

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 388/GT/2020**

**Coram:**

**Shri I.S. Jha, Member**

**Shri Arun Goyal, Member**

**Shri Pravas Kumar Singh, Member**

**Date of Order: 4<sup>th</sup> July, 2023**

**In the matter of**

Petition for truing-up of tariff of National Capital Thermal Power Station Dadri, Stage-I (840 MW) for the period 2014-19.

**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,  
Uttar Pradesh- 226 001
2. BSES Rajdhani Power Limited,  
BSES Bhawan, Nehru Place,  
New Delhi- 110019
3. BSES Yamuna Power Limited,  
Shakti Kiran Building, Karkardooma,  
Delhi- 110092
4. Tata Power Delhi Distribution Limited,  
Grid Substation, Hudson Road, Kingsway Camp,  
New Delhi- 110009
5. New Delhi Municipal Corporation,  
Palika Kendra Building,  
Opposite Jantar Mantar, Parliament Street,  
New Delhi- 110001

**...Respondents**



**Parties present:**

Ms. Ritu Apurva, Advocate, NTPC  
 Shri Buddy Ranganathan, Advocate, BRPL & BYPL  
 Shri Anupam Verma, BRPL & BYPL  
 Shri Aditya Ajay, Advocate, BRPL & BYPL  
 Shri Rahul Kinra, Advocate, BRPL & BYPL  
 Shri Aashwyn Singh, Advocate, BRPL & BYPL  
 Shri Anand Kumar Shrivastava, Advocate, TPDDL  
 Ms. Anuja Jain, Advocate, TPDDL

**ORDER**

The present petition has been filed by the Petitioner, NTPC Limited, for truing-up of tariff of National Capital Thermal Power Station (NCTPS) Dadri, Stage-I (840 MW) (in short 'the generating station') for the period 2014-19, in terms of Regulation 8(1) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (in short 'the 2014 Tariff Regulations'). The generating station, with a capacity of 840 MW comprises of four units of 210 MW each and the dates of commercial operation of the units of the generating station are as under:

	<b>COD</b>
Unit-I	1.01.1993
Unit-II	1.02.1994
Unit-III	1.04.1995
Unit-IV	1.12.1995

2. The Commission vide its order dated 11.4.2017 in Petition No. 330/GT/2014, had approved the capital cost and annual fixed charges of the generating station for the period 2014-19 as under:

***Capital Cost allowed****(Rs. in lakh)*

	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Opening Capital Cost	169042.76	169042.76	169042.76	169042.76	169042.76
Add: Additional Capital Expenditure	0.00	0.00	0.00	0.00	0.00
Closing Capital Cost	169042.76	169042.76	169042.76	169042.76	169042.76
<b>Average Capital cost</b>	<b>169042.76</b>	<b>169042.76</b>	<b>169042.76</b>	<b>169042.76</b>	<b>169042.76</b>

***Annual Fixed Charges allowed****(Rs. in lakh)*

	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	2394.74	2394.74	2394.74	2394.74	2394.74
Interest on Loan	0.00	0.00	0.00	0.00	0.00



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

3. Further, the Commission vide its order dated 5.12.2017 in Petition No. 23/RP/2017 in Petition No. 299/GT/2014, had revised the tariff of the generating station, for the period 2009-14 considering the closing capital cost of Rs.169160.69 lakh, as on 31.3.2014. However, the consequential impact of this change in capital cost, as on 31.3.2014, was not carried out in the tariff approved for the period 2014-19.

### **Present Petition**

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

*“8. Truing up*

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

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

5. The Petitioner vide affidavit dated 20.9.2022 has claimed capital cost and annual fixed charges for the period 2014-19, as under:

### ***Capital Cost claimed***

	<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>
Opening Capital Cost	169160.69	170291.28	171973.79	172375.77	172763.46
Add: Addition during the year / period	1143.20	1312.46	287.91	121.17	1729.74
Less: Decapitalization during the year /period	12.61	541.72	122.89	105.10	237.91
Less: Reversal during the year / period	0.00	0.00	0.00	0.00	0.00
Add: Discharges during the year /period	0.00	911.76	236.97	371.63	429.22
<b>Closing Capital Cost</b>	<b>170291.28</b>	<b>171973.79</b>	<b>172375.77</b>	<b>172763.46</b>	<b>174684.51</b>
Average Capital Cost	169725.99	171132.54	172174.78	172569.62	173723.99

### **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	2456.66	2655.28	2780.25	2852.00	3096.96
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	16652.91	16816.73	16878.35	16901.69	17014.71
Interest on Working Capital	10231.35	10340.32	10524.95	10916.01	11022.87
O&M Expenses	20648.60	22030.69	23036.95	25457.34	26502.07
Compensation Allowance	630.00	735.00	840.00	840.00	630.00
Special allowance	0.00	0.00	0.00	0.00	2014.79
<b>Sub-total</b>	<b>50619.52</b>	<b>52578.02</b>	<b>54060.49</b>	<b>56967.04</b>	<b>60281.41</b>
<b>Additional O&amp;M expenses</b>					
Impact of Pay Revision	0.00	47.07	2132.41	2520.37	2989.27
Impact of GST	0.00	0.00	0.00	150.07	223.29
<b>Total</b>	<b>50619.52</b>	<b>52625.09</b>	<b>56192.90</b>	<b>59637.48</b>	<b>63493.97</b>

6. The Respondent No.1, UPPCL has filed its reply vide affidavits dated 12.6.2020 and 18.2.2022. Also, the Respondents BYPL and BRPL vide affidavits dated 23.7.2021 and the Respondent TPDDL vide affidavit dated 26.6.2021 have filed their replies. The Petitioner vide affidavits dated 24.5.2021 and 29.10.2021 (UPPCL) and affidavits dated 29.10.2021 (BYPL, BRPL and TPDDL) has filed its rejoinders to the said replies. The Petitioner vide affidavits dated 30.6.2021 and 17.8.2022, has filed certain additional information after serving copies on the Respondents. The Commission vide ROP of the hearing dated 23.8.2022, had directed the Petitioner to submit certain additional information. In response, the Petitioner vide affidavit dated 14.9.2022, has submitted the additional information after serving copies on the Respondents. The Petitioner in the said affidavit, has revised the tariff filing forms. The Petition was finally heard on 22.11.2022, and the Commission, after hearing the parties, reserved its order in the matter. Taking into consideration the submissions of the parties and the documents available on record, we proceed to examine the claims of the Petitioner, on prudence check, as stated in the subsequent paragraphs.

### **Capital Cost**

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

**“9. Capital Cost:**

**(3) The Capital cost of an existing project shall include the following:**

- (a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;**
- (b) additional capitalisation and de-capitalisation for the respective year of tariff as determined in accordance with 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 its order dated 5.12.2017 in Petition No. 23/RP/2017 had allowed the closing capital cost of Rs.169160.69 lakh as on 31.3.2014. Accordingly, in terms of Regulation 9(3) of the 2014 Tariff Regulations, the closing capital cost of Rs.169160.69 lakh, has been considered as opening capital cost, as on 1.4.2014, for the purpose of tariff.

**Additional Capital Expenditure**

9. Clause (3) of Regulation 7 of the 2014 Tariff Regulations provides that the application for determination of tariff shall be based on admitted capital cost including any additional capital expenditure already admitted upto 31.3.2014 (either based on actual or projected additional capital expenditure) and estimated additional capital expenditure for the respective years of the tariff period 2014-15 to 2018-19. Regulation 14 of the 2014 Tariff Regulations, provides as under:

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

*“14(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) Undischarged 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 undischarged 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 undischarged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.;
- (vi) Any liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;
- (vii) Any additional capital expenditure which has become necessary for efficient operation of generating station other than coal/lignite based stations or transmission system as the case may be. The claim shall be substantiated with the technical justification duly supported by the documentary evidence like test results carried out by an independent agency in case of deterioration of assets, report of an independent agency in case of damage caused by natural calamities, obsolescence of technology, up-gradation of capacity for the technical reason such as increase in fault level;
- (viii) In case of hydro generating stations, any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the generating company) and due to geological reasons after adjusting the proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation;
- (ix) In case of transmission system, any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement due to obsolescence of technology, replacement of switchyard equipment due to increase of fault level, tower strengthening, communication equipment, emergency restoration system, insulators cleaning infrastructure, replacement of porcelain insulator with polymer insulators, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system; and
- (x) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receiving system arising due to non-materialisation of coal supply corresponding to full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station:

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



determination of tariff w.e.f. 1.4.2014:

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

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

(4) In case of de-capitalisation of assets of a generating company or the transmission licensee, as the case may be, the original cost of such asset as on the date of decapitalization shall be deducted from the value of gross fixed asset and corresponding loan as well as equity shall be deducted from outstanding loan and the equity respectively in the year such de-capitalisation takes place, duly taking into consideration the year in which it was capitalized.”

