

Sl. No	Head of Work / Equipment	Additional Capital Expenditure claimed under Exclusion				
		2014-15	2015-16	2016-17	2017-18	2018-19
D	Capitalization of WDG-3A Diesel Electric Locomotive 3100	0.00	0.00	20.68	0.00	0.00
E	Capitalization of Capital Spares	3568.20	4747.09	5878.58	4130.55	3805.22
F	Inter Unit Transfer	(-) 0.04	2.86	4.45	(-) 441.47	2046.51
G	Decapitalization - Not Part of Tariff	(-) 1661.44	(-) 1416.08	(-) 126.15	(-) 170.88	(-) 265.07
H	Decapitalization - Part of Tariff	(-) 148.11	(-) 50.56	(-) 70.63	(-) 85.22	(-) 3230.50
I	Reversal/Reinstatement of Liabilities	(-) 297.28	115.32	95.29	0.73	(-) 22.56
J	Overhauling	0.00	0.00	0.00	0.00	0.00
	<b>Total Exclusions</b>	<b>6291.91</b>	<b>6425.33</b>	<b>10210.60</b>	<b>3818.08</b>	<b>5704.67</b>

**a) Exclusion of book entries not claimed and not allowable as a part of capital cost as per the 2014 Tariff Regulations**

32. The Petitioner has sought total exclusion of Rs 39675.23 lakh during the period 2014-19 for capitalization of items disallowed or not claimed, CEA approved R&M schemes and other disallowed works, Loan ERV, WDG-3A diesel electric locomotive 3100, Capital spares, Inter-unit transfer, Reversal/reinstatement of liabilities and Overhauling, as under:

*(Rs. in lakh)*

Sl. No.	Head of Work / Equipment	Additional Capital Expenditure claimed under Exclusion				
		2014-15	2015-16	2016-17	2017-18	2018-19
A	Items disallowed or not claimed	0.00	3007.43	3929.94	406.75	3404.40
B	CEA Approved R&M schemes and other disallowed works	4814.45	0.00	478.73	0.00	0.00
C	ERV	16.13	19.27	(-) 0.30	(-) 22.38	(-) 33.33
D	Capitalization of WDG-3A Diesel Electric Locomotive 3100	0.00	0.00	20.68	0.00	0.00
E	Capitalization of Capital Spares	3568.20	4747.09	5878.58	4130.55	3805.22
F	Inter Unit Transfer	(-) 0.04	2.86	4.45	(-) 441.47	2046.51
G	Reversal/reinstatement of Liabilities	(-) 297.28	115.32	95.29	0.73	(-) 22.56
H	Overhauling	0.00	0.00	0.00	0.00	0.00
	<b>Total Exclusions</b>	<b>8101.46</b>	<b>7891.97</b>	<b>10407.38</b>	<b>4074.18</b>	<b>9200.24</b>

33. The Petitioner has submitted that these expenditures are considered under



exclusion considering that these items are either not allowed or not claimed by the Petitioner itself and thus shall not form part of capital cost for the purpose of tariff. As such, the exclusion of such positive entries (net basis) is allowed and has no impact on tariff.

**b) Exclusion of Negative entries**

34. The Petitioner has sought the total exclusion of (-) Rs 7224.65 lakh during the period 2014-19 for de-capitalization of items which form part of tariff and also not forming part of tariff, as detailed under:

*(Rs. in lakh)*

Sl. No.	Head of Work / Equipment	Additional Capital Expenditure claimed under Exclusion				
		2014-15	2015-16	2016-17	2017-18	2018-19
<b>A</b>	<b>Decapitalization - not part of tariff</b>	<b>(-) 1661.44</b>	<b>(-) 1416.08</b>	<b>(-) 126.15</b>	<b>(-) 170.88</b>	<b>(-) 265.07</b>
<i>a</i>	Decapitalization of Wagons	(-) 96.53	(-) 152.95	0.00	0.00	0.00
<i>b</i>	Decapitalization of spares	(-) 1071.32	(-) 1260.18	(-) 117.01	(-) 167.26	(-) 78.54
<i>c</i>	Decapitalization of MBOA	(-) 1.01	(-) 2.96	(-) 9.14	(-) 3.63	(-) 186.53
<i>d</i>	Decapitalization of Weigh Bridge 100 MT	(-) 24.53	0.00	0.00	0.00	0.00
<i>e</i>	Buy Back of Residential Assets	(-) 1.30	0.00	0.00	0.00	0.00
<i>f</i>	Decapitalization of MGR Track	(-) 466.75	0.00	0.00	0.00	0.00
<b>B</b>	<b>Decapitalization - Part of tariff</b>	<b>(-) 148.11</b>	<b>(-) 50.56</b>	<b>(-) 70.63</b>	<b>(-) 85.22</b>	<b>(-) 3230.50</b>
<i>a</i>	Decapitalization of Wagons (6 No)	(-) 99.36	(-) 50.56	0.00	0.00	0.00
<i>b</i>	Decapitalization of hospital equipment	0.00	0.00	(-) 21.72	0.00	0.00
<i>c</i>	Decapitalization of MBOA	(-) 48.75	0.00	(-) 48.90	(-) 85.22	(-) 3230.50
<b>A+B</b>	<b>Total Exclusions</b>	<b>(-) 1809.55</b>	<b>(-) 1466.65</b>	<b>(-) 196.78</b>	<b>(-) 256.10</b>	<b>(-) 3495.57</b>

35. The Petitioner has submitted that decapitalisation of these items has been considered under exclusions, considering the fact that the Commission is not allowing capitalization of Wagons, spares and MBOA after cut-off date. With regard to decapitalized assets which are not part of the capital cost, the exclusion of such negative entries corresponding to de-capitalization of these items is in order, and hence



the same is allowed. As regards decapitalisation of items forming part of capital cost under exclusion, the Commission is of the view that since these assets form part of the capital cost and had been earning tariff since their capitalization, the exclusion of said amounts corresponding to de-capitalization of these items is not allowed in terms of Regulation 14(4) of the 2014 Tariff Regulations.

