compliance to the MOEF&CC notification dated 3.11.2009, as amended on 25.1.2016.

81. The Petitioner has also enclosed copy of the prevailing Schedule of Rates (SoR) of the State of Uttar Pradesh in support of its claim for rate for transportation of fly ash. The Petitioner has further submitted that it had already furnished the ash transportation expenses that was charged to P&L account, over and above the amount accumulated in ash fund through sale of ash, for the generating station, duly certified by Auditor. It has claimed the same amount as additional O&M expenses on account of transportation of fly ash in terms of the MOEF&CC notification dated 25.1.2016. The Petitioner has stated that the net expenses charged to P&L account has been arrived at by deducting the revenue earned from sale of fly ash/fly ash products after 25.1.2016, as tabulated below:

	<i>(Rs. in lakh)</i>
	<b>2018-19</b>
Revenue from Sale of Fly Ash/Fly Ash Products (A)	5867.38
Expenditure on Ash Transportation (B)	15230.95
Ash Transportation expense charged to P&L (B-A)	9363.57



82. The Petitioner has further submitted that it has furnished the details of the actual additional expenditure incurred towards transportation of fly ash after 25.1.2016 along with details of the revenue generated from sale of ash from 25.1.2016 to 31.3.2019 and Auditor certificate in respect of the year-wise ash transportation expenses met out of P&L accounts.

83. The matter has been examined. As regards the reimbursement of ash transportation expenses, the Commission in its order dated 5.11.2018 in Petition No.172/MP/2016, while directing compliance of certain conditions by the Petitioner, had granted liberty to the Petitioner to approach the Commission at the time of truing-up exercise for the 2014-19 tariff period along with all details/ information, duly certified by auditor. In compliance to the above, the Petitioner has furnished the details of the distance to which fly ash has been transported from the generating station, schedule rates applicable for transportation of fly ash, as notified by the Government of Uttar Pradesh along with details, including Auditor certified accounts. These documents have been examined and on prudence check, the reimbursement of Rs.2537.23 lakh (pro rata based on capacity) as claimed by the Petitioner for the year 2018-19 towards fly ash transportation expenses is allowed to be recovered in 6 (six) equal monthly installments. Considering the fact that reimbursement of ash transportation expenses is being allowed based on the MOEF&CC notification, these expenses are not made part of the O&M expenses and the consequent annual fixed charges being determined in this order under the 2014 Tariff Regulations.

84. Based on the above discussions, the total annualized O&M expenses allowed in respect of the generating station is summarized below:

**(Rs. in lakh)**





		2014-15	2015-16	2016-17	2017-18	2018-19
Installed Capacity (MW) (A)		420.00	420.00	420.00	420.00	420.00
O&M Expenses under Reg. 29(1) in Rs. in lakh / MW (B)		23.90	25.40	27.00	28.70	30.51
Total O&M Expenses (Rs. in lakh) (C = A x B)	Claimed	10038.00	10668.00	11340.00	12054.00	12814.20
	Approved	10038.00	10668.00	11340.00	12054.00	12814.20
Water Charges (Rs. in lakh) (D)	Claimed	217.60	233.85	217.96	250.43	160.61
	Approved	217.60	233.85	217.96	250.43	160.61
Capital Spares Consumed (Rs. in lakh) (E)	Claimed	147.12	559.28	82.09	47.58	119.55
	Approved	124.33	499.43	0.00	0.00	0.95
<b>Total O&amp;M Expenses as allowed (including Water Charges and Capital Spares Consumed) (F) = (C+D+E)</b>	Claimed	<b>10402.72</b>	<b>11461.13</b>	<b>11640.05</b>	<b>12352.01</b>	<b>13094.37</b>
	Approved	<b>10379.93</b>	<b>11401.28</b>	<b>11557.96</b>	<b>12304.43</b>	<b>12975.76</b>
<b>Additional O&amp;M Expenditure</b>						
Impact of Wage Revision (Rs. in lakh) (G)	Claimed	0.00	31.29	1597.94	2050.70	2451.02
	Approved	0.00	0.00	0.00	0.00	0.00
Impact of GST (Rs. in lakh) (H)	Claimed	0.00	0.00	0.00	91.77	157.66
	Approved	0.00	0.00	0.00	0.00	0.00
Ash Transportation Expenditure (I)	Claimed	0.00	0.00	0.00	0.00	2537.23
	Approved	0.00	0.00	0.00	0.00	2537.23
<b>Sub-Total Additional O&amp;M Expenditure (J = F+G+H+I)</b>	Claimed	0.00	31.29	1597.94	2142.47	5145.91
	Approved	0.00	0.00	0.00	0.00	2537.23
<b>Total O&amp;M Expenses (Rs. in lakh) (K = F+I)</b>	Claimed	<b>10402.72</b>	<b>11492.42</b>	<b>13237.99</b>	<b>14494.48</b>	<b>18240.28</b>
	Approved	<b>10379.93</b>	<b>11401.28</b>	<b>11557.96</b>	<b>12304.43</b>	<b>15512.99</b>

