

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 237/GT/2020**

**Coram:**

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

**Shri Arun Goyal, Member**

**Shri Pravas Kumar Singh, Member**

**Date of Order: 26<sup>th</sup> July, 2023**

**IN THE MATTER OF**

Petition for truing-up of tariff of Ramagundam STPS, Stages-I&II (2100 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 – 110 003

**.... Petitioner**

**Vs**

1. AP Eastern Power Distribution Company Limited,  
Corporate Office, P&T Colony, Seethammadhara,  
Visakhapatnam – 530 013 - (AP)
2. AP Southern Power Distribution Company Limited,  
Corporate Office, Back Side Srinivasa Kalyana Mandapam,  
Tiruchhanur Road, Kesavayana Gunta,  
Tirupathi – 517 503 (AP)
3. Telangana State Northern Power Distribution Company Limited,  
H.No. 2-5-31/2, Vidyut Bhavan, Nakkalagutta, Hanamkonda,  
Warangal – 506 001 (AP)
4. Telangana State Southern Power Distribution Company Limited,  
Mint Compound, Corporate Office,  
Hyderabad (AP) – 500 063
5. Tamil Nadu Generation & Distribution Corporation Limited,  
144, Anna Salai, Chennai – 600 002



6. Bangalore Electricity Supply Company Limited,  
Krishna Rajendra Circle, Bangalore - 560 009.
7. Mangalore Electricity Supply Company Limited,  
MESCOM bhavana, Corporate Office,  
Bejai, kavoor cross road, Mangaluru,  
575004, Karnataka
8. Chamundeshwari Electricity Supply Corp. Limited,  
Corporate Office, No. 29, Vijayanagar,  
2nd stage, Hinkal, Mysore – 570 017
9. Gulbarga Electricity Supply Company Limited,  
Main road, Gulbarga, Karnataka.  
Gulbarga – 585 102
10. Hubli Electricity Supply Company Limited,  
Corporate office, P.B. Road, Navanagar,  
Hubli – 580 025.
11. Kerala State Electricity Board,  
Vaidyuthi Bhavanam, Pattom,  
Thiruvananthapuram – 695 004
12. Electricity Department,  
Govt. of Puducherry,  
137, Netaji Subhash Chandra Bose Salai,  
Puducherry- 605001
13. Electricity Department,  
Govt. of Goa, Vidyut Bhavan ,3rd Floor,  
Panaji, Goa -403001

...Respondents

**Parties Present:**

Shri Venkatesh, Advocate NTPC  
Shri Anant Singh, Advocate, NTPC  
Shri Rishabh Sehgal, Advocate, NTPC  
Shri Kartikey Trivedi, Advocate, NTPC  
Shri Shahrab Zaheer, NTPC  
Shri U.S. Mohanty, NTPC  
Shri S. Vallinayagam, Advocate, TANGEDCO  
Shri Prabhas Bajaj, Advocate, KSEBL



## ORDER

This Petition has been filed by the Petitioner, NTPC Limited, for truing up of tariff of Ramagundam Super Thermal Power Station, Stage-I&II (2100 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 total capacity of 2100 MW comprises of two stages. Stage-I consists of three units of 200 MW each and Stage-II consists of three units of 500 MW each. The dates of commissioning of the units of the generating station are as under:

	Capacity (MW)	COD
Unit-I	200	1.03.1984
Unit-II	200	1.11.1984
Unit-III	200	1.05.1985
Unit-IV	500	1.11.1988
Unit-V	500	1.09.1989
Unit-VI / <b>Generating Station</b>	500	<b>1.04.1991</b>

2. The Commission vide its order dated 24.1.2017 in Petition 292/GT/2014 had determined the capital cost and annual fixed charges of the generating station for the period 2014-19, as under:

### **Capital Cost allowed**

*(Rs. in lakh)*

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	230569.84	230569.84	230569.84	230569.84	230569.84
Add: Addition during the year	0.00	0.00	0.00	0.00	0.00
<b>Closing capital cost</b>	<b>230569.84</b>	<b>230569.84</b>	<b>230569.84</b>	<b>230569.84</b>	<b>230569.84</b>
Average capital cost	230569.84	230569.84	230569.84	230569.84	230569.84

### **Annual Fixed Charges allowed**

*(Rs. in lakh)*

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	1369.70	0.00	0.00	0.00	0.00
Interest on Loan	116.58	0.00	0.00	0.00	0.00
Return on Equity	22470.09	22578.95	22578.95	22578.95	22578.95
Interest on Working Capital	12866.14	13000.21	13143.94	13550.87	13731.16
O&M Expenses	39712.23	42127.23	44692.23	47422.23	50323.23
Compensation Allowance	1000.00	500.00	0.00	0.00	0.00



	2014-15	2015-16	2016-17	2017-18	2018-19
Special Allowance	7735.54	12214.87	17231.89	18326.11	19489.82
<b>Total</b>	<b>85270.30</b>	<b>90421.26</b>	<b>97647.01</b>	<b>101878.16</b>	<b>106123.17</b>

### **Present Petition**

3. 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.”*

4. Accordingly, in terms of the above regulation, the Petitioner has claimed the capital cost and annual fixed charges vide affidavit dated 9.8.2022 (revised) for the period 2014-19, as under:

### ***Capital cost claimed***

*(Rs. in lakh)*

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	230569.84	228319.26	231334.00	231254.35	233250.28
Add: Addition during the year	308.91	3116.06	-	2391.60	202.20
Less: De-capitalisation during the year	2559.49	101.33	327.88	619.85	56.95
Add: Discharges during the year	-	-	248.23	224.18	323.98
Closing capital cost	228319.26	231334.00	231254.35	233250.28	233719.51
Average Capital cost	229444.55	229826.63	231294.17	232252.31	233484.89

### ***Annual fixed charges claimed***

*(Rs. in lakh)*

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	356.93	2647.41	1411.99	1157.42	1667.19
Interest on Loan	220.20	178.41	94.52	63.47	46.02
Return on Equity	22404.58	22535.70	22622.46	22679.10	22811.89
Interest on Working Capital	15393.35	15561.87	15960.12	16458.21	16731.91
O&M Expenses	42373.73	43799.31	45910.63	48301.82	51724.10
Compensation Allowance	1000.00	500.00	-	-	-
Special Allowance	7735.54	12214.87	17231.89	18326.11	19489.82
<b>Total (A)</b>	<b>89484.33</b>	<b>97437.58</b>	<b>103231.61</b>	<b>106986.12</b>	<b>112470.93</b>
<b>Additional O&amp;M Expenditure</b>					
Impact of pay revision	-	91.74	5157.91	5745.89	6340.33
Impact of GST	-	-	-	377.87	533.59
Ash Transportation Expenditure	-	-	-	-	-
<b>Total (Additional O&amp;M) (B)</b>	<b>-</b>	<b>91.74</b>	<b>5157.91</b>	<b>6123.76</b>	<b>6873.92</b>
<b>Total (A+B)</b>	<b>89484.33</b>	<b>97529.32</b>	<b>108389.52</b>	<b>113109.88</b>	<b>119344.85</b>



5. The Respondent TANGEDCO and KSEBL have filed their replies on 29.10.2020/23.3.2021/26.12.2022 and 16.7.2021, respectively. In response, the Petitioner has filed rejoinder to the said replies on 23.12.2020/26.5.2021(TANGEDCO) and on 31.8.2021(KSEBL). The Petitioner has also submitted certain additional information, vide its affidavits dated 30.6.2021, 15.7.2021, 9.8.2022, 16.9.2022 and 6.12.2022, after serving copies on the Respondents. The Petition was heard on 6.12.2022 and the Commission, after hearing the parties, reserved its order in the matter. The Petitioner has filed the note of arguments made during the hearing. The Commission also permitted the Respondents to file their written submissions (not exceeding three pages), to the note of arguments filed by the Petitioner. Based on the submissions of the parties and the documents available on record and on prudence check, we proceed for truing up the tariff of the generating station for the period 2014-19, as stated in the subsequent paragraphs.