36. Based on the above discussion, the summary of exclusions allowed/ not allowed is as under:

<i>(Rs in lakh)</i>					
	2014-15	2015-16	2016-17	2017-18	2018-19
Exclusions Claimed (A)	6291.91	6425.33	10210.60	3818.08	5704.67
Exclusions Allowed (B)	6440.02	6475.89	10281.23	3903.30	8935.17
<b>Exclusion not allowed (A-B)</b>	<b>(-) 148.11</b>	<b>(-) 50.56</b>	<b>(-) 70.63</b>	<b>(-) 85.22</b>	<b>(-) 3230.50</b>

37. Accordingly, the additional capital expenditure allowed, on cash basis, for the period 2014-19 is summarised below:

<i>(Rs. in lakh)</i>							
Sl. No	Head of Work /Equipment	Additional Capital Expenditure allowed on cash basis					Total
		2014-15	2015-16	2016-17	2017-18	2018-19	
1	Fire Detection System for CHP	0.00	0.00	179.80	0.58	0.00	180.38
2	Continuous Emission Monitoring System	0.00	0.00	177.75	8.59	0.00	186.33
3	Effluent Quality Monitoring System	0.00	0.00	34.79	0.00	0.00	34.79
4	Procurement of 400 KV circuit breakers	0.00	0.00	0.00	0.00	0.00	0.00
5	Installation of energy efficient lighting & fixtures	0.00	0.00	0.00	0.00	0.00	0.00
6	4 x 10 KW Solar PV Grid	0.00	0.00	0.00	0.00	0.00	0.00
7	BOBR Complete Wagons	47.32	0.00	0.00	0.00	1019.38	1066.70
8	Solar Power Generating Unit	0.00	0.00	0.00	0.00	0.00	0.00
9	Upgradation of DDCMIS for Stage II	0.00	0.00	0.00	0.00	6552.99	6552.99
	<b>Subtotal</b>	<b>47.32</b>	<b>0.00</b>	<b>392.33</b>	<b>9.17</b>	<b>7572.37</b>	<b>8021.18</b>
10	Decapitalization of Spares (part of capital cost)	(-) 64.03	(-) 11.94	(-) 21.96	(-) 281.84	(-) 61.60	(-) 441.36
	Assumed Deletion of DDCMIS	0.00	0.00	0.00	0.00	(-)2325.06	(-)2325.06



Sl. No	Head of Work /Equipment	Additional Capital Expenditure allowed on cash basis					Total
		2014-15	2015-16	2016-17	2017-18	2018-19	
	<b>Sub-total Additional Capitalization</b>	<b>(-)16.71</b>	<b>(-)11.94</b>	<b>370.37</b>	<b>(-)272.67</b>	<b>5185.71</b>	<b>5254.76</b>
11	Discharge of Liabilities	51.71	20.86	2.08	0.00	0.00	74.65
12	Exclusions not allowed	(-)148.11	(-)50.56	(-)70.63	(-)85.22	(-)3230.50	(-)3585.02
	<b>Total additional capital expenditure allowed</b>	<b>(-)113.11</b>	<b>(-)41.64</b>	<b>301.83</b>	<b>(-)357.89</b>	<b>1955.21</b>	<b>1744.39</b>

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

38. Accordingly, the capital cost allowed for the purpose of tariff is as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	319679.86	319566.75	319525.11	319826.94	319469.05
Add: Additional capital expenditure allowed	(-)113.11	(-)41.64	301.83	(-)357.89	1955.21
Closing capital cost	319566.75	319525.11	319826.94	319469.05	321424.25
Average capital cost	319623.30	319545.93	319676.02	319647.99	320446.65

### **Debt-Equity Ratio**

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

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

*Provided that:*

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

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

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

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

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

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



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

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

40. The gross normative loan and equity of Rs.163002.15 lakh and Rs.156677.70 lakh, respectively as on 1.4.2014 as allowed in order dated 10.3.2017 in Petition No. 316/GT/2014 has been retained as on 1.4.2014. Further, the additional capital expenditure approved as above, has been allocated to debt and equity in the ratio of 70:30. Also, for assets de-capitalised during the period 2014-19, the debt-equity ratio of 50:50 has been considered, as these assets were originally allocated to debt and equity in the ratio of 50:50 in the respective tariff petitions, except for de-capitalisation of spares of Rs.0.43 lakh in 2014-15, which was originally capitalised in 2007-08 and allocated to debt-equity in ratio of 70:30. Accordingly, the details of debt-equity ratio in respect of the generating station, as on 1.4.2014, and as on 31.3.2019, are as under:

	Capital cost as on 1.4.2014 (Rs. in lakh)	(%)	Net Additional capital expenditure (Rs. in lakh)	(%)	Total cost as on 31.3.2019 (Rs. in lakh)	(%)
Debt	163002.15	50.99%	2491.28	142.82%	165493.43	51.49%
Equity	156677.70	49.01%	(-746.88)	(-42.82%)	155930.82	48.51%
Total	<b>319679.85</b>	<b>100.00%</b>	<b>1744.39</b>	<b>100.00%</b>	<b>321424.25</b>	<b>100.00%</b>

### **Return on Equity**

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

*“24. Return on Equity:*

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

*(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations transmission system including communication system and run of 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 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 requirement 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 kilometres.”

42. 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.

*Illustration.*

(i) In case of the generating company or the transmission licensee paying Minimum Alternate Tax (MAT) @ 20.96% including surcharge and cess: Rate of return on equity =  $15.50/(1-0.2096) = 19.610\%$

(ii) In case of generating company or the transmission licensee paying normal corporate tax including surcharge and cess:

(a) Estimated Gross Income from generation or transmission business for FY 2014-15 is Rs 1000 crore.

(b) Estimated Advance Tax for the year on above is Rs 240 crore.

(c) Effective Tax Rate for the year 2014-15 = Rs 240 Crore/Rs 1000 Crore = 24%

(d) Rate of return on equity =  $15.50 / (1-0.24) = 20.395\%$

(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.”*

43. The Petitioner has claimed tariff considering the rate of return on equity (ROE) 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 ROE 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, ROE has been worked out as follows:

		<i>(Rs. in lakh)</i>				
		2014-15	2015-16	2016-17	2017-18	2018-19
Normative Equity-Opening	A	156677.70	156601.43	156576.44	156648.47	156467.69
Addition of Equity due to additional capital expenditure	B	(-)76.28	(-)24.99	72.03	(-)180.78	(-)536.87
Normative Equity-Closing	C=A+B	156601.43	156576.44	156648.47	156467.69	155930.82
Average Normative Equity	D=(A+C)/2	156639.57	156588.93	156612.45	156558.08	156199.25
Return on Equity (Base Rate)	E	15.500%	15.500%	15.500%	15.500%	15.500%
Effective Tax Rate for respective years	F	20.961%	21.342%	21.342%	21.342%	21.549%
Rate of Return on Equity (Pre-Tax)	G=E/(1-F)	19.610%	19.705%	19.705%	19.705%	19.758%
<b>Return on Equity (Pre-Tax) - annualized</b>	<b>H=DxG</b>	<b>30717.02</b>	<b>30855.85</b>	<b>30860.48</b>	<b>30849.77</b>	<b>30861.85</b>