### Projected additional capital expenditure allowed vide order dated 11.4.2017 in Petition No. 330/GT/2014

11. No additional capital expenditure was allowed vide order dated 11.4.2017 in Petition No. 330/GT/2014. The Petitioner, in Form-9A of the petition, has submitted the actual additional capital expenditure incurred from 2014-15 to 2018-19 on accrual basis, as well as on cash basis, which includes IDC. The additional capital expenditure claimed by the Petitioner (on cash basis) for the period 2014-19 vide affidavit dated 20.9.2022 is as under:

(Rs. in lakh)								
Sl. No.	Head of Work /Equipment	Regulation	2014-15	2015-16	2016-17	2017-18	2018-19	Total
<b>A</b>	<b>Additional Capitalization</b>							
1	Land Freehold -Plant/ Office	14(3)(v), 14(3)(ii)	286.91	0.00	0.00	0.00	313.95	600.86
2	Inert Gas Fire Extinguishing System	14(3)(ii) & 14(3)(iii)	0.00	0.00	0.00	0.00	333.16	333.16
3	Effluent Monitoring Quality System (EQMS)	14 (3) (ii)	0.00	24.42	0.00	0.00	0.00	24.42
4	Continuous Emission Monitoring System (CEMS)	14 (3) (ii)	0.00	132.49	4.06	0.00	0.00	136.55
5	VFD system in both ID Fans of Unit-1	14(3)(ii) & 9(5)	0.00	0.00	283.85	0.00	0.00	283.85
6	LED Electrification	14(3)(ii)	0.00	0.00	0.00	121.17	190.91	312.07
7	Fire Protection System	14(3)(iii)	0.00	0.00	0.00	0.00	891.72	891.72
8	Control System	14(3)(iii) with 54	886.99	1186.25	0.00	0.00	0.00	2073.23
9	Decapitalization of control system	14(4)	(-) 30.70	(-) 30.70	0.00	0.00	0.00	(-) 61.39
	<b>Sub Total (A)</b>		<b>1143.20</b>	<b>1312.46</b>	<b>287.91</b>	<b>121.17</b>	<b>1729.74</b>	<b>4594.48</b>
<b>B</b>	<b>Decapitalization</b>							
1	Decapitalization of Spares- Part of capital cost	14(4)	(-)12.61	(-) 541.72	(-) 122.89	(-) 105.10	(-)122.41	(-) 904.73
2	Decapitalization against LED Electrification	14(4)	0.00	0.00	0.00	0.00	(-)115.50	(-) 115.50
	<b>Sub Total (B)</b>		<b>(-)12.61</b>	<b>(-) 541.72</b>	<b>(-) 122.89</b>	<b>(-) 105.10</b>	<b>(-)237.91</b>	<b>(-) 1020.23</b>





Sl. No.	Head of Work /Equipment	Regulation	2014-15	2015-16	2016-17	2017-18	2018-19	Total
<b>C</b>	<b>Liability Discharged</b>							
	Add. Discharge of Liabilities pertaining to allowed works for prior period		0.00	911.76	236.97	371.63	429.22	1949.58
	<b>Sub Total (C)</b>		<b>0.00</b>	<b>911.76</b>	<b>236.97</b>	<b>371.63</b>	<b>429.22</b>	<b>1949.58</b>
<b>D</b>	<b>Total Additional capital expenditure Claimed (D=A+B+C)</b>		<b>1130.59</b>	<b>1682.50</b>	<b>401.98</b>	<b>387.69</b>	<b>1921.05</b>	<b>5523.82</b>

**(a) Land- Freehold (Plant/ Office)**

12. The Petitioner has claimed actual capital expenditure of Rs.286.91 lakh in 2014-15 and Rs.313.95 lakh in 2018-19 for Land freehold (Plant/ Office) under Regulation 14(3)(v) and 14(3)(ii) of the 2014 Tariff Regulations. In justification for the same, the Petitioner has submitted that the interest portion paid/ payable towards enhanced compensation for land, is as per various court orders, which was earlier not indicated in cost of land, as accounting standards, did not allow for the same. It has however submitted that after receipt of opinion of the Expert Advisory Committee of Institute of Chartered Accountants of India, the interest paid/payable has been capitalized now as cost of land. Accordingly, the value of Rs.1530.82 lakh has been capitalized during the year 2014-15, on accrual basis, for interest liability, towards pending land compensation cases in various courts. It has also stated that out of this amount, the interest liability paid for settled cases of Rs.286.91 lakh has been capitalized on cash basis and the balance is payable at a later date as per Court orders. The Petitioner has further submitted that the current capitalization corresponds to the activity of land acquisition already admitted and has requested that the same may be allowed.

13. The matter has been considered. It is observed that the Petitioner has claimed additional capital expenditure towards interest liability (which had been paid for settled cases) amounting to Rs.286.91 lakh (net of liabilities of Rs.1243.91 lakh) in 2014-15 and Rs.313.95 lakh (net of liabilities of Rs.39.66 lakh) in 2018-19 as per Court orders, on cash basis. The corresponding claim of the Petitioner for the years 2015-16 and





2016-17 is 'nil' (after removal of liabilities of Rs.65.47 lakh in 2015-16 and Rs.51.93 lakh in 2016-17). It is noticed that the Petitioner has furnished the Court orders to substantiate its claim for payment of the aforesaid interest liability, in land compensation cases. The Petitioner vide affidavit dated 14.9.2022 has also submitted the Court order with regard to land compensation. In view of the above, we allow the additional capital expenditure of Rs.286.91 lakh in 2014-15 and Rs.313.95 lakh in 2018-19 claimed on cash basis.

***(b) Inert Gas Fire Extinguishing System***

14. The Petitioner has claimed actual additional capital expenditure of Rs.333.16 lakh (net of liabilities of Rs.39.66 lakh), on cash basis, in 2018-19, for Inert Gas Fire extinguishing system under Regulation 14(3)(ii) and 14(3)(iii) of 2014 Tariff Regulations. In justification for the same, the Petitioner has submitted that the Commission in its order dated 11.4.2017 in Petition No. 330/GT/2014 had granted liberty to the Petitioner to claim the capitalization for this work, at the time of truing up of tariff, and the same to be decided, based on clarification sought from CEA.

15. The matter has been considered. It is noticed that in order dated 2.9.2021 in Petition No. 300/GT/2020 [tariff of FGUTPS, Stage-II (420 MW) for the period 2014-19], filed by the Petitioner, the Commission had allowed the additional capitalization of this asset, on the ground that the same is required as statutory compliance under National Fire Protection Association Standard on Clean Agent Fire Extinguishing system (NFPA-2001). In this background, we allow the actual additional capital expenditure of Rs.333.16 lakh in 2018-19 claimed for Inert Gas Fire extinguishing system under Regulation 14(3)(ii) of the 2014 Tariff Regulations.

***(c) Effluent Quality Monitoring System (EQMS)***

16. The Petitioner has claimed actual additional capital expenditure of Rs.24.42 lakh



(net of liabilities of Rs.8.77 lakh), on cash basis, in 2015-16 towards EQMS under Regulation 14(3)(ii) of 2014 Tariff Regulations. In justification for the same, the Petitioner has submitted that monitoring of effluent quality is a statutory requirement to comply with the directions dated 5.2.2014. The directions were issued by the Central Pollution Control Board (CPCB) under Section 18(1)(b) of the Water (Prevention & Control of Pollution) Act, 1974. It has also submitted that EQMS is for monitoring of the various effluent parameters, such as pH level, Total Suspended Solids (TSS), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD) before discharging the effluent water out of the plant premises to avoid environment and water pollution.

17. The matter has been considered. Since the additional capital expenditure incurred by the Petitioner is in compliance to the provisions of the Environment (Protection) Amendment Rules, 2015 i.e. MoEFCC Notification dated 7.12.2015, the claim of the Petitioner is allowed under Regulation 14(3)(ii) of the 2014 Tariff Regulations.

***(d) Continuous Emission Monitoring System (CEMS)***

18. The Petitioner has claimed actual additional capital expenditure of Rs.132.49 lakh (net of liabilities of Rs.6.91 lakh) in 2015-16 and Rs.4.06 lakh (net of liabilities of Rs.0.22 lakh) in 2016-17 towards CEMS, on cash basis, under Regulation 14(3)(ii) of 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 Central Pollution Control Board (CPCB) under Section 18(1)(b) of Air (Prevention & Control of Pollution) Act, 1981. It has further submitted that CEMS is for continuous online monitoring of emission parameters, such as SO<sub>x</sub>, NO<sub>x</sub>, CO, CO<sub>2</sub>, flue gas exit temp etc. Since the additional capital expenditure incurred is for compliance to the orders/directions of the CPCB dated 5.2.2014, the claim of the



Petitioner is **allowed** under Regulation 14(3)(ii) of the 2014 Tariff Regulations.