### **Capital Cost**

6. Regulation 9(1) of the 2014 Tariff Regulations provides that the capital cost as determined by the Commission after prudence check, in accordance with this regulation, shall form the basis of determination of tariff for existing and new projects.

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

*“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 Regulations 14.*
- (c) expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15;”*

7. The Commission vide its order dated 27.6.2016 in Petition No. 217/GT/2014 had trued up the tariff of the generating station for the period 2009-14, considering the



closing capital cost of Rs. 230569.84 lakh, on cash basis, after removal of un-discharged liabilities of Rs.78.80 lakh (all pertaining to un-discharged liabilities deducted as on 1.4.2009), as on 31.3.2014. The Commission vide its order dated 24.1.2017, had approved the annual fixed charges of the generating station for the period 2014-19, considering the opening capital cost of Rs. 230569.84 lakh (on cash basis). This has been claimed by the Petitioner, in the present petition, as the opening capital cost as on 1.4.2014. Accordingly, in terms of Regulation 9(3) of the 2014 Tariff Regulations, the capital cost of Rs. 230569.84 lakh, as on 31.3.2014, has been considered as opening capital cost as on 1.4.2014.

### **Additional Capital Expenditure**

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

*“14. Additional Capitalisation and De-capitalisation:*

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

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

*(ii) Works deferred for execution;*

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

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

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

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

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

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

*(ii) Change in law or compliance of any existing law;*

*(iii) Deferred works relating to ash pond or ash handling system in the original scope of work; and*

*(iv) Any liability for works executed prior to the cut-off date, after prudence check of the details of such un-discharged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.*



*(3) The capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be incurred on the following counts after the cut-off date, may be admitted by the Commission, subject to prudence check:*

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

*(ii) Change in law or compliance of any existing law;*

*(iii) Any expenses to be incurred on account of need for higher security and safety of the plant as advised or directed by appropriate Government Agencies of statutory authorities responsible for national security/internal security;*

*(iv) Deferred works relating to ash pond or ash handling system in the original scope of work;*

*(v) Any liability for works executed prior to the cut-off date, after prudence check of the details of such un-discharged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.;*

*(vi) Any liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;*

*(vii) Any additional capital expenditure which has become necessary for efficient operation of generating station other than coal /lignite-based stations or transmission system as the case may be. The claim shall be substantiated with the technical justification duly supported by the documentary evidence like test results carried out by an independent agency in case of deterioration of assets, report of an independent agency in case of damage caused by natural calamities, obsolescence of technology, up-gradation of capacity for the technical reason such as increase in fault level;*

*(viii) In case of hydro generating stations, any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the generating company) and due to geological reasons after adjusting the proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation;*

*(ix) In case of transmission system, any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement due to obsolescence of technology, replacement of switchyard equipment due to increase of fault level, tower strengthening, communication equipment, emergency restoration system, insulators cleaning infrastructure, replacement of porcelain insulator with polymer insulators, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system; and*

*(x) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receiving system arising due to non-materialisation of coal supply corresponding to full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station:*

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





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

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

9. The Commission vide order dated 24.1.2017, had not allowed any projected additional capital expenditure for the period 2014-19. The additional capital expenditure claimed by the Petitioner, duly supported by auditor certificate, for the period 2014-19, is as under:

*(Rs. in lakh)*

	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Closing Gross Block as per audited books	434033.81	442711.81	* 154783.79	* 170167.71	* 182053.18
Less: Opening Gross Block as per audited books	423392.34	434033.81	* 139684.64	* 154783.79	* 170167.71
Additional capital expenditure as per audited books	10641.47	8678.00	* 15099.15	* 15383.92	* 11885.46
Less: Additional capital expenditure pertaining to other Stages	1785.04	(-) 1263.10	3066.55	158.42	1370.61
Additional capital expenditure for the generating station	8856.43	9941.10	12032.60	15225.50	10514.86
Less: IND AS Adjustment	-	-	3321.12	4943.77	4705.29
Additional capital expenditure as per IGAAP for the generating station	8856.43	9941.10	8711.48	10281.73	5809.57
Less: Exclusions	11056.94	6234.01	9035.19	8126.61	5610.75
Additional capital expenditure claimed for the generating station (on accrual basis)	(-) 2200.51	3707.09	(-) 323.70	2155.12	198.81
Less: Un-discharged liabilities included above	50.07	692.35	4.17	383.37	53.56
Additional capital expenditure claimed for the generating station (on cash basis)	(-) 2250.58	3014.74	(-) 327.88	1771.75	145.25
Add: Discharges of liabilities	-	-	248.23	224.18	323.98
<b>Net Additional capital expenditure claimed including discharges for the generating station</b>	<b>(-) 2250.58</b>	<b>3014.74</b>	<b>(-) 79.65</b>	<b>1995.93</b>	<b>469.23</b>

\* As per IND AS





## **Exclusions**

10. The summary of exclusions from the books of accounts, as claimed (on accrual basis) 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>
Items not allowed in 2014-19	2679.35	292.28	2683.49	1128.98	735.03
Items not claimed as additional capitalisation in 2014-19 (net of de-capitalisation)	843.52	5352.93	8123.11	7288.89	6292.06
Contractor / package FERV	(-) 1.14	0.00	0.00	0.00	0.00
Capitalisation of capital spares	8749.68	0.00	0.00	0.00	0.00
Inter-unit transfer of assets	0.00	2127.74	(-) 1086.29	0.23	(-) 220.06
Reversal of liabilities	0.00	0.00	(-) 133.95	0.00	(-) 1.51
De-capitalisation of spares (not part of capital cost)	0.00	(-) 1383.40	0.00	(-) 43.84	(-) 852.53
De-capitalisation of MBOA's (not part of capital cost)	(-) 32.69	(-) 35.78	(-) 52.82	(-) 2.80	(-) 44.06
De-capitalisation of MBOA's (part of capital cost)	(-) 21.50	(-) 114.99	(-) 496.41	(-) 244.86	(-) 298.03
De-capitalisation of plant & machinery items including temporary erection (part of capital cost)	(-) 1160.29	(-) 2.12	0.00	0.00	0.00
De-capitalisation of plant & machinery items (not part of capital cost)	0.00	(-) 2.64	(-) 1.94	0.00	0.00
Cost adjustment	0.00	0.00	0.00	0.00	(-) 0.15
<b>Total Exclusions claimed</b>	<b>11056.94</b>	<b>6234.01</b>	<b>9035.19</b>	<b>8126.61</b>	<b>5610.75</b>

11. We first examine the exclusions claimed by the Petitioner, as under:

### ***Items not allowed for the period 2014-19***

12. The Petitioner has claimed an amount of Rs. 2679.35 lakh in 2014-15, Rs.292.28 lakh in 2015-16, Rs.2683.49 lakh in 2016-17, Rs.1128.98 lakh in 2017-18 and Rs.735.03 lakh in 2018-19 under exclusion, towards items that were not allowed during the period 2014-19. The items claimed by the Petitioner under this head include works related to raising of Ash dyke, N2 dyke strengthening, DAES works, CEMS-Stack emission monitoring, Effluent quality monitoring system, MVW spray system and wagons. It is observed that the Commission has not allowed any additional capital expenditure at the time of determination of tariff for the period 2014-19, in order dated



24.1.2017 in Petition 292/GT/2014. In view of above, the capitalization of the said items is allowed under exclusion.