### Special Allowance

85. 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 modernization beyond the useful life of the generating station or a unit thereof, and in such an event, revision of the capital cost shall not be allowed and the applicable operational norms shall not be relaxed but the special allowance shall be included in the annual fixed cost: Provided that such option shall not be available for a generating station or unit for which renovation and modernization has been undertaken and the expenditure has been admitted by the Commission before commencement of these regulations, or for a generating station or unit which is in a depleted condition or operating under relaxed operational and performance norms.*

*(2) The special Allowance shall be @ 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 utilized from special allowance shall be maintained separately by the generating station and details of same shall be made available to the Commission as and when directed to furnish details of such expenditure.”*

86. The Petitioner has opted and claimed total Special Allowance of Rs.17881.35 lakh as also allowed by the Commission vide order dated 22.3.2017 in Petition No. 319/GT/2014. Accordingly, the claim of the Petitioner for Rs.17881.35 lakh as Special Allowance is in order and is allowed under Regulation 16(1) of the 2014 Tariff Regulations.

### **Operational Norms**

#### **(a) Normative Annual Plant Availability Factor**

87. The Normative Annual Plant Availability Factor of 83% for 2014-15 to 2016-17 and 85% for 2017-18 and 2018-19, in accordance with the provisions of Regulation 36 (A) of the 2014 Tariff Regulations as approved in order dated 22.3.2017 in Petition No. 319/GT/2014 has been allowed.

#### **(b) Auxiliary Energy Consumption**

88. The Auxiliary Energy Consumption (AEC) of 9% claimed as per Regulation 36(E)(a)(ii) of the 2014 Tariff Regulations and approved by order dated 22.3.2017 in Petition No. 319/GT/2014 has been allowed.



**(c) Station Heat Rate**

89. The Gross Station Heat Rate of 2450 Kcal/kWh as approved in order dated 22.3.2017 in Petition No. 319/GT/2014 in terms of Regulation 36(C) of the 2014 Tariff Regulations has been allowed.

**(d) Specific Oil Consumption**

90. The specific oil consumption of 0.5 ml/kWh as approved in order dated 22.3.2017 in Petition No. 319/GT/2014 in terms of Regulation 36(C) of the 2014 Tariff Regulations has been allowed.

**Interest on Working Capital**

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

*“28. Interest on Working Capital:*

*(1) The working capital shall cover:*

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

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

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

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

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

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

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

*(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**

92. Regulation 28(2) of the 2014 Tariff Regulations provides that the computation of cost of fuel as a part of Interest on Working Capital (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.