### **Interest on Loan**

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

*“26. Interest on loan capital:*

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

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

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

*(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee as the case may be the repayment of loan shall be considered*



*from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.*

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

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

*Provided further that if the generating station or the transmission system as the case may be does not have actual loan then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.*

*(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.*

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

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

45. Interest on loan has been computed as under:

- a. Gross normative loan amounting to Rs.163002.15 lakh as considered in order dated 10.3.2017 in Petition No. 316/GT/2014 has been retained as on 1.4.2014.
- b. Cumulative repayment amounting to Rs.163002.15 lakh, as considered in order dated 10.3.2017 in Petition No. 316/GT/2014, has been retained as on 1.4.2014.
- c. Accordingly, the net normative opening loan as on 1.4.2014 is Nil.
- d. The weighted average rate of Interest on loan, as furnished by the Petitioner is considered for the 2014-19 tariff period after prudence check.
- e. The repayment for the respective years of the 2014-19 tariff period has been considered equal to the depreciation allowed for that year. Further, repayments have been adjusted for de-capitalisation of assets/works considered during the period and for discharges/reversal of liabilities deducted as on 1.4.2009.





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

(Rs. in lakh)						
		2014-15	2015-16	2016-17	2017-18	2018-19
Gross opening loan	A	163002.15	162965.32	162948.67	163178.47	163001.35
Cumulative repayment of loan upto previous year	B	163002.15	162965.32	162948.67	163178.47	163001.35
Net Loan Opening	C=A-B	0.00	0.00	0.00	0.00	0.00
Addition due to additional capital expenditure	D	(-)36.83	(-)16.65	229.80	(-)177.11	2492.08
Repayment of loan during the year	E	47.63	5.85	275.21	6.42	4513.68
Repayment adjustment on account of de-capitalization	F	106.16	31.25	46.29	183.53	2808.58
Repayment adjustment on a/c of discharges/reversals corresponding to un-discharged liabilities deducted as on 1.4.2009	F1	21.69	8.75	0.87	0.00	5.87
Net Repayment of loan during the year	G=E-F+F1	(-) 36.83	(-) 16.65	229.80	(-) 177.11	1710.97
Net Loan Closing	H=C+D-G	0.00	0.00	0.00	0.00	781.10
Average Loan	I=Average (C,H)	0.00	0.00	0.00	0.00	390.55
Weighted Average Rate of Interest on loan	J	6.5073%	6.3635%	5.2863%	5.0692%	5.1038%
<b>Interest on Loan</b>	<b>K=I*J</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>19.93</b>
Adjustment towards IDC capitalized in additional capital expenditure *	L	0.00	0.00	0.00	0.00	19.93
<b>Net Interest on Loan</b>	<b>M=K-L</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

\* restricted to interest on loan balance for the year

## **Depreciation**

47. 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.”*

48. The cumulative depreciation and freehold land amounting to Rs.251812.02 lakh and Rs.802.34 lakh, respectively, as on 1.4.2014, as considered in order dated 10.3.2017 in Petition No. 316/GT/2014, has been retained as on 1.4.2014. Depreciation has been worked out as under:

*(Rs. in lakh)*

		2014-15	2015-16	2016-17	2017-18	2018-19
Average Capital Cost	A	319623.30	319545.93	319676.02	319647.99	320446.65
Value of freehold land	B	802.34	802.34	802.34	802.34	802.34
Depreciable Value	$C=(A-B)\times 90\%$	286938.87	286869.23	286986.31	286961.08	287679.88
Remaining depreciable value at the	$D=C-(\text{Cumulative Depreciation at the})$	35126.85	27276.44	19483.39	11521.60	4513.68



		2014-15	2015-16	2016-17	2017-18	2018-19
beginning of the year	the end of previous year)					
No. of completed years at the beginning of the year	E	20.57	21.57	22.57	23.57	24.57
Balance useful life at the beginning of the year	F=Max[(25-E) or 0]	4.43	3.43	2.43	1.43	0.43
Depreciation (annualized)	H	7929.31	7952.32	8017.86	8057.06	4513.68
Cumulative depreciation adjustment of discharges / reversals corresponding to un-discharged liabilities deducted as on 1.4.2009	I	29.62	11.95	1.19	0.00	8.02
Cumulative depreciation adjustment on account of de-capitalization	J	178.16	54.12	82.49	330.35	5055.44
Cumulative depreciation (at the end of the period)	K=[(Cumulative depreciation at the end of previous year) +H+I-J]	259592.79	267502.93	275439.49	283166.20	282632.45

### **Compensation Allowance**

49. Regulation 17(1) of the 2014 Tariff Regulations provides as under:

*“17. Compensation Allowance:*

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

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

Years of Operation	Compensation Allowance (Rs. in lakh / MW / year)
0-10	Nil
11-15	0.20
16-20	0.50
21-25	1.00

50. The Petitioner has claimed Compensation allowance (unit-wise) to meet the expenses on new assets of capital nature, including, in the nature of minor assets 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>
500.00	750.00	750.00	1000.00	1000.00

51. Units I to III have already completed useful life of 25 years by 2013-14, Unit IV and Unit V will be completing useful life of 25 years during the period 2019-24. As such, Compensation allowance is admissible for Unit IV and Unit V only. Accordingly, the compensation allowance claimed by the Petitioner is allowed as under:

*(Rs. in lakh)*

<b>Compensation Allowed</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Unit Capacity IV (500 MW) COD - 1-Jul-96	250.00	250.00	250.00	500.00	500.00
Unit Capacity V (500 MW) COD-1-Apr-95	250.00	500.00	500.00	500.00	500.00
<b>Total</b>	<b>500.00</b>	<b>750.00</b>	<b>750.00</b>	<b>1000.00</b>	<b>1000.00</b>

### **Special Allowance**

52. In terms of Regulation 16 of 2014 Tariff Regulations, the Special Allowance claimed by the Petitioner is 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>
4157.03	4421.00	4701.73	5000.29	5317.81

53. The Respondents BSPHCL and GRIDCO have submitted that since the Petitioner is claiming Special Allowance, it has to meet the requirement of expenses including Renovation and Modernization beyond the useful life of the generating station as per the Regulation 16 of the 2014 Tariff Regulations. In response, the Petitioner has submitted that it is not making any double claims. It has submitted that the claim for additional capitalisation has to be decided on its own merits and whether, the same is admissible as per the terms of Regulation 14 of the 2014 Tariff Regulations.