**Items not claimed as additional capitalisation for the period 2014-19 (net of de-capitalisation)**

13. The Petitioner has claimed an amount of Rs.843.52 lakh in 2014-15, Rs. 5352.93 lakh in 2015-16, Rs. 8123.11 lakh in 2016-17, Rs.7288.89 lakh in 2017-18 and Rs.6292.06 lakh in 2018-19, towards items that have not been claimed as additional capital expenditure during the period 2014-19. The items under this head include R&M activities of various systems and associated decapitalisation. It is observed that the Petitioner has not claimed any additional capital expenditure of these items during the period 2014-19. In view of the above, the claim of the Petitioner is allowed under exclusion. However, the de-capitalisation amount corresponding to items which are part of capital cost has been considered as de-capitalisation for the purpose of tariff and not allowed under exclusion.

14. Accordingly, the de-capitalisation not allowed as exclusion for items not claimed as additional capitalisation in the period 2014-19 is as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
De-cap of WTP mech works	(-) 8.34	0.00	0.00	0.00	0.00
De-cap of LT outdoor transformers	(-) 1.27	0.00	0.00	0.00	0.00
De-cap of CW System cooling towers RW Sump, conductor sys	(-) 36.56	0.00	0.00	0.00	0.00
De-cap of Coal handling plant	(-) 30.79	0.00	0.00	0.00	0.00
De-cap of Cooling water system	(-) 18.00	0.00	0.00	0.00	0.00
De-cap of main plant building (part of capital cost)	0.00	(-) 31.68	0.00	0.00	0.00
De-cap of plant & machinery (part of capital cost)	0.00	0.00	(-) 431.46	0.00	(-) 245.56
De-cap of water supply, drainage and sewerage (part of capital cost)	0.00	0.00	(-) 25.66	0.00	0.00
<b>Sub-total</b>	<b>(-) 94.96</b>	<b>(-) 31.68</b>	<b>(-) 457.12</b>	<b>0.00</b>	<b>(-) 245.56</b>



***Contractor/package FERV***

15. The Petitioner has claimed exclusion of contractor/package FERV of (-) Rs.1.14 lakh in 2014-15, corresponding to assets/works not allowed for the purpose of tariff. In justification for the same, the Petitioner has submitted that this being exchange rate variation only has been claimed under exclusions. Package FERV is normally allowed as part of capital cost for the purpose of tariff. Since, the FERV claimed above being corresponding to assets/works not allowed for the purpose of tariff, the Petitioner's claim under this head is allowed.

***Capitalisation of capital spares***

16. The Petitioner has claimed exclusion of capital spares of Rs. 8749.68 lakh in 2014-15. In justification for the same, the Petitioner has submitted that capital spares capitalized after the cut-off date, are not allowable as per the 2014 Tariff Regulations and accordingly the same has been claimed as exclusion. As the capitalization of spares over and above initial spares procured after the cut-off date of the generating station is not allowed as part of capital cost as per the 2014 Tariff Regulations, the claim of the Petitioner is allowed.

***Inter-unit transfer of assets***

17. The Petitioner has claimed exclusion of Rs.2127.74 lakh in 2015-16, (-) Rs.1086.29 lakh in 2016-17, Rs.0.23 lakh in 2017-18 and (-) Rs.220.06 lakh in 2018-19, on account of inter-unit transfer of assets to/from the generating station. In justification for the same, the Petitioner has submitted that since the Commission is not considering the temporary inter-unit transfer of assets, for the purpose of tariff, the same has been kept under exclusions. The Commission, in its various orders while dealing with the application for additional capitalisation in respect of other generating



stations of the Petitioner had decided that both positive and negative entries arising out of inter-unit transfers of a temporary nature shall be ignored for the purposes of tariff. In line with the said decision, the exclusion claimed under this head is allowed.

***Reversal of liabilities***

18. The Petitioner has claimed exclusion of reversal of liabilities of (-) Rs.133.95 lakh in 2016-17 and (-) Rs.1.51 lakh in 2018-19. In justification for the same, the Petitioner has submitted that the tariff is allowed on cash basis and liabilities do not form part of tariff and accordingly the reversal of the same has been kept under exclusion. Since tariff is allowed on cash basis, the exclusion of reversal of un-discharged liabilities is allowed for the purpose of tariff.