**(e) VFD system in both ID Fans of Unit-1**

19. The Petitioner has claimed actual additional capital expenditure of Rs.283.85 lakh (net of liabilities of Rs.1.65 lakh), on cash basis, in 2016-17, towards VFD system in both ID Fans for Unit-1, under Regulation 14(3)(ii) read with Regulation 9(5) of the 2014 Tariff Regulations. The Petitioner has clarified that the generating station is a 'Designated Consumer' in terms of the Energy Conservation (*Energy Consumption Norms and Standards for Designated Consumers, Form, Time within which, and Manner of Preparation and Implementation of Scheme, Procedure for Issue of Energy Savings Certificate and Value of Per Metric Ton of Oil Equivalent of Energy Consumed*) Rules, 2012, notified on 30.3.2012, by the Ministry of Power, GoI. It has also submitted that as per said Rules, as amended from time to time, each designated consumer shall have to comply with the energy consumption norms & standards, as provided for each target year from 2014-15 onwards, which is revised based on the targets achieved in the past years. The Petitioner has while pointing out that VFD was commissioned on 3.2.2017, has stated that the capitalization aims in achieving those targets for the generating station. It has stated that during the period from 3.2.2017 to 31.3.2018, an energy savings of approx. 0.545 MUs, has been achieved on account of VFD system. The Petitioner has added that the benefits would continue to accrue in the subsequent years and the sharing of benefits with the beneficiaries shall be done as per Regulation 8(6) of the 2014 Tariff Regulations.

20. The matter has been considered. The notification submitted by the Petitioner does not fall under Change in law event. Further, with regard to claim under Regulation 9(5) of the 2014 Tariff Regulations, it is to mention that the Petitioner, in this petition, has not furnished the quantifiable details of improvement in the efficiency along with other



performance parameters by replacement of old equipment with the energy efficient new ones. It has also not submitted the analysis of the energy saved on this count and the benefits accrued and passed on to the beneficiaries. Accordingly, the additional capital expenditure as claimed by the Petitioner is **not allowed**.

**(f) LED Electrification**

21. The Petitioner has claimed actual additional capital expenditure of Rs.121.17 lakh in 2017-18 and Rs.190.91 lakh in 2018-19, on cash basis and on accrual basis, for LED Electrification under Regulation 14(3)(ii) of 2014 Tariff Regulations. The Petitioner has submitted that Hon'ble Prime Minister of India on 5.1.2015 launched National LED Programme with an objective to reduce energy consumption by using energy efficient lighting. In line with the objective, Unnat Jyoti by Affordable LEDs for All (UJALA) and Street Lighting National Programme is being implemented by EESL. In this regard, through MOP, GoI vide letter dated 2.8.2017, the Petitioner was mandated to replace all old bulbs with LED bulbs in all the buildings including compound/ street lighting occupied by the Petitioner. Any directions of GoI is required to implemented and has the force of Law. In order to comply with the directions of GoI contained in the letter dated 2.8.2017, the Petitioner took the work of replacing the old in-efficient lights with efficient LED lighting in the premises of the station compound/ building owned and operated by the Petitioner. Further, the capitalization pertains to LED electrification in Plant area only and the Petitioner has requested the same be allowed under change in law.

22. It is noticed that the additional capital expenditure incurred towards LED electrification is in terms of the MOP, GOI letter dated 2.8.2017, which has recommended 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. The additional capital expenditure claimed by the Petitioner under Regulation 14(3)(ii) of the 2014 Tariff Regulations, was dis-allowed by order dated 17.3.2023 in Petition No. 698/GT/2020 and by order dated 22.2.2023 in Petition No. 292/GT/2020. In line with the said decisions, the claim of the Petitioner is **not allowed**.

**(g) Fire Protection System**

23. The Petitioner has claimed actual additional capital expenditure of Rs.891.72 lakh (net of liabilities of Rs.43.54 lakh and inclusive of IDC of Rs.183.69 lakh), on cash basis, in 2018-19 towards Fire Protection System under Regulation 14(1)(iii) of 2014 Tariff Regulations. In justification for the same, the Petitioner has submitted that the existing fire water pipelines, some of which were laid underground, were facing frequent leakages due to corrosion of pipes. It has also stated that frequent leakage in the pipeline is causing the Fire Protection system unavailable for the substantial duration which increases the risk of fire hazard in the powerplant. Accordingly, the Petitioner has submitted that these pipelines are being replaced for reliability of the Fire Protection system and thus, ensuring safety of men & machinery.

24. In our view, the claim of the Petitioner for expenditure towards the replacement of existing fire water pipelines, is in the nature of O&M expenses. Accordingly, the additional capital expenditure claimed by the Petitioner is not allowed.

**(h) Control System**

25. The Petitioner has claimed actual additional capital expenditure of Rs.886.99 lakh (net of liabilities of Rs.3.38 lakh) in 2014-15 and Rs.1186.25 lakh (net of liabilities of Rs.235.38 lakh and inclusive of IDC of Rs.71.85 lakh) in 2015-16 towards Control



Systems, under Regulation 14(3)(iii) read with Regulation 54 of the 2014 Tariff Regulations. In justification for the same, the Petitioner has submitted that due to aging and obsolescence, the existing Control system was highly unreliable and failure prone. It has also submitted that the spare support from OEM or other third party was not available and the obsolescence of the said system has led to non-reliable functioning of control loops, resulting in unsafe operation of the plant. The Petitioner has stated that the said items are C&I items and due to rapid technological upgradation, their obsolescence with time is very common. It has also submitted that in the absence of support from OEM and obsolescence of technology, these systems were vulnerable to faults and there were frequent break downs and operating with these obsolete items was a threat to men and machine. Under the said circumstances, the Petitioner has stated that it was necessary to undertake the replacement of the existing Control system with a new upgraded Control system which encompass all the functionalities of the existing system. The Petitioner has added that the upgradation of the system has helped in better connectivity with other systems, better monitoring of plant, enhanced reliability and safe operation of the units.

26- The matter has been considered. The Petitioner has claimed the expenditure under Regulation 14(3)(iii) read with Regulation 54 of the 2014 Tariff Regulations. In this regard it is to mention that the expenditure under Regulation 14(3)(iii) of the 2014 Tariff Regulations is allowed 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. The Petitioner has not submitted above required documents. Accordingly, the claim is not considered under Regulation 14(3)(iii) of the 2014 Tariff Regulations. Further, it is observed that the generating station of the Petitioner is entitled for Compensation allowance and the Petitioner has claimed the same, during the period 2014-19. As such, as per second



proviso of Regulation 14(3) of the 2014 Tariff Regulations, the expenditure claimed needs to be met out of compensation allowance. In view of the above, the additional capital expenditure claimed by the Petitioner is **not allowed**.

**Decapitalization**

**(a) Decapitalisation against LED electrification and Control System**

27. The Petitioner has claimed decapitalization of Rs.115.50 lakh in 2018-19 against LED electrification system and Rs.30.70 lakh in 2014-15 and 2015-16 each, against Control system under Regulation 14(4) of the 2014 Tariff Regulations. In justification for the same, the Petitioner has submitted that the items were part of capital cost and have become unserviceable. Since the additional capital expenditure for the said works have not been allowed, the corresponding decapitalization for these works are also not allowed.

**(b) Decapitalisation of spares: Part of Capital Cost**

28. The Petitioner has claimed decapitalization of spares (part of capital cost) of Rs.12.61 lakh in 2014-15, Rs.541.72 lakh in 2015-16, Rs.122.89 lakh in 2016-17, Rs.105.10 lakh in 2017-18 and Rs.122.41 lakh in 2018-19, under Regulation 14(4) of the 2014 Tariff Regulations. In justification for the same, the Petitioner has submitted that these spares were part of capital cost and became unserviceable. Accordingly, the same were decapitalized. Regulation 14(4) of the 2014 Tariff Regulations provides that the original value of de-capitalized assets shall be deducted from the capital cost allowed to the generating station. Accordingly, the de-capitalization of these assets as claimed by the Petitioner is allowed.