93. Regulation 30 (6) of the 2014 Tariff Regulations provides as follows:

*“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 places in accordance with the following formula:*

**(a) For coal based and lignite fired stations**

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

*(b) xxxxx*

*Where,*

*AUX = Normative auxiliary energy consumption in percentage.*

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

*(b) Weighted Average Gross calorific value of primary fuel **as received**, in kCal per kg, per litre or per standard cubic meter, as applicable for lignite, gas and liquid fuel based stations.*

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

*CVSF = Calorific value of secondary fuel, in kCal per ml.*

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

*GHR = Gross station heat rate, in kCal per kWh.*

*LC = Normative limestone consumption in kg per kWh.*

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

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

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

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



94. 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.

95. Regulation 30 (7) of the 2014 Tariff Regulations provides as follows:

*“(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.”*

96. The Regulations for computation of energy charges was challenged by the Petitioner and other generating issue of 'as received' GCV specified in Regulation 30 of the 2014 Tariff companies 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 follows:

*“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.”*

97. 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 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.

98. In Petition No. 319/GT/2014 filed by the Petitioner for determination of tariff of this generating station for the 2014-19 tariff period, the Petitioner had not furnished GCV of coal on 'as billed' and on '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 order dated 22.3.2017 in Petition No.319/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.

99. The Petitioner, in this petition, has furnished the average GCV of coal as 3667.83 Kcal/kg on "as received" basis for the period from October 2016 to March 2019. As per the Commission's order dated 25.1.2016 in Petition No. 283/GT/2014, the Petitioner in Form-13 F 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 120 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 120 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, the Petitioner has claimed the cost of fuel component in the working capital as follows:

	<i>(Rs. in lakh)</i>				
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Cost of Coal towards stock (30 days)	6592.91	6592.91	6592.91	6751.77	6751.77
Cost of Coal towards Generation (30 days)	6592.91	6592.91	6592.91	6751.77	6751.77
Cost of Secondary fuel oil 2 months	141.97	142.36	141.97	145.39	145.39

100. The Petitioner has claimed Energy Charge Rate (ECR) ex-bus of 291.718 paise/kWh for the generating station based on GCV and price of fuel (coal and secondary fuel oil) as indicated above.

101. In response to the clarification sought from the Petitioner on the details of GCV on ‘as received’ basis 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, however, for calculation of IWC under Regulation 28(2) of the 2014 Tariff Regulations, the GCV shall 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, 2014 on actual GCV i.e., 'as fired' GCV. The Petitioner, without prejudice to the above submissions, 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, as follows:

<b>Month</b>	<b>Wt. Avg. GCV of coal received (EM basis) (kcal/kg)</b>	<b>Total moisture (TM) (in %)</b>	<b>Equilibrated moisture (EM) (in %)</b>	<b>Wt. Avg. GCV of coal received (TM basis) (kcal/kg)</b>
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	(A)	(B)	(C)	(D)= (A)*(1-B%)/(1-C%)
January 2014	3975	8.71	4.72	3808.54
February 2014	4056	12.08	4.39	3729.77
March 2014	3975	8.12	3.91	3800.84
Average				<b>3779.72</b>

102. The submissions have been considered. As stated above, the Petitioner in Form-13 F, 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 120 kCal/kg for computation of the working capital of the generating station.

103. 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 the 2014-19 tariff period is to be based on such values for the 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. 319/GT/2014. In this 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 120 kCal/kg cannot be considered, as the same is not as per provisions of the 2014 Tariff Regulations.

104. 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 101 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."*

105. Accordingly, 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 furnished 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.

106. 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.

107. The Petitioner has calculated GCV of 3667.83 kcal/kg which represents the simple average of GCV of the 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 the table under paragraph 101 above, works out to 4002.00 kcal/kg.

108. 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 4002.00 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.