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

19. The Petitioner has claimed exclusion of de-capitalisation of capital spares of Rs.1383.40 lakh in 2015-16, Rs.43.84 lakh in 2017-18 and Rs.852.53 lakh in 2018-19. In justification for the same, the Petitioner has submitted that these capital spares are not part of allowed capital cost of the generating station and accordingly their de-capitalisation has been claimed as exclusions. It is observed from the submission of the Petitioner that these capital spares do not form part of the capital cost allowed to the generating station. Accordingly, the Petitioner's claim for exclusion under this head is allowed.

***De-Capitalisation of MBOA's (not part of capital cost)***

20. The Petitioner has claimed exclusion of de-capitalisation of MBOA's of Rs.32.69 lakh in 2014-15, Rs.35.78 lakh in 2015-16, Rs.52.82 lakh in 2016-17, Rs.2.80 lakh in 2017-18 and Rs.44.06 lakh in 2018-19. In justification for the same, the Petitioner has submitted that these MBOA's do not form part of the allowed capital



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

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

21. The Petitioner has claimed exclusion of de-capitalisation of MBOA's of Rs.21.50 lakh in 2014-15, Rs.114.99 lakh in 2015-16, Rs.496.41 lakh in 2016-17, Rs.244.86 lakh in 2017-18 and Rs.298.03 lakh in 2018-19. In justification for the same, the Petitioner has submitted that as the capitalisation of expenditure against these items are not being allowed for the purpose of tariff under the 2014 Tariff Regulations, de-capitalisation of the same has been claimed as exclusions. Since Regulation 14(4) of the 2014 Tariff Regulations provides that in case of de-capitalisation of assets, original cost of such assets shall be removed from the admitted capital cost of the generating station, the claim of the Petitioner under this head is not allowed.

***De-capitalisation of Plant & Machinery items (part of capital cost)***

22. The Petitioner has claimed exclusion of de-capitalisation of plant and machinery related items and temporary erection of Rs.1160.29 lakh in 2014-15 and Rs.2.12 lakh in 2015-16. In justification for the same, the Petitioner has submitted that as the capitalisation of expenditure against these items are not being allowed for the purpose of tariff under the 2014 Tariff Regulations, the de-capitalisation of the same has been claimed as exclusions. Since Regulation 14(4) of the 2014 Tariff Regulations provides that in case of de-capitalisation of assets, original cost of such assets shall be removed from the admitted capital cost of the generating station, the claim of the Petitioner under this head is not allowed.



### **De-capitalisation of Plant & Machinery items (not part of capital cost)**

23. The Petitioner has claimed exclusion of de-capitalisation of plant and machinery related items of Rs.2.64 lakh in 2015-16 and Rs.1.94 lakh in 2016-17. In justification for the same, the Petitioner has submitted that as the capitalisation of expenditure against these items are not being allowed for the purpose of tariff under the 2014 Tariff Regulations, the de-capitalisation of the same has been claimed as exclusions. Since, these de-capitalised plant and machinery related items do not form part of the allowed capital cost of the generating station, the exclusion claimed under this head is allowed.

### **Cost adjustment towards LD recovered**

24. The Petitioner has claimed exclusion of (-) Rs.0.15 lakh in 2018-19, towards LD recovered against items not allowed/ claimed for the purpose of tariff. Since, the LD recovered is in respect of MBOA's not allowed for the purpose of tariff, the claim of the Petitioner under this head is allowed.