**Un-discharged liabilities & Discharge of liabilities**

29. The Petitioner has claimed the discharge of liabilities as follows:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
0.00	911.76	236.97	371.63	429.22





30. Out of discharge of liabilities claimed by the Petitioner, only discharges amounting to Rs.908.39 lakh, Rs.12.22 lakh, Rs.343.23 lakh and Rs.429.22 lakh in 2015-16, 2016-17, 2017-18 and 2018-19 respectively are corresponding to assets/works allowed for the purpose of tariff. Further, reversals amounting to Rs.386.38 lakh in 2015-16 and Rs.4.37 lakh in 2017-18 are corresponding to allowed assets/works. The flow of un-discharged liabilities corresponding to admitted capital cost is as under:

		<i>(Rs. in lakh)</i>				
		2014-15	2015-16	2016-17	2017-18	2018-19
<b>1)</b>	<b>Out of liabilities deducted as on 1.4.2009</b>					
A	Opening liabilities	1260.50	1260.50	0.00	0.00	0.00
B	Addition during the year	0.00	0.00	0.00	0.00	0.00
C	Discharges during the year	0.00	908.39	0.00	0.00	0.00
D	Reversal during the year	0.00	352.11	0.00	0.00	0.00
E	Closing liability (A+B-C-D)	1260.50	0.00	0.00	0.00	0.00
<b>2)</b>	<b>Other liabilities</b>					
F	Opening liabilities	0.00	1243.91	1290.80	1330.73	983.13
G	Addition during the year	1243.91	81.15	52.15	0.00	70.21
H	Discharges during the year	0.00	0.00	12.22	343.23	429.22
I	Reversal during the year	0.00	34.26	0.00	4.37	0.00
J	Closing liability (F+G-H-I)	1243.91	1290.80	1330.73	983.13	624.13
<b>3)</b>	<b>Total closing liabilities (E+J)</b>	<b>2504.41</b>	<b>1290.80</b>	<b>1330.73</b>	<b>983.13</b>	<b>624.13</b>

### Exclusions

31. The summary of exclusions from books of accounts claimed, on accrual basis, is discussed below:

		<i>(Rs in lakh)</i>				
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19	
Disallowed Items	378.86	221.99	3.59	3.60	3.58	
Items not claimed	1170.35	50.66	18.93	15.67	0.00	
Regrouping of Assets	0.00	0.00	0.00	0.00	0.00	
Capitalization of Spares	1237.52	1492.91	2935.81	255.60	1133.07	
Reversal of Liability	(-) 0.38	(-) 387.46	(-) 0.89	(-) 6.04	0.00	
Decapitalization of MBOAs: Part of Capital Cost	(-) 24.09	(-) 99.65	(-) 9.83	(-) 75.45	(-) 195.19	
Decapitalization of Capital Spares- Not part of Capital Cost	(-) 400.88	(-) 1.64	(-) 94.25	(-) 1098.47	(-) 621.61	
Decapitalization of MBOAs: Not Part of Capital Cost	(-) 49.08	(-) 93.13	(-) 7.79	(-) 5.68	(-) 4.68	

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Capitalization of MBOA	0.00	0.00	0.00	0.00	74.77
<b>Total Exclusions Claimed</b>	<b>2312.31</b>	<b>1183.68</b>	<b>2845.57</b>	<b>(-)910.76</b>	<b>389.95</b>

**(a) Disallowed Items**

32. The Petitioner has claimed exclusion of schemes amounting to Rs.378.86 lakh in 2014-15, Rs.221.99 lakh in 2015-16, Rs.3.59 lakh in 2016-17, Rs.3.60 lakh in 2017-18 and Rs.3.58 lakh in 2018-19, which includes works/ items such as Boiler Tube Leakage Detection System, CC TV System, Renovation of SWAS Analyzers, Decap of the above asset, Hydrogen Purity Analyser, R&M of Gen Excitation System, Lightning arrestors for 500 MVA ICTs, Renovation of ESP field and rapper control, R&M of generator & ICT Protection relay, Renovation of Kruggs make isolators, Township Metering. In justification for the same, the Petitioner has submitted that these works form part of the R&M scheme which was disallowed by order dated 6.7.2012 in Petition No.255/2009, and Order dated 21.1.2011 in Petition No 120/2009 and hence, do not form part of the capital cost of the generating station. It is evident from the submissions of the Petitioner that these items have not been allowed in the tariff and do not form part of the capital cost of the project. Accordingly, exclusions claimed are allowed.

**(b) Items not claimed**

33. The Petitioner has claimed exclusion of Rs.1170.35 lakh in 2014-15, Rs.50.66 lakh in 2015-16, Rs.18.93 lakh in 2016-17 and Rs.15.67 lakh in 2017-18, under head "Items not claimed" which includes items/ works like land freehold -plant/office (Muradnagar), Hydraulic excavator for CHP, AHU assembly for main plant A/C system, Construction of covered shed for gas store, Renovation of Kruggs make isolators, Construction of electrical test lab and electric hoist 7.5 MT. In justification for same, the Petitioner has submitted that the expenditures are not allowed under the 2014 Tariff Regulations. In view of this, the Petitioner's claim under this head is allowed.



**(c) Regrouping of Assets**

34. The Petitioner has re-grouped some of the assets in books of accounts in 2015-16 and 2018-19 having 'nil' impact, on net basis. Accordingly, the Petitioner's claim for exclusion of 'nil' value is allowed.

**(d) Capitalisation of Spares**

35. The Petitioner has claimed exclusion of Rs.1237.52 lakh in 2014-15, Rs.1492.91 lakh in 2015-16, Rs.2935.81 lakh in 2016-17, Rs.255.60 lakh in 2017-18 and Rs.1133.07 lakh in 2018-19 pertaining to capitalization of spares. In justification, the Petitioner has submitted that as capital spares capitalized after the cut-off date are not allowed in terms of the 2014 Tariff Regulations, the same has been kept under exclusions. Since the capitalization 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 has excluded the said amount. Accordingly, the exclusion claimed by the Petitioner under this head is in order and is allowed.

**(e) Reversal of liabilities**

36. The Petitioner has claimed reversal of liabilities of Rs.0.38 lakh in 2014-15, Rs.387.46 lakh in 2015-16, Rs.0.89 lakh in 2016-17 and Rs.6.04 lakh in 2017-18. The Petitioner has submitted that as tariff allowed is on cash basis, the reversal of liabilities has been kept under exclusion. We agree with the submissions of the Petitioner that reversal of liabilities shall not impact the capital cost considered for the purpose of tariff, determined on cash basis. Accordingly, the exclusion claimed by the Petitioner is in order and allowed.

**(f) Decapitalisation of MBOAs (forming part of capital cost)**

37. The Petitioner has claimed exclusion of de-capitalization of MBOAs forming part

of the admitted capital cost of the generating station for Rs.24.09 lakh in 2014-15, Rs.99.65 lakh in 2015-16, Rs.9.83 lakh in 2016-17, Rs.75.45 lakh in 2017-18 and Rs.195.19 lakh in 2018-19. In justification for the same, the Petitioner has submitted that, as the capitalization of expenditure against these items are not allowed, their de-capitalization has been claimed as exclusions and hence, decapitalized amount pertains to MBOA which form part of the capital cost of the generating station for the purpose of the tariff. As such, in terms of Regulation 14(4) of the 2014 Tariff Regulations, the decapitalized amount needs to be deducted for arriving at the capital cost for the purpose of tariff. The exclusion claimed by the Petitioner on account of decapitalization of MBOA has to be treated in accordance with Regulation 14(4) of the 2014 Tariff Regulations. Accordingly, the exclusions claimed is not allowed.

***(g) Decapitalisation of MBOAs (not part of capital cost)***

38. The Petitioner has claimed exclusion of de-capitalization of MBOAs of Rs.49.08 lakh in 2014-15, Rs.93.13 lakh in 2015-16, Rs.7.79 lakh in 2016-17, Rs.5.68 lakh in 2017-18 and Rs.4.68 lakh in 2018-19, on the ground that the same do not form part of the allowed capital cost. On scrutiny of Form-9Bi, it is observed that the Petitioner in respect of assets capitalized before 2014-15 has mentioned the order in which particular asset was disallowed and for assets capitalized after 2014-15, the Petitioner has submitted that the capitalization of the MBOAs beyond the cut-off date was not admissible as per the 2014 Tariff Regulations and accordingly the de-capitalization of these items has been claimed under exclusion. As the assets claimed under exclusion do not form part of capital cost, the exclusion for the same is allowed for the purpose of tariff.

***(h) Capitalisation of MBOAs***

39. The Petitioner has claimed exclusion of Rs.74.77 lakh in 2018-19 which includes items like office equipment's and Plant & Machinery. In justification of the same, the



Petitioner has submitted that as capitalization of MBOAs procured after the cut-off date of the generating station is not allowed for the purpose of tariff, the Petitioner has excluded the said amount. The exclusion claimed by the Petitioner under this head is in order and is allowed.

**(i) Decapitalisation of Capital Spares-Not part of Capital Cost**

40. The Petitioner has excluded de-capitalized spares amounting to Rs.400.88 lakh in 2014-15 and Rs.1.64 lakh in 2015-16, Rs.94.25 lakh in 2016-17, Rs.1098.47 lakh in 2017-18 and Rs.621.61 lakh in 2018-19 for the purpose of tariff. In justification of the same, the Petitioner has submitted that the items do not pertain to the capital cost allowed by the Commission and accordingly, the capitalization of spares has been claimed as exclusion. The Petitioner has certified that these spares were not allowed by order dated 20.5.2015 in Petition No. 260/GT/2013, order dated 24.3.2017 in Petition No. 299/GT/2014, order dated 21.1.2011 in Petition No.120/2009 and order dated 12.5.2005 in Petition No. 180/2004. Therefore, it appears that the decapitalized spares claimed under exclusion (as not part of capital cost), form part of the spares disallowed vide the above-mentioned orders. Since the capitalization of spares were not allowed, they do not form part of the capital cost for the purpose of tariff. Hence, the exclusion of de-capitalization of the spares as claimed by the Petitioner, is in order and allowed.