54. The matter has been considered. As per Regulation 16(2) of 2014 Tariff Regulations, the Special allowance for the generating station has been worked out and allowed as under:



(Rs. in lakh)

Unit No.	Capacity (MW)	Date of COD	Year of completion of useful life of 25 yrs.	Special Allowance				
				2014-15	2015-16	2016-17	2017-18	2018-19
1	200	1-Nov-86	2011-12	1328.51	1412.87	1502.59	1598.01	1699.48
2	200	1-Oct-87	2012-13	1328.51	1412.87	1502.59	1598.01	1699.48
3	200	1-Sep-88	2013-14	1500.00	1595.25	1696.55	1804.28	1918.85
4	500	1-Jul-96	2021-22	0.00	0.00	0.00	0.00	0.00
5	500	1-Apr-95	2019-20	0.00	0.00	0.00	0.00	0.00
<b>Year wise Total for the generating station</b>				<b>4157.03</b>	<b>4421.00</b>	<b>4701.73</b>	<b>5000.29</b>	<b>5317.81</b>

### Operation & Maintenance Expenses

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

Unit Size (MW)	(Rs. in lakh/MW)				
	2014-15	2015-16	2016-17	2017-18	2018-19
<b>200</b>	23.90	25.40	27.00	28.70	30.51
<b>500</b>	16.00	17.01	18.08	19.22	20.43

56. Proviso to the Regulation 29 (1) (a) of the 2014 Tariff Regulations states as under:

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

200/210/250 MW	<i>Additional 5th &amp; 6th units</i>	<i>0.90</i>
	<i>Additional 7th &amp; more units</i>	<i>0.85</i>
500 MW above	<i>Additional 3rd &amp; 4th units</i>	<i>0.90</i>
	<i>Additional 5th &amp; above units</i>	<i>0.85</i>

57. The generating station has 3 units of 200 MW capacity and 2 units of 500 MW capacity and all these units have achieved COD prior to the 1.4.2014. Hence, the proviso to Regulation 29(1)(a) of the 2014 Tariff Regulations is not applicable in this case. Accordingly, the normative O&M expenses claimed by the Petitioner in terms of the 2014 Tariff Regulations are allowed as under:

(Rs. in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
30340.00	32250.00	34280.00	36440.00	38736.00



## **Water Charges**

58. The first proviso to 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...”*

59. The Respondent UPPCL has submitted that the Commission in order dated 10.3.2017 in Petition No. 316/GT/2014, had allowed approx. Rs.40.24 crores for water charges, on projection-basis, and had granted liberty to the Petitioner to claim water charges, based on actual consumption at the time of true-up, in terms of the 2014 Tariff Regulations. The Petitioner has now claimed Rs.51.31 crores for water charges, which is Rs.11.07 crore higher than the amount approved by order dated 10.3.2017 in Petition No. 316/GT/2014. It has further submitted that the Petitioner, in terms of the first proviso to Regulation 29(2) of the 2014 Tariff Regulations, has to justify the expense/cost for water charges with details of water consumption. However, no such information/explanation has been provided by the Petitioner. The Respondent has also submitted that the rate claimed by the Petitioner for 2014-18 is Rs.1.14/m<sup>3</sup>, while the rate claimed for 2018-19 is Rs.2.92/m<sup>3</sup>, which is more than double the earlier rate, for which no explanation or justification has been provided by the Petitioner. For these reasons, the Respondent has submitted that the increased amount of Rs.11.07 crore claimed by the Petitioner, for Water charges ought to be disallowed or any approval must be subject to a scrutiny of actual costs and a prudence check. In response, the Petitioner has submitted that the rate of water charges has varied due to the arrear payments pertaining to 2017-18 and 2018-19 claimed by Farakka Barrage Project, Ministry of Jal Shakti vide letter dated 11.3.2020 due to revision of water charges retrospectively. The Petitioner has also submitted that the rate was increased vide letter dated 21.1.2019 of



Ministry of Water Resources, RD & GR.

60. The matter has been considered. It is observed that there is sudden increase in water charges in 2018-19 due to retrospective revision in water charges by the Farakka Barrage Project, Ministry of Jal Shakti vide its letter dated 11.3.2020. In view of the above, the actual water charges claimed by the Petitioner in terms of Regulation 29 (2) of the 2014 Tariff Regulations, is allowed separately for this generating station, 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>
777.91	753.64	783.94	783.70	2031.51

**Capital spares**

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

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

*xxxx*

*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.”*

62. 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, units/ equipment is taken under overhaul/ maintenance and inspected regularly for wear and tear. During such works, spares parts of equipment which became damaged/ unserviceable are replaced/ consumed so that the machines continue to perform at expected efficiency on sustained basis. The Petitioner has also submitted the year-wise details of the capital spares consumed by the generating station during the period 2014-19 in terms of the last proviso to Regulation 29(2) of 2014 Tariff Regulations, in Form 17, as follows:

**(Rs. in lakh)**

<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
1135.35	1272.89	138.97	449.10	63.71



63. We have examined the list of the capital spares consumed by the Petitioner. The capital spares comprise of (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 the additional O&M expenses. Accordingly, only those capital spares, which do not form part of the capital cost of the project, are being considered. 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 (one) 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. The Commission is also of the view that spares of value less than Rs.one lakh would normally form part of normal repair and maintenance expenses. Based on this, the details of the allowed capital spares considered for 2014-19 tariff period 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>
Capital spares not part of capital cost claimed	1071.32	1260.95	117.01	167.26	78.54
Value of spares Rs 1(one) lakh and below disallowed on individual basis	5.92	8.67	1.88	3.06	1.27
Net total value of capital spares considered	1065.40	1252.29	115.14	164.20	77.28

64. 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 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>
Net total value of capital spares considered	1065.40	1252.29	115.14	164.20	77.28
Less: Salvage value @ 10%	106.54	125.23	11.51	16.42	7.73
<b>Net Capital spares allowed</b>	<b>958.86</b>	<b>1127.06</b>	<b>103.62</b>	<b>147.78</b>	<b>69.55</b>

65. Based on the above, the total annualised O&M expenses allowed for the period 2014-19 in respect of 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>
<b>O&amp;M Expenses as per Regulation 29(1)</b>	30340.00	32250.00	34280.00	36440.00	38736.00
<b>Additional O&amp;M Expenses under Regulation 29(2)</b>					
Water Charges	777.91	753.64	783.94	783.70	2031.51
Capital Spares	958.86	1127.06	103.62	147.78	69.55
<b>Total O&amp;M Expenses allowed</b>	<b>32076.77</b>	<b>34130.70</b>	<b>35167.56</b>	<b>37371.48</b>	<b>40837.05</b>

### **Impact of wage revision**

66. The Petitioner has claimed an amount of Rs.17752.87 lakh (Rs.113.74 lakh during 2015-16, Rs.5162.18 lakh during 2016-17, Rs.5780.47 lakh during 2017-18 and Rs.6696.49 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 of excluding PRP/ex-gratia from actual O&M expenses of past data for finalization of O&M norms for various tariff settings, the additional PRP/ ex-gratia paid, as a result of wage revision impact, has been excluded from the wage revision impact claimed by the Petitioner in the present case.