25. Based on the above, the summary of exclusions allowed and disallowed 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>
Items not allowed in 2014-19	2679.35	292.28	2683.49	1128.98	735.03
Items not claimed as additional capitalisation in 2014-19 (net of de-capitalisation)	938.48	5384.61	8580.23	7288.89	6537.62
Contractor / package FERV	(-) 1.14	0.00	0.00	0.00	0.00
Capitalisation of capital spares	8749.68	0.00	0.00	0.00	0.00
Inter-unit transfer of assets	0.00	2127.74	(-) 1086.29	0.23	(-) 220.06
Reversal of liabilities	0.00	0.00	(-) 133.95	0.00	(-) 1.51
De-capitalisation of spares (not part of capital cost)	0.00	(-) 1383.40	0.00	(-) 43.84	(-) 852.53
De-capitalisation of MBOA's (not part of capital cost)	(-) 32.69	(-) 35.78	(-) 52.82	(-) 2.80	(-) 44.06
De-capitalisation of MBOA's (part of capital cost)	0.00	0.00	0.00	0.00	0.00
De-capitalisation of plant & machinery items including temporary erection (part of capital cost)	0.00	0.00	0.00	0.00	0.00



De-capitalisation of plant & machinery items (not part of capital cost)	0.00	(-) 2.64	(-) 1.94	0.00	0.00
Cost adjustment	0.00	0.00	0.00	0.00	(-) 0.15
<b>Total Exclusions allowed</b>	<b>12333.68</b>	<b>6382.80</b>	<b>9988.72</b>	<b>8371.47</b>	<b>6154.34</b>
Total Exclusions disallowed	(-) 1276.75	(-) 148.79	(-) 953.53	(-) 244.86	(-) 543.59

### Additional Capital Expenditure

26. The actual additional capital expenditure claimed by the Petitioner, on cash basis, is as under:

<i>(Rs. in lakh)</i>						
	Regulation	2014-15	2015-16	2016-17	2017-18	2018-19
Freehold land	14(3)(ii)	-	-	-	-	-
Control & Instrumentation	14(3)(iii) with 54	-	3867.97	-	3060.80	35.64
Decapitalisation corresponding to control & instrumentation		-	(-)928.90	-	(-)669.20	-
LT Switchgear	14(3)(iii) with 54	-	176.99	-	-	-
LED streetlights and fitting	14(3)(ii)	-	-	-	-	166.55
IP based CCTV system	14(3)(iii)	308.91	-	-	-	-
Decapitalisation of spares (part of capital cost)	14(4)	(-)2559.49	(-)101.33	(-)327.88	(-)619.85	(-)56.95
<b>Additional capital expenditure claimed for the generating station (on cash basis)</b>		<b>(-)2250.58</b>	<b>3014.74</b>	<b>(-)327.88</b>	<b>1771.75</b>	<b>145.25</b>
Add: Discharge of liabilities	14(3)(vi)	0.00	0.00	248.23	224.18	323.98
<b>Net Additional capital expenditure claimed including discharges for the generating station</b>		<b>(-)2250.58</b>	<b>3014.74</b>	<b>(-)79.65</b>	<b>1995.93</b>	<b>469.23</b>

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

### **Freehold land**

28. The Petitioner has claimed net of un-discharged liabilities of Rs.50.07 lakh in 2014-15, Rs.4.17 lakh in 2015-16, Rs.4.17 lakh in 2016-17, Rs.4.17 lakh in 2017-18





and Rs.4.17 lakh in 2018-19, towards freehold land for Plant and Office under Regulations 14(3)(ii) of 2014 Tariff Regulations. In justification for the same, the Petitioner has submitted that the interest portion paid/payable towards enhanced compensation for land, as per various court orders, was earlier not indicated in cost of land as accounting standards did not permit the same. It has however stated, that after the receipt of opinion of the Expert Advisory Committee of the Institute of Chartered Accountants of India and as opined, the interest paid/payable has been capitalised now as cost of land. Accordingly, the Petitioner has stated that the amount has been capitalized as interest, which would be payable for settlement of land compensation cases, pending in various courts. It has also stated that some cases are still pending in various courts. The Petitioner has also submitted the copy of the opinion received from the Expert Advisory Committee of Institute of Chartered Accountants of India, wherein, it has been opined as follows:

*“The interest portion on the enhanced compensation awarded by the court should be included as cost of the land to extent they relate to the period upto the date of court’s award. Any interest beyond the period should be treated as revenue expenditure and charged to profit and loss account from the year of incurrence. “*

29. In view of the above, the claim of the Petitioner towards freehold land, is allowed subject to the Petitioner’s submission of Court Orders as and when the same is discharged.