41. Accordingly, the summary of exclusions allowed/ not allowed for the period 2014-19 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>
Exclusions claimed (A)	2312.31	1183.68	2845.57	(-) 910.76	389.95
Exclusions allowed (B)	2336.40	1283.33	2855.40	(-) 835.31	585.14
Exclusions not Allowed (A-B)	(-) 24.09	(-) 99.65	(-) 9.83	(-) 75.45	(-) 195.19

42. Based on the above discussions, the additional capital expenditure allowed for the generating station, is summarized below:



(Rs. in lakh)

S. No.	Head of Work /Equipment	2014-15	2015-16	2016-17	2017-18	2018-19	Total
<b>A</b>	<b>Additional Capitalization</b>						
1	Land Freehold -Plant/Office	286.91	0.00	0.00	0.00	313.95	600.86
2	Inert Gas Fire Extinguishing System	0.00	0.00	0.00	0.00	333.16	333.16
3	Effluent Quality Monitoring System (EQMS)	0.00	24.42	0.00	0.00	0.00	24.42
4	Continuous Emission Monitoring System (CEMS)	0.00	132.49	4.06	0.00	0.00	136.55
5	VFD system in both ID Fans of Unit-1	0.00	0.00	0.00	0.00	0.00	0.00
6	LED Electrification	0.00	0.00	0.00	0.00	0.00	0.00
7	Fire Protection System	0.00	0.00	0.00	0.00	0.00	0.00
8	Control System	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Sub Total (A)</b>	<b>286.91</b>	<b>156.91</b>	<b>4.06</b>	<b>0.00</b>	<b>647.12</b>	<b>1094.99</b>
<b>B</b>	<b>Decapitalization</b>						
1	Decapitalization of Spares-Part of capital cost	(-) 12.61	(-) 541.72	(-) 122.89	(-) 105.10	(-) 122.41	(-) 904.73
2	Decapitalization against LED Electrification	0.00	0.00	0.00	0.00	0.00	0.00
3	Decapitalization of control system	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Sub Total (B)</b>	<b>(-) 12.61</b>	<b>(-) 541.72</b>	<b>(-) 122.89</b>	<b>(-) 105.10</b>	<b>(-) 122.41</b>	<b>(-) 904.73</b>
<b>C</b>	<b>Liability Discharge</b>						
	Add. Discharge of Liabilities pertaining to allowed works for prior period	0.00	908.39	12.22	343.23	429.22	1693.05
	<b>Sub Total (C)</b>	<b>0.00</b>	<b>908.39</b>	<b>12.22</b>	<b>343.23</b>	<b>429.22</b>	<b>1693.05</b>
<b>D</b>	<b>Exclusion not allowed</b>	<b>(-) 24.09</b>	<b>(-) 99.65</b>	<b>(-) 9.83</b>	<b>(-) 75.45</b>	<b>(-) 195.19</b>	<b>(-) 404.20</b>
<b>E</b>	<b>Total Additional capital expenditure allowed (E=A+B+C+D)</b>	<b>250.21</b>	<b>423.93</b>	<b>(-) 116.44</b>	<b>162.67</b>	<b>758.73</b>	<b>1479.11</b>

### Capital Cost allowed for the period 2014-19

43. Accordingly, the capital cost approved for the generating station 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	169160.69	169410.90	169834.84	169718.40	169881.07
Add: Net additional capital expenditure allowed	250.21	423.93	(-) 116.44	162.67	758.73
<b>Closing Capital Cost</b>	<b>169410.90</b>	<b>169834.84</b>	<b>169718.40</b>	<b>169881.07</b>	<b>170639.80</b>
Average Capital Cost	169285.80	169622.87	169776.62	169799.73	170260.44

### Debt-Equity Ratio

44. 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 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.”*

45. The gross normative loan and equity amounting to Rs.84414.12 lakh and Rs.84746.58 lakh, respectively as on 31.3.2014, as considered in Commission's order dated 5.12.2017 in Petition No. 23/RP/2017 has been retained as on 1.4.2014, for the purpose of tariff. Further, the additional capital expenditure admitted as above has been allocated in the debt-equity ratio of 70:30. Further, for the de-capitalization of assets, the debt-equity ratio, as originally considered while admitting these assets, in the respective tariff petitions/orders, has been considered. Accordingly, the debt-equity ratio in respect of the generating station, as on 1.4.2014 and 31.3.2019 is as under:



(Rs. in lakh)

	Capital cost upto 1.4.2014		Additional capitalization during 2014-19		Decapitalization during 2014-19				Capital cost as on 31.3.2019	
	Amount	(%)	Amount	(%)	Amount	(%)	Amount	(%)	Amount	(%)
Debt	84414.12	49.90%	1951.63	70.00%	0.12	70.00%	654.38	50.00%	85711.24	50.23%
Equity	84746.58	50.10%	836.41	30.00%	0.05	30.00%	654.38	50.00%	84928.56	49.77%
<b>Total</b>	<b>169160.69</b>	<b>100.00%</b>	<b>2788.04</b>	<b>100.00%</b>	<b>0.17</b>	<b>100.00%</b>	<b>1308.76</b>	<b>100.00%</b>	<b>170639.80</b>	<b>100.00%</b>

## Return on Equity

46. 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.”*

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

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

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

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

*Where “t” is the effective tax rate in accordance with Clause (1) of this regulation and*



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

(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 trueing 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."

48. 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 ROE of 15.50% with MAT rate of 20.961% in 2014-15, 21.342% 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 as 19.610% for 2014-15, 19.705% for 2015-18 and 19.758% for 2018-19. Accordingly, ROE has been worked out and allowed as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Normative Equity-Opening (A)	84746.58	84814.30	84813.21	84751.73	84764.42
Addition of Equity due to additional capital expenditure (B)	67.73	(-) 1.09	(-) 61.48	12.69	164.13
Normative Equity-Closing (C) = (A) + (B)	84814.30	84813.21	84751.73	84764.42	84928.56
Average Normative Equity (D) = (A+C)/2	84780.44	84813.75	84782.47	84758.08	84846.49
Return on Equity (Base Rate) (E)	15.500%	15.500%	15.500%	15.500%	15.500%
Effective Tax Rate for the year (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 (H) = (D)*(G)</b>	<b>16625.44</b>	<b>16712.55</b>	<b>16706.39</b>	<b>16701.58</b>	<b>16763.97</b>

### **Interest on Loan**

49. 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."*

50. Interest on loan has been out as follows:

- (a) Gross normative loan amounting to Rs.84412.12 lakh, as on 31.3.2014, as considered in order dated 5.12.2017 in Petition No. 23/RP/2017 has been retained as on 1.4.2014.
- (b) Cumulative repayment amounting to Rs.84412.12 lakh, as on 31.3.2014, as considered in order dated 5.12.2017 in Petition No. 23/RP/2017 has been retained as on 1.4.2014.
- (c) Accordingly, the net normative opening loan as on 1.4.2014 is 'nil'.
- (d) Addition to normative loan on account of additional capital expenditure approved above has been considered.



- (e) Depreciation allowed has been considered as repayment of normative loan during the respective year of the period 2014-19. Further, repayments have been adjusted for de-capitalization of assets considered for the purpose of tariff. Also, repayments have been adjusted for discharges corresponding to un-discharged liabilities deducted as on 1.4.2009; and
- (f) The Petitioner has claimed weighted average rate of interest (WAROI) of 9.3971% in 2014-15, 9.1427% in 2015-16, 8.9575% in 2016-17, 8.6932% in 2017-19. 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 for the generating station, the same has been considered for the purpose of tariff.

51. Necessary calculations for interest on loan is as under:

	<b>(Rs. in lakh)</b>				
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Gross opening loan (A)	84414.12	84596.60	85021.63	84966.66	85116.65
Cumulative repayment of loan upto previous year (B)	84414.12	84596.60	85021.63	84966.66	85116.65
Net Loan Opening (C) = (A) - (B)	0.00	0.00	0.00	0.00	0.00
Addition due to additional capital expenditure (D)	182.49	425.02	(-) 54.96	149.98	594.60
Repayment of loan during the period (E)	200.83	56.27	11.40	240.26	753.43
Repayment adjustment on account of de-capitalization (F)	18.35	320.68	66.36	90.28	158.84
Add: Repayment adjustment on a/c of discharges / reversals corresponding to un-discharged liabilities deducted as on 01.04.2009 (G)	0.00	689.44	0.00	0.00	0.00
Net Repayment of during the year (H) = (E) - (F) + (G)	182.49	425.02	(-) 54.96	149.98	594.60
Net Loan Closing (I) =(C) +(D) -(H)	0.00	0.00	0.00	0.00	0.00
Average Loan (J) = (C+I)/2	0.00	0.00	0.00	0.00	0.00
Weighted Average Rate of Interest of loan (K)	9.3971%	9.1427%	8.9575%	8.6932%	8.6932%
<b>Interest on Loan (L) = (K)*(J)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

## Depreciation

52. 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) alongwith justification and proposed life extension.*

*The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.*

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

53. Cumulative depreciation amounting to Rs.131045.56 lakh, as on 31.3.2014, as considered in order dated 5.12.2017 in Petition No. 23/RP/2017 has been retained for the purpose of tariff. The value of freehold land included in the average capital cost has been adjusted while calculating depreciable value for the purpose of tariff. Since as on 1.4.2014, the elapsed life of the generating station is 19.69 years, from the effective station COD





(i.e. 25.7.1994) is more than 12 years, depreciation has been calculated by spreading the remaining depreciable value over the remaining useful life of the generating station.