109. Based on the above discussion, the cost of fuel components in working capital is worked out and allowed as under:

	<i>(Rs. in lakh)</i>				
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Cost of Coal towards stock (30 days)	6026.17	6026.17	6026.17	6171.38	6171.38
Cost of Coal towards generation (30 days)	6026.17	6026.17	6026.17	6171.38	6171.38
Cost of Secondary fuel oil 2 months	141.97	142.36	141.97	145.39	145.39



110. The cost of coal towards stock and generation allowed for the 2014-19 tariff period is more than the cost claimed by the Petitioner for the following reasons:

a) The Petitioner has considered average GCV of coal for 30 months as 3667.83 kCal/kWh (including adjustment of GCV of 120 kCal/kg) and weighted average price of coal as 3940.46 Rs/MT while the Commission has considered the same as weighted average GCV 4002.00 kCal/kg and 3929.87 Rs/MT respectively. Storage loss of 120 kCal/kg as considered by the Petitioner has not been considered as there is no such provision in 2014 Tariff Regulations.

b) The Petitioner has considered the 'Normative Transit & Handling losses of 0.80% within the limit as prescribed in Regulation 30(8) of the 2014 Tariff Regulations.

### **Energy Charge Rate (ECR) for calculating working capital**

111. 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:*

*(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"*

112. The Petitioner has claimed Energy Charge Rate (ECR) ex-bus of 291.718 Paise/kWh for the generating station based on the landed cost of coal during preceding three months, GCV of coal (on 'as received' basis for average of 30 months) along with the storage loss of 120 kCal/kg) & GCV and price of Oil procured and burnt for the preceding three months of 2014-19 for the generating station. Since



these claims of the Petitioner have not been allowed in the para as stated above, the allowable Energy Charge Rate (ECR), based on the operational norms as specified under the 2014 Regulations and on weighted average of 'as received' GCV of 4002.00 kcal/kg is worked out as follows:

	<b>Unit</b>	<b>2014-19</b>
Capacity	MW	420.00
Gross Station Heat Rate	kCal/kWh	2450.00
Aux. Energy Consumption	%	9.00%
Weighted average GCV of oil	kCal/lit	9990.00
Weighted average Average GCV of Coal for January 2014 to March 2014	kCal/kg	4002.00
Weighted average price of oil	Rs. /KL	55789.96
Weighted average price of Coal	Rs. /MT	3929.87
Rate of Energy Charge ex-bus	Rs. /kWh	2.669

113. The Energy Charges for two months for computation of working capital based on ECR of Rs.2.669/kWh, has been worked out as under:

*(Rs. in lakh)*

<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
74168.83	74372.04	74168.83	75956.04	75956.04

114. Accordingly, the fuel component in working capital is allowed as under:

*(Rs. in lakh)*

	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Cost of Coal towards stock (30 days)	6026.17	6026.17	6026.17	6171.38	6171.38
Cost of Coal towards Generation (30 days)	6026.17	6026.17	6026.17	6171.38	6171.38
Cost of Secondary fuel oil 2 months	141.97	142.36	141.97	145.39	145.39

### **Working Capital for Maintenance Spares**

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

*(Rs. in lakh)*

<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
2080.54	2298.48	2647.60	2898.90	3648.06

116. Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provide for maintenance spares @ 20% of the O&M expenses.



117. As specified under Regulation 29(2) of the 2014 Tariff Regulations, the cost of maintenance spares @20% of the O&M expenses, including water charges and cost of capital spares consumed, allowed are as follows:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
2075.99	2280.26	2311.59	2460.89	2595.15

### **Working Capital for Receivables**

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

<i>(Rs.in lakh)</i>					
	2014-15	2015-16	2016-17	2017-18	2018-19
Variable Charges - for two months (A)	12361.47	12395.34	12361.47	12659.34	12659.34
Fixed Charges – for two months (B)	4107.99	4292.90	4314.68	4460.66	4557.06
<b>Total (C) = (A+B)</b>	<b>16469.47</b>	<b>16688.24</b>	<b>16676.15</b>	<b>17120.00</b>	<b>17216.40</b>