Accordingly, the claim of the Petitioner in respect of wage revision impact stands reduced to Rs.16304.09lakh 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/ exgratia	113.74	5162.18	5485.18	5543.00	<b>16304.09</b>

67. The Petitioner vide affidavit dated 29.6.2021 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 KSTPS);*
- (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*

68. The Respondents BSPHCL and GRIDCO have submitted that the impact of wage revision due to the implementation of recommendations of 7<sup>th</sup> Pay Commission / Office Memorandum for Department of Public Enterprises (“DPE”) which has resulted into increase in O&M expenses for the Petitioner should not be given, since the Petitioner has made huge profits as per its Profit & Loss statements. It is further submitted that the O&M expenses allowed to the Petitioner are sufficient to meet its actual O&M expenses for the 2014-19 tariff period. The Respondent, TANGEDCO has submitted that since the period 2009-14, the O & M expenses allowed to this generating station on normative basis, were higher than the actual O & M expenses, for which no refund or adjustment had been given, based on the same logic for the tariff period 2014-19, the normative O&M expenses should be allowed to the Petitioner. The Respondent, UPPCL has submitted that the Petitioner has not placed any fact/ numbers to substantiate its claim that O&M norms provided in the Regulations are inadequate/insufficient after factoring in pay revision. Further, the Responded has submitted that the Petitioner has claimed the incremental impact of Pay Revision, which is Rs.177.53 crores and not ‘balance amount’ as stated in the Statement of Objects and



Reasons (SOR) to the 2014 Tariff Regulations. The Respondent, TPDDL has submitted that Clause 17 of DPEs Office Memorandum dated 3.8.2017 provides that the expenditure on account of pay revision is to be entirely borne by the Central Public Sector Enterprises (CPSE) out of their earnings and no budgetary support will be provided. As such, the Respondent beneficiaries and/or consumers cannot be burdened with the impact of pay revision.

69. In response, the Petitioner has furnished the comparative table indicating the actual O&M expenses versus normative O&M expenses recovered in tariff for Farakka STPS (all Stages combined) (2100 MW) for the 2014-19 tariff period as follows:

*(Rs. in lakh)*

S.No.		2014-15	2015-16	2016-17	2017-18	2018-19
1	Actual O&M expenditure for Farakka STPS excluding water charges & Capital spares (2100 MW)	59944	61079	66344	72077	110368
2	Total Normative O&M recovery excluding water charges & capital spares in tariff for Farakka STPS (2100 MW)	37540	39905	42416	45089	47930
3	Difference (Normative – Actual) for Farakka STPS (2100 MW)	(-) 22404	(-) 21174	(-) 23928	(-) 26988	(-) 62438

70. The Petitioner has further submitted the actual O&M expenses prorated, in terms of the MW ratio and compared to the Normative O&M expenses allowed by the Commission as follows:

*(Rs.in lakh)*

Sl. No.		2014-15	2015-16	2016-17	2017-18	2018-19
1	Actual O&M expenditure incurred for Farakka STPS Stage-I and II (1600 MW) excluding water charges (Pro rata in the ratio of installed capacity)	45671.25	46536.34	50547.99	54915.96	84089.77



Sl. No.		2014-15	2015-16	2016-17	2017-18	2018-19
2	Normative O&M recovery in tariff of Farakka STPS Stage-I and II(1600 MW) allowed vide order dated 10.3.2017 in Petition No. 316/GT/2014	30340.00	32250.00	34280.00	36440.00	38736.00
3	Difference (Normative – Actual)	(-) 15331.25	(-) 14286.34	(-) 16267.99	(-) 18475.96	(-) 45353.77

71. The Petitioner has submitted that the O&M expense norms for the period 2014-19 were decided based on the actual O&M expenses incurred for the period from 2008-09 to 2012-13. However, it has submitted that the 3<sup>rd</sup> Pay Revision Committee for CPSU's were not in existence and/ or incorporated while the 2014 Tariff Regulations were being notified/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 DPE were communicated in 2016/2017, whereas the 2014 Tariff Regulations, were notified much prior to 3.8.2017. Accordingly, the Petitioner has prayed that the impact thereof, ought to be made pass through in terms of Regulation 54 and 55 of the 2014 Tariff Regulations.

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

73. It is observed that above methodology as indicated in SOR suggests comparison of normative O&M expenses with actual O&M expenses, on 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 expenses;
- 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 generators find that their actual expenditure has gone beyond the normative O&M expenses in a particular year, they put departmental restrictions and try to bring the expenditure for the next year below the norms.

74. In consideration of above facts, the Commission finds 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 actuals O&M expenses incurred shall be made for four years i.e. 2015-19, on combined basis which is commensurate with the wage revision claim being spread over these four years.



75. The matter has been examined. The Petitioner has furnished the detailed break-up of the actual O&M expenses incurred during the period 2014-19 for combined stages i.e. Stage-I, II and III of the generating station (2100 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 period 2014-19. 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.

76. 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.