Accordingly, depreciation 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>
Average Capital Cost (A)	169285.80	169622.87	169776.62	169799.73	170260.44
Value of freehold land included in average capital cost (B)	4756.71	5354.35	5808.55	5980.05	6523.13
Aggregated Depreciable Value (D)= (A-B) *90%	148076.18	147841.66	147571.26	147437.72	147363.57
Remaining aggregate depreciable value at the beginning of the year (D) = (C) -Cumulative Depreciation (shown at J) at the end of the previous year]	17030.62	14432.92	12315.88	9884.63	7560.44
No. of completed years at the beginning of the year (E)	17.88	18.88	19.88	20.88	21.88
Balance useful life at the beginning of the year (F) = 25 - (E)	7.12	6.12	5.12	4.12	3.12
Weighted Average Rate of Depreciation (WAROD) (F)	1.4130%	1.3903%	1.4168%	1.4129%	1.4232%
<b>Depreciation during the year (G) = (A) * (F)</b>	<b>2391.94</b>	<b>2358.32</b>	<b>2405.44</b>	<b>2399.18</b>	<b>2423.22</b>
Cumulative depreciation at the end of the year (before adjustment for de-capitalization) (H) = (G) + (Cumulative Depreciation (shown at J), at the end of the previous year) *	133437.50	135767.06	137660.83	139952.27	142226.35
Add: Cumulative Depreciation adjustment on a/c of un-discharged liabilities deducted as on 01.04.2009 (I)	0.00	0.00	0.00	0.00	0.00
Less: Depreciation adjustment on account of de-capitalization (J)	28.76	511.68	107.75	149.13	266.74
<b>Cumulative depreciation at the end of the year (K) = (H) + (I) - (J)</b>	<b>133408.74</b>	<b>135255.39</b>	<b>137553.09</b>	<b>139803.14</b>	<b>141959.62</b>

### **O&M Expenses**

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

*“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
FY 2014-15	23.90	19.95	16.00	14.40
FY 2015-16	25.40	21.21	17.01	15.31
FY 2016-17	27.00	22.54	18.08	16.27
FY 2017-18	28.70	23.96	19.22	17.30
FY 2018-19	30.51	25.47	20.43	18.38

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

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

55. The O&M expenses claimed in Form-3A of the petition is as follows:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M expenses (normative) under Regulation 29 (1) of the 2014 Tariff Regulations	20076.00	21336.50	22680.00	24108.00	25628.00
<b>O&amp;M expenses under Regulation 29(2) of the 2014 Tariff Regulations</b>					
Water Charges	159.12	151.33	139.80	145.77	129.65
Capital Spares consumed	413.49	543.36	217.15	1203.57	744.02
<b>Total O&amp;M expenses claimed (Regulation 29(1) &amp; Regulation 29 (2) of the 2014 Tariff Regulations</b>	<b>20648.60</b>	<b>22030.69</b>	<b>23036.95</b>	<b>25457.34</b>	<b>26502.07</b>
Impact of Pay revision	0.00	47.07	2132.41	2520.37	2989.27
Impact of GST	0.00	0.00	0.00	150.07	223.29
<b>Total O&amp;M expenses claimed</b>	<b>20648.60</b>	<b>22077.76</b>	<b>25169.36</b>	<b>28127.78</b>	<b>29714.63</b>

56. The Petitioner has claimed normative expenses allowed by order dated 11.4.2017 in Petition No. 330/GT/2014 as under:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
20076.00	21336.50	22680.00	24108.00	25628.00

57. Since the normative O&M expenses claimed by Petitioner are in terms of Regulation 29(1)(a) of the 2014 Tariff Regulations, the claim of the Petitioner is allowed.

### **Water Charges**

58. 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:*

*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:  
xxx”*

59. The Commission vide its order dated 11.4.2017 in Petition No. 330/GT/2014 had allowed water charges amounting to Rs.752.00 lakh during the period 2014-19 (or Rs.150.40 lakh each year from 2014-15 to 2018-19). Accordingly, the details for water charges comprising the contracted quantity, allocation of water, the actual water consumed during 2014-19, the basis of calculation of quantity of consumptive water and computation of water charges are submitted in Form 3B. In addition, the Petitioner has submitted the notification for water charges from Uttar Pradesh Government dated 15.7.2011. The Petitioner has claimed total actual water charges of Rs.725.66 lakh during the period 2014-19 (i.e. Rs.159.12 lakh in 2014-15, Rs.151.33 lakh in 2015-16, Rs.139.80 lakh in 2016-17, Rs.145.77 lakh in 2017-18 and Rs.129.65 lakh in 2018-19). On scrutiny of the said information, the audited actual water charges claimed by the Petitioner, as above, is allowed on prudence check.

### **Capital spares**

60. Regulation 29(2) of the 2014 Tariff Regulations provides as follows:

*“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.”*

61. As per the second proviso to Regulation 29(2) of the 2014 Tariff Regulations, capital spares are admissible separately. The Petitioner has claimed total actual capital spares for Rs.3121.59 lakh during the period 2014-19 (i.e. Rs.413.49 lakh in 2014-15,



Rs.543.36 lakh in 2015-16, Rs.217.15 lakh in 2016-17, Rs.1203.57 lakh in 2017-18 and Rs.744.02 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 also 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 period 2014-19 may be allowed. The details of the capital spares submitted by the Petitioner, in Form 9Bi, is as under:

*(Rs. in lakh)*

Year	Capital Spares	Capital Spares	Total Capital Spares consumed
	(part of capital cost)	(not part of capital cost)	
	(A)	(B)	
2014-15	12.61	400.88	413.49
2015-16	541.72	1.64	543.36
2016-17	122.89	94.25	217.15
2017-18	105.10	1098.47	1203.57
2018-19	122.41	621.61	744.02

62. 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. 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 standardized 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. Based on this, the details of the allowed capital spares considered for the period 2014-19 is summarized 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>
Capital Spares (not part of capital cost) claimed (A)	400.88	1.64	94.25	1098.47	621.61
Value of capital spares (of Rs 1 lakh and below) disallowed on individual basis (B)	3.94	0.00	3.00	8.49	7.59
Net total value of capital spares considered (C) = (A) - (B)	396.95	1.64	91.25	1089.97	614.02

63. We are also 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>				
	<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 (A)	396.95	1.64	91.25	1089.97	614.02
Salvage value @ 10% (B)	39.69	0.16	9.13	109.00	61.40
<b>Net Claim allowed (C) = (A)-(B)</b>	<b>357.25</b>	<b>1.48</b>	<b>82.13</b>	<b>980.98</b>	<b>552.62</b>

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

64. The Petitioner has claimed impact of GST for Rs.150.07 lakh during the period 2017-18 (1.7.2017 to 31.3.2018) and Rs.223.29 lakh in 2018-19. It is observed that the Commission while specifying the O&M expense norms for the period 2014-19 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 to the 2014 Tariff Regulations, which is extracted as follows:

*“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...”*

65. Further, the escalation rates considered in the O&M expense norms under the 2014 Tariff Regulations 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.

### **Impact of wage revision**

66. The Petitioner has claimed an amount of Rs.7689.12 lakh (Rs.47.07 lakh in 2015-16, Rs.2132.41 lakh in 2016-17, Rs.2520.37 lakh in 2017-18 and Rs.2989.27 lakh in 2018-19) as impact of wage revision in respect of employees of CISF and Kendriya Vidyalaya Staff from 1.1.2016 and the employees of the Petitioner posted in the generating station, with effect from 1.1.2017. However, it is noticed that the said claim of the Petitioner includes 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 in the present case. Accordingly, the claim of the Petitioner in respect of wage revision impact stands reduced to Rs.6740.44 lakh with the following year-wise break-up:



(Rs. in lakh)

	2015-16	2016-17	2017-18	2018-19	Total
Wage revision impact claimed excluding PRP/ ex-gratia	47.07	2132.40	2330.71	2230.26	6740.44

67. The Petitioner vide its 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 FGUTPS);

(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 Petitioner vide its affidavit dated 30.6.2022 has furnished the actual O&M expenses of the generating station for the period 2014-19, along with the Wage revision impact (excluding PRP and ex-gratia) for the generating station as shown below:

(Rs. in lakh)

Year	Actual O&M expenses for NCSTPS stage-1 (excluding water charges )	Wage Revision impact claimed for NCSTPS stage-1 excluding PRP/Ex-gratia
2014-15	17027.95	
2015-16	17581.04	47.07
2016-17	19429.95	2132.40
2017-18	20175.42	2330.71
2018-19	21374.95	2230.26
<b>Total</b>	<b>95589.31</b>	<b>6740.44</b>

69. 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 will be examined on a case to case basis, balancing the interest of generating stations and the consumers. The relevant portion of SOR is extracted below:

"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."**

70. 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 they put departmental restrictions and try to bring the expenditure for the next year below the norms.