### **Working Capital for O & M Expenses (1 month)**

119. O&M expenses for 1 month claimed by the Petitioner in Form-13B for the purpose of working capital is shown in the table as under:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
866.89	957.70	1103.17	1207.87	1520.02

120. Regulation 28(a)(vi) of the 2014 Tariff Regulations provides for O&M expenses for one month for coal-based generating station as a part of working capital. The one-month O&M expenses, as allowed for is as under:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
864.99	950.11	963.16	1025.37	1081.31

121. The difference in the O&M expenses for 1 month and maintenance spares claimed (tables under paragraphs 115 and 119 above) and the O&M expenses for 1 month and cost of maintenance spares allowed (tables under paragraphs 117 and 120



above) is due to the fact that, while the Petitioner's claim is based on the O&M expenses inclusive of the expenses on impact of GST and wage revision, these components have not been included in our calculations towards working capital requirements.

**Rate of interest on working capital**

122. In terms of clause (3) of Regulation 28 of the 2014 Tariff Regulations, the rate of interest on working capital has been considered as 13.50% (Bank rate of 10.00% + 350 bps). Accordingly, Interest on working capital has been computed as under:

	<i>(Rs. in lakh)</i>				
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Working capital for Coal towards stock - 30 days (A)	6026.17	6026.17	6026.17	6171.38	6171.38
Working capital for Coal towards generation - 30 days (B)	6026.17	6026.17	6026.17	6171.38	6171.38
Working capital for Secondary Fuel Oil - 2 months (C)	141.97	142.36	141.97	145.39	145.39
Working Capital for O&M expenses - 1 month (D)	864.99	950.11	963.16	1025.37	1081.31
Working Capital for Maintenance Spares - 20% of O&M (E)	2075.99	2280.26	2311.59	2460.89	2595.15
Working Capital for Receivables - 2 months (F)	16469.47	16688.24	16676.15	17120.00	17216.40
<b>Total Working Capital (G) = (A+B+C+D+E+F)</b>	<b>31604.75</b>	<b>32113.30</b>	<b>32145.22</b>	<b>33094.40</b>	<b>33381.01</b>
Rate of Interest (H)	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Total Interest on Working capital (I) = (GxH)</b>	<b>4266.64</b>	<b>4335.30</b>	<b>4339.60</b>	<b>4467.74</b>	<b>4506.44</b>

**Annual Fixed Charges**

123. Accordingly, the annual fixed charges approved in this petition for the 2014-19 tariff period for the generating station is summarized as under:

	<i>(Rs. in lakh)</i>				
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	545.87	562.78	559.79	570.40	429.36
Interest on Loan	58.30	23.95	2.27	0.00	0.00
Return on Equity	9397.22	9434.13	9428.47	9421.40	9430.81
Interest on Working Capital	4266.64	4335.30	4339.60	4467.74	4506.44
O&M Expenses	10379.93	11401.28	11557.96	12304.43	12975.76
Special Allowance	3150.00	3350.02	3562.76	3788.98	4029.58
<b>Total</b>	<b>27797.96</b>	<b>29107.44</b>	<b>29450.85</b>	<b>30552.96</b>	<b>31371.94</b>

*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.*





## **Summary**

124. The total expenses allowed on truing-up, in respect of the generating station for the 2014-19 tariff period are summarized as under:

	<i>(Rs. in lakh)</i>				
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Annual Fixed Charges	27873.56	29192.88	29545.54	30655.54	31486.47
Ash Transportation Expenditure	0.00	0.00	0.00	0.00	2537.23

125. The difference between the annual fixed charges already recovered by the Petitioner, for the 2014-19 tariff period, and the annual fixed charges determined by this order shall be adjusted in terms of Regulation 8(13) of the 2014 Tariff Regulations.

126. Petition No. 302/GT/2020 is disposed of in terms of the above.

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

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

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