77. As stated, for like-to-like comparison of the actual O&M expenses and normative O&M expenses, the expenditure against 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 combined Stage-I II and III of the generating station (2100 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 and Stage II 1600 MW) for the period 2015-19 commensurate with the wage revision claim being spread over these four years:

*(Rs. in lakh)*

Sl. No		2015-16	2016-17	2017-18	2018-19	Total for 2015-19
1	Actual Audited O&M expenses	62027.83	67359.43	73076.24	113073.19	315536.69
2	Actual Audited O&M expenses (excluding water Charges and capital spares)	61078.95	66344.24	72077.20	110367.82	309868.22
3	Actual O&M expenditure (normalized) for Farakka STPS (Combined for stage-I, II and III) (a)	51612.90	52055.33	60910.36	64377.41	228956.00
4	Actual O&M expenditure (normalized) for Farakka STPS -I and II prorated based on capacity (b)	39324.11	39661.21	46407.89	49049.45	174442.66
5	Normative O&M Expenses for Farakka STPS -I (c)	32250.00	34280.00	36440.00	38736.00	141706.00
6	Under-recovery (c)-(b)	(-) 7074.11	(-) 5381.21	(-) 9967.89	(-) 10313.45	(-) 32736.66
7	<b>Wage revision impact allowed excluding PRP/exgratia</b>	<b>113.74</b>	<b>5162.18</b>	<b>5485.18</b>	<b>5543.00</b>	<b>16304.09</b>

78. It is observed that for the wage revision impact during the period 2015-19, the normative O&M expenses is lesser than the actual O&M expenses (normalized) and the under recovery is to the tune of Rs.32736.66 lakh. As such, in terms of methodology described above, the wage revision impact (excluding PRP / incentive) of Rs.16304.09



lakh for the generating station is allowable.

79. Accordingly, we, in exercise of the Power to relax under Regulation 54 of the 2014 Tariff Regulations, relax Regulation 29(1) of the 2014 Tariff Regulations and allow the reimbursement of the wage revision impact for this generating station, as additional O&M charges for the period 2015-19 for an amount of Rs.16304.09 lakhs. The arrear payments on account of the wage revision impact is payable by the beneficiaries in twelve equal monthly instalments from the date of issue of this order. Keeping in view the consumer interest, we, as a special case, direct that no interest shall be charged by the Petitioner on the arrear payments on the wage revision impact allowed in this order. This arrangement, in our view, will balance the interest of both, the Petitioner and the Respondents. Also, considering the fact that the impact of wage revision is being allowed in exercise of the power to relax, these expenses are not made part of the O&M expenses and consequent annual fixed charges being determined in this order under the 2014 Tariff Regulations.

#### **Impact of Goods and Service Tax (GST)**

80. The Petitioner has claimed the impact of GST as a change in law under Regulation 3(9) read with Regulation 14(3) of 2014 Tariff Regulations. The Petitioner stated that the impact of increase in rate of indirect tax from 15% to 18%, has been calculated on all taxable services and is claimed for the period 1.7.2017 to 31.3.2019. The Petitioner has claimed an amount of Rs.907.23 lakh towards impact of GST for the period 1.7.2017 to 31.3.2019.

81. The Respondents GRIDCO and TANGEDCO have submitted that through the Petitioner has claimed Rs.386.36 lakh for the 2017-18 and Rs.520.87 lakh for 2018-19 towards 'Goods and Services Tax' under Change in Law it has not submitted the documents in support of the said claim. The Respondents have also requested the





Commission to direct the Petitioner to furnish the details of such taxable services, with corresponding GST, failing which the above claim for GST may be disallowed. In response, the Petitioner has clarified that it has already furnished a detailed Auditor Certificate with respect to impact of GST on O&M expenses. The Petitioner has clarified that GST being a change in law, falls under Regulation 3 (9) read with Regulation 14 (3) of the 2014 Tariff Regulations. The Petitioner has also provided the details pertaining to the claims and has submitted that the O&M expenses comprises of employee wages and general administration and Other expenses (renamed as “Other Expenses” in the books of the company after introduction of IND AS). These inter alia include Repair and Maintenance and other Overheads of the generating station. The Petitioner has bifurcated the general administration and other expenses into material consumed, taxable services and exempt services. The Petitioner has further submitted that the amount claimed is only on account of differential in rate of tax for taxable services (i.e., under erstwhile Service Tax 15% and in GST 18%). The details pertaining to the claim of Rs.907.23 lakh, as additional O&M charges on account of GST, as change in law’ event, tabulated by the Petitioner, is as under:

Nature		2017-18 (Q2-Q4)	2018-19
		Post GST period claimable (Rs. In lakh)	GST claimable (Rs.in lakh)
Material	A	6869.55	9053.10
Services- Taxable	B	19945.84	26889.92
Services- Exempt	C	21672.28	28832.15
Total General Administration Expenses	D=A+B+C	48487.67	64775.17
Impact of 3% additional tax on Taxable Services due to GST	$E=B*0.03/1.18$	507.10	683.64
Equated Capacity of FSTPS Station (2100 MW)	F	2100	2100
Equated Capacity of FSTPS-I&II (1600 MW)	G	1600	1600
<b>Amount claimed</b>	<b>E*G/F</b>	<b>386.36</b>	<b>520.87</b>

82. We have considered the matter. While framing the 2014 Tariff Regulations, the variation in taxes and duties have been captured in the normative O&M expenses



allowed and any change in taxes is not admissible separately. Further, the 2014 Tariff Regulations does not specifically mention any consideration for allowing taxes separately. The escalation rates considered in the normative O&M expenses were finalized only after consideration of the variations during last five years, which also takes care of variation in taxes also. It may be noted that in case of reduction of taxes or duties, the Petitioner is not required to reimburse any taxes in tariff. Therefore, for any increase in taxes and duties, the Petitioner is not entitled to claim any additional expenses. As such, additional O&M expenses on account of GST are not admissible separately.

### **Operational Norms**

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

83. The claimed Normative Annual Plant Availability Factor of 83% for 2014-15 to 2016-17 and 85% for 2017-18 and 2018-19 is in accordance with the provisions of Regulation 36 (A) of the 2014 Tariff Regulations and hence the same is allowed.

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

84. The Petitioner has claimed Auxiliary Energy Consumption (AEC) of 6.47% which is in line with Regulation 36(E)(a) of the 2014 Tariff Regulations and hence, the same is allowed.

#### **(c) Station Heat Rate**

85. The Gross Station Heat Rate of 2403.13 Kcal/ kWh claimed is as per provisions of Regulation 36(C)(a) of the 2014 Tariff Regulations and hence, the same is allowed.

#### **(d) Specific Oil consumption**

86. The Secondary fuel oil consumption of 0.50 ml/kWh claimed is in line with the provisions of Regulation 36(D)(a) of the 2014 Tariff Regulations and hence the same is allowed.