71. 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 actuals O&M expenses incurred shall be made for 2015-19 on a combined basis which is commensurate with the wage revision claim being spread over these four years.

72. 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 the generating station. 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 (for CISF & KV employees) and 1.1.2017 (for 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.

73. 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 utilisation 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 (normalised) 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 (normalised) for the same period, the wage revision impact (excluding PRP and ex-gratia) to the extent of under recovery or



wage revision impact (excluding PRP and ex-gratia), whichever is lower, is required to be allowed as wage revision impact for the period 2015-19.

74. In this regard, the details as furnished by the Petitioner for actual O&M expenses for the generating station (1820 MW) and wage revision impact (excluding PRP and ex-gratia) of the generating station are 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>	<b>Total</b>
Actual O&M expenditure for Dadri Thermal Station excluding water charges (1820 MW) (A)	40006.94	41738.77	44949.01	49063.03	51492.11	227249.86
Total Normative O&M recovery excluding water charges in tariff for Dadri Thermal Station (1820 MW) (B)	35756.00	38005.80	40398.40	42943.60	45649.80	202753.60
Under-recovery of O&M Charges in Dadri Thermal Station (1820 MW) (B-C)	(-) 4250.94	(-) 3732.98	(-) 4550.62	(-) 6119.43	(-) 5842.31	(-) 24496.26

75. 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 above, has been excluded from the actual O&M expenses to arrive at the actual O&M expenses (normalised) for the combined Stage-I and II of the generating station (1820 MW). Accordingly, the following table portrays the comparison of normative O&M expenses versus the actual O&M expenses (normalised) along with wage revision impact claimed by the Petitioner for the generating station (Stage-I 840 MW) for period 2015-19 (on combined basis) commensurate with the wage revision claim being spread over these four years:

**(Rs. in lakh)**

<b>S. No</b>		<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>	<b>Total</b>
1	Actual O&M expenditure (normalized) for NCTPS (Combined for stage-I and II) (a)	38092.26	42098.23	43713.41	46312.39	170216.29



S. No		2015-16	2016-17	2017-18	2018-19	Total
2	Actual O&M expenditure (normalized) for NCTPS Stage -I prorated based on capacity (b)	17581.04	19429.95	20175.42	21374.95	78561.36
2	Normative O&M Expenses for NCTPS Stage -I (c)	21336.00	22680.00	24108.00	25628.40	93752.40
	Under-recovery (d) = (b)-(c)	(-) 3754.96	(-) 3250.05	(-) 3932.58	(-) 4253.45	(-) 15191.04
3	Wage revision impact claimed excluding PRP / exgratia	47.07	2132.40	2330.71	2230.26	6740.44
4	Wage revision impact allowed <b>excluding PRP/ exgratia</b>	0.00	0.00	0.00	0.00	0.00

76. It is observed that for the period 2015-19, the normative O&M expenses is more than the actual O&M expenses (normalised) incurred and there is no under recovery, of amounts, on this count. As such, in terms of methodology as discussed above, the wage revision impact (excluding PRP/incentive) is not allowable for the generating station.

77. Based on the above discussions, the total annualized O&M expenses allowed for the period 2014-19 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)		840.00	840.00	840.00	840.00	840.00
O&M Expenses under Reg.29(1) in Rs lakh / MW (B)		23.90	25.40	27.00	28.70	30.51
Total O&M Expenses (in Rs lakh) (C) = (A)*(B)	Claimed	20076.00	21336.00	22680.00	24108.00	25628.40
	<b>Allowed</b>	<b>20076.00</b>	<b>21336.00</b>	<b>22680.00</b>	<b>24108.00</b>	<b>25628.40</b>
Water Charges (in Rs lakh) (D)	Claimed	159.12	151.33	139.80	145.77	129.65
	<b>Allowed</b>	<b>159.12</b>	<b>151.33</b>	<b>139.80</b>	<b>145.77</b>	<b>129.65</b>
Capital Spares Consumed (in Rs lakh) (E)	Claimed	413.49	543.36	217.15	1203.57	744.02
	<b>Allowed</b>	<b>357.25</b>	<b>1.48</b>	<b>82.13</b>	<b>980.98</b>	<b>552.62</b>
<b>Total O&amp;M Expenses as allowed (including Water Charges and Capital Spares Consumed) (F) = (C+D+E)</b>	Claimed	<b>20648.60</b>	<b>22030.69</b>	<b>23036.95</b>	<b>25457.34</b>	<b>26502.07</b>
	<b>Allowed</b>	<b>20592.37</b>	<b>21488.81</b>	<b>22901.93</b>	<b>25234.74</b>	<b>26310.67</b>
<b>Additional O&amp;M Expenses</b>						
Impact of Wage Revision (in Rs lakh) (G)	Claimed	0.00	47.07	2132.41	2520.37	2989.27
	<b>Allowed</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Impact of GST (in Rs lakh) (H)	Claimed	0.00	0.00	0.00	150.07	223.29
	<b>Allowed</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Sub Total Additional O&M Expenditure (J)=F+G+H+I	Claimed	0.00	47.07	2132.41	2670.44	3212.56
	<b>Allowed</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Total O&amp;M Expenses in Rs lakh (K) = (F+I)</b>	Claimed	<b>20648.60</b>	<b>22077.76</b>	<b>25169.36</b>	<b>28127.78</b>	<b>29714.63</b>
	<b>Allowed</b>	<b>20592.37</b>	<b>21488.81</b>	<b>22901.93</b>	<b>25234.74</b>	<b>26310.67</b>

## **Compensation Allowance**

78. 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.”*

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

79. The Petitioner has claimed Compensation allowance as under:

<b>(Rs. in lakh)</b>				
<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
630.00	735.00	840.00	840.00	630.00

80. Since the Petitioner has claimed Compensation allowance as allowed by order dated 11.4.2017 in Petition No. 330/GT/2014 and is in terms of the above regulations, the claim of the Petitioner is allowed.

## **Special Allowance**

81. 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.”*

82. The Petitioner has claimed total Special Allowance for Rs.2014.79 lakh, which was allowed by order dated 11.4.2017 in Petition No. 330/GT/2014. Since the claim of the Petitioner for Rs.2014.79 lakh as Special Allowance is in terms of the above regulations, the same is allowed.

### **Operational Norms**

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

83. The 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 allowed.

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

84. The Normative Auxiliary Energy Consumption of 8.50% for 2014-15 to 2018-19, claimed by the Petitioner, is in accordance with Regulation 36 (E)(a)(ii) of the 2014 Tariff Regulations and hence allowed.

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

85. The Gross Station Heat Rate of 2450.00 Kcal/ kWh was approved by order dated 11.4.2017 in Petition No. 330/GT/2014. Further, the Petitioner was directed to obtain the GCV 'as billed' from the coal supplier and work out the IWC components. In accordance with the provisions of Regulation 36 (C) of the 2014 Tariff Regulations,



Gross station heat rate of 2450 kCal/kWh has been allowed.

**d) Specific Fuel Oil Consumption**

86. The specific oil consumption of 0.5 ml/ kWh claimed is in terms of Regulation 36(E)(b) of the 2014 Tariff Regulations and hence 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.*

*(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 Components and Energy Charges in working capital**

88. 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. In terms of Regulation 30 (6) of the 2014 Tariff Regulations, for determination of the Energy Charges in working capital, the GCV on 'as received' basis is to be considered.

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

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

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

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

90. The issue of 'as received' GCV 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) challenged Regulations 30(6) of the 2014-19 Tariff Regulations with regard to measurement of GCV of coal on 'as received' basis for purpose of Energy Charges and the Hon'ble Court had directed the Commission to decide the place from where the sample of coal should be taken for measurement of GCV of coal on 'as received' basis on the request of Petitioners. In terms of the directions of the Hon'ble High Court, the Commission vide order dated 25.1.2016 in Petition No. 283/GT/2014 (approval of tariff of Kahalgaon STPS for the 2014-19 tariff period), decided as under:

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

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

*(b) The samples for the purpose of measurement of coal on as received basis should be collected from the loaded wagons at the generating stations either manually or through*





*the Hydraulic Auger in accordance with provisions of IS 436(Part1/Section1)-1964 before the coal is unloaded. While collecting the samples, the safety of personnel and equipment as discussed in this order should be ensured. After collection of samples, the sample preparation and testing shall be carried out in the laboratory in accordance with the procedure prescribed in IS 436(Part1/Section1)-1964 which has been elaborated in the CPRI Report to PSERC.”*

91. The review petition filed by the Petitioner against the aforesaid order dated 25.1.2016 was rejected by the Commission vide order dated 30.6.2016 in Petition No.11/RP/2016. The Petitioner filed Petition No. 244/MP/2016 before this Commission praying for removal of difficulties and the issues faced by it in implementing the Commission's orders dated 25.1.2016 and 30.6.2016 with regard sampling of coal from loaded wagon top for measurement of GCV and the Commission by its order dated 19.9.2018 had 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 vs NTPC & ors.) and the same is pending adjudication.