## **Interest on Working Capital**

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

*“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.*

xxx

*(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.”*

### **(a) Fuel Cost and Energy Charges for Working Capital Calculations**

88. Regulation 28(2) of the 2014 Tariff Regulations provides that the computation of cost of fuel, as a part of working capital, 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. 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*

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

90. 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.”*



91. The issue of 'as received' GCV specified in Regulation 30 of the 2014 Tariff Regulations for computation of energy charges was challenged by the Petitioner and other generating 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 Petitioner. In terms of the directions of the Hon'ble High Court, the Commission vide order dated 25.1.2016 in Petition No. 283/GT/2014 (approval of tariff of Kahalgaon STPS for the 2014-19 tariff period), decided as under:

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

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

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

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



93. In Petition No. 316/GT/2014 filed by the Petitioner for determination of tariff of this generating station for the period 2014-19, the Petitioner had not furnished the GCVs of coal on 'as received' basis, for the preceding 3 months i.e. for January 2014, February 2014 and March 2014, for determination of IWC. Therefore, the Commission vide its order dated 10.3.2017 in Petition No. 316/GT/2014, had considered GCV of coal on as 'billed basis' and provisionally allowed adjustment for total moisture while allowing the cost of coal towards generation & stock and two months' energy charges in the working capital.

94. The Petitioner, in this petition, has furnished average GCV of coal as 3801.00 kCal/kg on "as received" basis for the period from October, 2016 to March, 2019. 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. As such, the Petitioner has considered a margin of 100 kCal/kg on average GCV of coal for the period from October 2016 to March 2019 for computation of working capital of the generating station. Accordingly, the Petitioner's claim of fuel components in working capital is based on following operational norms as per the 2014 Tariff Regulations and price and GCV of coal and secondary fuel oil:

	<b>Unit</b>	<b>2014-19</b>
Capacity	MW	1600
Gross Station Heat Rate	kCal/kWh	2403.13
Aux. Energy Consumption	%	6.47
Weighted average GCV of oil	kCal/lit	9613.33
Weighted Average GCV of Coal for January to March 2014	kCal/kg	3701.00
Weighted average price of oil	Rs./KL	49542.41
Weighted average price of Coal	Rs./MT	3894.07

95. Based on above parameters, the cost of fuel components in the working capital of the generating station claimed by the Petitioner is as under:



(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal towards stock (15 days)	12064.01	12064.03	12064.03	12354.73	12354.73
Cost of Coal towards Generation (30 days)	24128.03	24128.06	24128.06	24709.46	24709.46
Cost of Secondary fuel oil 2 months	480.28	481.60	480.28	491.86	491.86

96. Further, the Petitioner has claimed Energy Charge Rate (ECR) ex-bus, of 272.447 paise/kWh for the generating station based on GCV and price of fuel (coal and secondary fuel oil) as indicated above.

97. The Respondent, GRIDCO has submitted that the Petitioner has failed to furnish the information of GCV of primary fuel on as received basis and in the absence of information regarding GCV of primary fuel on as received basis, the Commission decided to compute the GCV in accordance with the formula given in tariff order dated 21.3.2017 and only the Petitioner is liable to bear the burden, if any, of its inaction to comply with the 2014 Tariff Regulations. The Respondents GRIDCO and TANGEDCO have submitted that the claim of the Petitioner of margin of about 100 kCal/Kg in GCV for calculation of working capital is beyond the scope of the 2014 Tariff Regulations and same may be disallowed. The Respondents, MSEDCL and CSPDCL have submitted that Regulation 28(2) of the 2014 Tariff Regulations, provides that the cost of fuel for cases covered under sub-clauses (a) and (b) of clause 28(1) of the 2014 Tariff Regulations, for consideration of the working capital, shall be based on the gross calorific value of the fuel as per actual for the three months preceding the first month for which tariff is to be determined. Further, even in the 2019 Tariff Regulations, the GCV of the fuel as per actual weighted average for the third quarter of preceding financial year in case of each financial year for which tariff is to be determined for computing working capital. In view of provisions of both the Regulations, the Respondents have requested to disallow consideration of any such loss in GCV for computing working



capital. The Respondents have submitted that for calculation of Energy Charge for coal based and lignite fired stations, Weighted Average GCV of coal as received, needs to be considered as per Regulation 30(6) of the 2014 Tariff Regulations. The Respondents have further submitted that there is no such provision to consider GCV of coal after adjusting GCV loss due to storage in the 2014 Tariff Regulations and requested to disallow consideration of any such loss in GCV and energy charges calculated thereof.

98. In response, the Petitioner has clarified that it has provided the monthly GCV on as received basis from October 2016 to March 2019 in the petition and average of the same, after applying margin for GCV loss due to storage, etc., has been used for IWC purpose. The Petitioner has clarified that it has claimed GCV margin in accordance with Central Electricity Authority (CEA) letter dated 17.10.2017. The Petitioner has also submitted the details of GCV on 'as received' basis for the months of January 2014 to March 2014. The Petitioner 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 period 2014-19, 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, in response to the clarification sought regarding details of GCV on as received basis for the month of January 2014 to March 2014 which was uploaded on the website of the Petitioner and shared with the beneficiaries, has submitted as under:

S.No.	Month	Wt. Avg. GCV of coal received (EM basis) (kcal/kg)	Total moisture (TM) (in %)	Equilibrated moisture (EM) (in %)	Wt. Avg. GCV of coal received (TM basis) (kcal/kg)
		(A)	(B)	(C)	(D)= (A)*(1-B%)/(1-C%)
1	January 2014	3995.4	11.66	6.26	3766
2	February 2014	4079	12.00	6.30	3831
3	March 2014	3428	12.07	6.04	3208
	Average	3834			3602

99. 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 period 2014-19. In addition to the average GCV, it has also considered a margin of 100 kCal/kg for computation of the working capital of the generating station.

100. 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 period 2014-19 is to be based on such values for months of January 2014, February 2014 and March 2014. The Petitioner has not been able to furnish these values at the time of determination of tariff for the period 2014-19 in Petition No. 316/GT/2014. In the present 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 loss of GCV of 100 kCal/kg cannot be considered, as the same is not as per provisions of the 2014 Tariff Regulations.

101. 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 per the table under paragraph 98 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."*

102. 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.

103. 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 period 2014-19 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 period 2014-19. 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.

104. The Petitioner has furnished GCV of 3602 kCal/kg which represents the GCV of coal on 'as received' basis for the preceding three months (January 2014 to March 2014). As regards the margin of 100 kcal/kg considered on the average GCV of coal for the period from October 2016 to March 2019 for the purpose computation of IWC of the generating station, the same is not considered since the provisions of the 2014 Tariff Regulations, do not provide for the same. Accordingly, the cost for fuel components in working capital has been computed considering the as received GCV of coal as 3601.87 kCal/kg. All other parameters i.e price of coal and price & GCV of oil as considered by the Petitioner (refer para 109 above) as per Form-15 and Operational norms such as Station Heat Rate, Auxiliary Energy Consumption, transit losses and Secondary Fuel consumption have been considered as per the 2014 Tariff Regulations, for calculation of the fuel components in working capital.

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



(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal towards stock (15 days) corresponding to NAPAF	12367.44	12367.44	12367.44	12665.45	12665.45
Cost of Coal towards generation (30 days) corresponding to NAPAF	24734.89	24734.89	24734.89	25330.91	25330.91
Cost of Secondary fuel oil 2 months corresponding to NAPAF	480.28	481.60	480.28	491.86	491.86

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

106. Regulation 30(6)(a) of the 2014 Tariff Regulations provides for computation and payment of energy charge for thermal generating stations. The Petitioner has claimed ECR ex-bus of 272.447 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 100 kCal/kg & GCV and price of Oil procured and burnt for the preceding three months of the period 2014-19 for the generating station. Since these claims have not been considered as stated in paragraph above, the allowable ECR, based on the operational norms as specified under the 2014 Tariff Regulations and on weighted average 'as received' GCV of 3601.67 kcal/kg is worked out as follows:

	Unit	2014-19
Gross Station Heat Rate	kCal/kWh	2403.13
Aux. Energy Consumption	%	6.47
Weighted average GCV of oil	kCal/lit	9613.33
Weighted Average GCV of Coal for January to March 2014	kCal/kg	3601.67
Weighted average price of oil	Rs./KL	49542.41
Weighted average price of Coal*	Rs./MT	3884.87
Rate of Energy Charge ex-bus	Rs./kWh	2.792

\*Landed price is after consideration of normative transit losses against the actual transit losses claimed by Petitioner.

107. Energy Charges for 2 months for the purpose of working capital has been calculated based on the following basis:

- ECR of Rs.2.792/kWh as calculated above (rounded off to three places as per Regulation 30(6) of the 2014 Tariff Regulations).



- b) Two months ex-bus energy corresponding to installed capacity of 1600 MW, normative availability of 83% for 2014-15 to 2016-17 and 85% for 2017-18 and 2018-19, along with AEC of 6.47%.

108. The Energy Charges of two months corresponding to NAPAF for the purpose of working capital has been worked out as under:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
50631.77	50770.48	50631.77	51851.81	51851.81

**(c) Maintenance Spares for Working Capital**

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

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
6450.65	6878.05	8073.03	8767.93	9609.72

110. Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provide for maintenance spares @ 20% of the operation & maintenance expenses. In terms of Regulation 29(2) of the 2014 Tariff Regulations, the cost of maintenance spares @20% of the operation & maintenance expenses (including water charges and cost of capital spares consumed), allowed are as under:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
6415.35	6826.14	7033.51	7474.30	8167.41

**(d) Receivables for working capital**

111. Receivables equivalent to two months of capacity charge and energy charge have been worked, as follows:

<i>(Rs. in lakh)</i>					
	2014-15	2015-16	2016-17	2017-18	2018-19
Energy Charges - for two months (A) corresponding to NAPAF	50631.77	50770.48	50631.77	51851.81	51851.81
Fixed Charges – for two months (B) corresponding to NAPAF	14298.21	14692.62	14884.91	15328.84	15340.24
<b>Total (C) = (A+B)</b>	<b>64929.97</b>	<b>65463.10</b>	<b>65516.68</b>	<b>67180.65</b>	<b>67192.05</b>



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

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

*(Rs. in lakh)*

2014-15	2015-16	2016-17	2017-18	2018-19
2687.77	2865.86	3363.76	3653.30	4004.05

113. 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, is allowed as under:

*(Rs. in lakh)*

2014-15	2015-16	2016-17	2017-18	2018-19
2673.06	2844.23	2930.63	3114.29	3403.09

**(f) Rate of interest on working capital**

114. 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 follows:

*(Rs. in lakh)*

		2014-15	2015-16	2016-17	2017-18	2018-19
Working capital cost of coal for 15 days for stock corresponding to NAPAF	A	12367.44	12367.44	12367.44	12665.45	12665.45
Working capital cost of coal for 30 days for generation corresponding to NAPAF	B	24734.89	24734.89	24734.89	25330.91	25330.91
Working capital cost of oil for 2 months	C	480.28	481.60	480.28	491.86	491.86
O & M expenses for 1 month	D	2673.06	2844.23	2930.63	3114.29	3403.09
Maintenance Spares for Working capital	E	6415.35	6826.14	7033.51	7474.30	8167.41
Receivables for Working capital corresponding to NAPAF	F	64929.97	65463.10	65516.68	67180.65	67192.05
<b>Total Working Capital</b>	<b>G=A+B+C+D+E+F</b>	<b>111601.00</b>	<b>112717.40</b>	<b>113063.43</b>	<b>116257.46</b>	<b>117250.77</b>
Rate of Interest	H	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Total Interest on Working capital</b>	<b>I=G*H</b>	<b>15066.14</b>	<b>15216.85</b>	<b>15263.56</b>	<b>15694.76</b>	<b>15828.85</b>



## Annual Fixed Charges

115. Based on the above, the annual fixed charges approved for the generating station for the period 2014-19 is summarised below:

	<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	7929.31	7952.32	8017.86	8057.06	4513.68
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	30717.02	30855.85	30860.48	30849.77	30861.85
O&M Expenses	32076.77	34130.70	35167.56	37371.48	40837.05
Interest on Working Capital	15066.14	15216.85	15263.56	15694.76	15828.85
Compensation Allowance	500.00	750.00	750.00	1000.00	1000.00
Special allowance	4157.03	4421.00	4701.73	5000.29	5317.81
<b>Total annual fixed charges approved</b>	<b>90446.26</b>	<b>93326.71</b>	<b>94761.20</b>	<b>97973.36</b>	<b>98359.25</b>
Total annual fixed charges approved in order dated <b>10.3.2017</b> in <b>Petition No. 316/GT/2014</b>	<b>86032.75</b>	<b>88741.62</b>	<b>91164.59</b>	<b>94218.00</b>	<b>92343.77</b>

**Note:** (1) All figures are on annualized basis. (2) 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.

116. The difference between the annual fixed charges already recovered by the Petitioner and the annual fixed charges determined by this order shall be adjusted in terms of Regulation 8 (13) of the 2014 Tariff Regulations.

117. Petition No. 698/GT/2020 is disposed of in terms of the above.

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

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

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