92. In Petition No. 330/GT/2014 filed by the Petitioner for determination of tariff of this generating station for the period 2014-19, 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 IWC. Therefore, the Commission vide order dated 11.4.2017 in Petition No.330/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.

93. The Petitioner, in this petition, has claimed fuel related components of working capital based on GCV of coal as 3753.50 Kcal/kg (as indicated at Form-13F) consequent to the order of the Commission dated 11.4.2017 in Petition No. 330/ GT/ 2014. This "as received" GCV of 3753.50 kcal/kg represents the average of monthly as



received GCVs for period from October 2016 to March 2019 (30 months). Further, the Petitioner has submitted that CEA vide letter dated 17.10.2017 has opined that 85-100 kcal/kg for a pit-head station and a margin of 105-120 kcal/kg for non-pit head station may be considered as a loss of GCV of coal between 'as received' and 'as fired'. Accordingly, the Petitioner has considered 120 kcal/kg margin on the average GCV of the period from October 2016 to March 2019 for computing working capital. Accordingly, the cost of fuel component in the working capital claimed by the Petitioner 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>
Cost of Coal towards stock (1 month)	15203.04	15203.04	15203.04	15569.38	15569.38
Cost of Coal towards Generation (1 month)	15203.04	15203.04	15203.04	15569.38	15569.38
Cost of Secondary fuel oil (2 months)	185.64	186.15	185.64	190.12	190.12

94. The Petitioner has also submitted that it has filed a separate petition (Petition No. 244/MP/2016) seeking appropriate reliefs due to extreme practical difficulty faced by the Petitioner in implementing Regulation 30(6) of the 2014 Tariff Regulations and directions issued by the Commission in its order dated 25.1.2016 and for consequential directions. It has also sought liberty to make additional submissions based on the final decision in Petition No. 244/MP/2016.

95. 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 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, 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 under:

Sl.	Month	Wt. Avg GCV of coal received (EM basis) (kcal/kg) (A)	Total Moisture (TM) (in %) (B)	Equilibrated Moisture (EM) (in %) (C)	Wt. Avg GCV of coal received (TM basis) (kcal/kg) (D=A*(1-B%)/(1-C%))
1	January 2014	4268.77	9.53	5.48	4085.98
2	February 2014	4031.15	10.82	6.57	3847.61
3	March 2014	4157.50	11.10	7.00	3974.19
	<b>Average</b>				<b>3969.26</b>

96. The submissions have been considered. As discussed 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 120 kCal/kg for computation of the working capital of the generating station.

97. 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, the 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. 330/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 months), 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.

98. 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 discussed 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."*

99. 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.

100. 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 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.

101. The Petitioner in Form-15, of the petition has calculated GCV of coal as 3753.50 kcal/kg which represents the simple average of GCV of the preceding three months i.e. January 2014, February 2014 and March 2014. The Petitioner vide affidavit dated 30.6.2021 has submitted the Weighted Average GCV of coal received for the above period and claimed GCV of 3969.26 kcal/kg for the purpose of tariff. It is observed that for the month of February 2014, the Petitioner has submitted 'as fired' GCV of 3875.00 kcal/kg whereas vide affidavit dated 30.6.2021, the Petitioner has submitted 'as received' GCV of 3847.61 kcal/kg. Thus, in our view, there is an error in the submission of the Petitioner. Accordingly, we have considered the value of 3875.00 kcal/kg for the



month of February, while calculating GCV for the purpose of Energy Charge Rate. As such, the weighted average of the monthly GCVs works out to be 3978.39 kcal/kg.

102. 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 3978.39 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.

103. Based on the above discussion, the cost of fuel components in working capital is worked out and allowed 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)	14149.84	14149.84	14149.84	14490.80	14490.80
Cost of Coal towards generation (30 days)	14149.84	14149.84	14149.84	14490.80	14490.80
Cost of Secondary fuel oil (2 months)	185.64	186.15	185.64	190.12	190.12

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

104. 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*

105. The Petitioner has claimed Energy Charge Rate (ECR) ex-bus of 332.987 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/kWh} & GCV and price of Oil procured and burnt for the preceding three months of 2014-19 tariff period for the generating station. Since these claims of the Petitioner has not been allowed as stated above, the allowable ECR, based on the operational norms specified under the 2014 Tariff Regulations and on weighted average of 'as received' GCV of 3969.26 kcal/ kg is worked out as under:

	<b>Unit</b>	<b>2014-19</b>
Capacity	MW	840
Gross Station Heat Rate	Kcal/kWh	2450.00
Auxiliary Energy Consumption	%	8.50
Weighted average GCV of oil (As received)	Kcal/ lit	9760.80
Weighted average GCV of coal (As received)	Kcal/ kg	3978.39
Weighted average price of oil	Rs./ KL	36475.40
Weighted average price of Coal	Rs./MT	4586.37
<b>Rate of energy charge ex-bus</b>	<b>Rs./kWh</b>	<b>3.101</b>

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

106. The Petitioner in Form-13B has claimed maintenance spares in the working capital shown in the table 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>
4129.72	4415.55	5033.87	5625.56	5942.93

107. Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provide for maintenance spares @ 20% of the operation & maintenance expenses. As specified in 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 follows:





*(Rs. in lakh)*

2014-15	2015-16	2016-17	2017-18	2018-19
4118.47	4297.76	4580.39	5046.95	5262.13

### **Working Capital for Receivables**

108. 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 follows:

*(Rs.in lakh)*

	2014-15	2015-16	2016-17	2017-18	2018-19
Variable Charges - for two months (A)	28882.39	28961.52	28882.39	29578.35	29578.35
Fixed Charges – for two months (B)	8208.36	8378.01	8633.32	9076.21	9281.42
<b>Total (C) = (A+B)</b>	<b>37090.75</b>	<b>37339.53</b>	<b>37515.70</b>	<b>38654.56</b>	<b>38859.76</b>

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

109. 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 follows:

*(Rs. in lakh)*

2014-15	2015-16	2016-17	2017-18	2018-19
1720.72	1839.81	2097.45	2343.98	2476.22

110. 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 tariff purpose is shown in table as follows:

*(Rs. in lakh)*

2014-15	2015-16	2016-17	2017-18	2018-19
1716.03	1790.73	1908.49	2102.90	2192.56

111. The difference in the O&M expenses for 1 month and maintenance spares claimed and the O&M expenses for 1 month and cost of maintenance spares allowed as above, is due to the fact that, while the Petitioner's claim is based on the O&M expenses inclusive of the expenditure on GST and impact of wage revision, these components have not been included in our calculations towards working capital requirements.

### **Rate of interest on working capital**

112. 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 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 for Coal towards stock - 30 days (A)	14149.84	14149.84	14149.84	14490.80	14490.80
Working capital for Coal towards generation - 30 days (B)	14149.84	14149.84	14149.84	14490.80	14490.80
Working capital for Secondary Fuel Oil - 2 months (C)	185.64	186.15	185.64	190.12	190.12
Working Capital for O&M expenses - 1 month (D)	1716.03	1790.73	1908.49	2102.90	2192.56
Working Capital for Maintenance Spares - 20% of O&M (E)	4118.47	4297.76	4580.39	5046.95	5262.13
Working Capital for Receivables - 2 months (F)	37090.75	37339.53	37515.70	38654.56	38859.76
<b>Total Working Capital (G) = (A+B+C+D+E+F)</b>	<b>71410.57</b>	<b>71913.85</b>	<b>72489.90</b>	<b>74976.12</b>	<b>75486.17</b>
Rate of Interest (H)	13.50%	13.50%	13.50%	13.50%	13.50%
Total Interest on Working capital (I) = (GxH)	<b>9640.43</b>	<b>9708.37</b>	<b>9786.14</b>	<b>10121.78</b>	<b>10190.63</b>

### **Annual Fixed Charges for the period 2014-19**

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

	(Rs. in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	2391.94	2358.32	2405.44	2399.18	2423.22
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	16625.44	16712.55	16706.39	16701.58	16763.97
Interest on Working Capital	9640.43	9708.37	9786.14	10121.78	10190.63
O&M Expenses	20592.37	21488.81	22901.93	25234.74	26310.67
<b>Sub-total</b>	<b>49250.18</b>	<b>50268.05</b>	<b>51799.89</b>	<b>54457.28</b>	<b>55688.49</b>
Compensation Allowance	630.00	735.00	840.00	840.00	630.00
Special Allowance	0.00	0.00	0.00	0.00	2014.79
<b>Total</b>	<b>49880.18</b>	<b>51003.05</b>	<b>52639.89</b>	<b>55297.28</b>	<b>58333.28</b>

Note: All figures are on annualized 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.

114. 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.

115. Petition No. 388/GT/2020 is disposed of in terms of the above.

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

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

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