### **Control & Instrumentation**

30. The Petitioner has claimed additional capital expenditure of Rs.3867.97 lakh in 2015-16, Rs.3060.80 lakh in 2017-18 and Rs.35.64 lakh in 2018-19, towards upgradation of auto control and instrumentation system, on cash basis, under Regulation 14(3)(iii) with Regulation 54 of the 2014 Tariff Regulations. The Petitioner also claimed de-capitalisation of Rs.928.90 lakh in 2015-16 and Rs.669.20 lakh in 2017-18, towards control & instrumentation on their becoming unserviceable. In



justification for the same, Petitioner has submitted that the existing auto Control and Instrument System was of old design and was obsolete. It has stated that spare support from OEM or other third party was not available, also spares for the electronic module associated with the relays were not available and this resulted in jeopardizing availability of various control systems, which further led to non-functionality of High-level control loops resulting in unsafe operation of plant. The Petitioner has stated that under the above circumstances, it was necessary to provide a latest technology system encompassing functional replacement of affected system/equipment's indicated above. It has further submitted that the upgradation has helped in better connectivity with other systems, better monitoring of plant, enhanced reliability and availability and helping in reliable and safe operation of Units. The Petitioner has also submitted that the aforesaid items are C&I items and with time there has been fast technological upgradation in this field. It has submitted that items like Digital Control System is the automated intelligence of any thermal power generating station and in the absence of support from OEM and obsolescence of technology, systems were vulnerable to faults and there were frequent break downs and operating with these obsolete items was a threat to men and machine, therefore these works are also required for safe operation of Plant and machine. The Petitioner has pointed out that with great difficulty, it was able to manage the system for more than 20 years. And thereafter, as the situation was getting beyond the control of Petitioner, it was thought prudent to upgrade these systems to ensure reliable and safe operation. The Petitioner has added that these works could not have been avoided due to such uncontrollable factors and the Petitioner had to incur expenditure towards such up-gradation.

31. The Respondent TANGEDCO has submitted that these items claimed under exclusions in the original petition have been moved to additional capital expenses and



the act of Petitioner to include the items under exclusion, which have been noted as miscellaneous bought out items, as observed by the Commission under additional capital expenditure, is illegitimate and hence the Commission may reject all such expenses which are under exclusions that have now been claimed under additional capital expenses. It has further stated that the Petitioner is eligible for Special allowance from 2015-16 and the Petitioner has also claimed the benefits of Special Allowance from 2015-16 and hence, these expenses should be met out of the Special Allowance.

32. We have considered the matter. It is noticed that the Petitioner has opted for both Compensation allowance and Special allowance for the generating station. Special Allowance provided is for meeting the requirement of expenses including R&M beyond the useful life of the generating station, during the period 2014-19. Since, the Petitioner is allowed Special Allowance in terms of Regulation 16 of the 2014 Tariff Regulations 19 for meeting the requirement of expenses including R&M beyond the useful life of the generating station, the projected additional capital expenditure claimed by the Petitioner is not allowed. However, the corresponding de-capitalisation of control & instrumentation system has been considered.

### ***LT Switchgear***

33. The Petitioner has claimed an additional capital expenditure of Rs.176.99 lakh in 2015-16, towards Upgradation of LT switchgear system, on cash basis, under Regulation 14(3)(iii) with Regulation 54 of the 2014 Tariff Regulations. In justification for the same, the Petitioner has submitted that the original M/s. NGEF make 220 KV line circuit breaker became obsolete in technology and failure prone due to aging and obsolesce. It has stated that M/s. NGEF has closed its switchyard division and were unable to provide any technological support and under these circumstances, it was



necessary to provide a latest technology system through replacing old & obsolete system. The Petitioner has submitted that this upgradation of LT switchgears has helped in better availability and enhanced reliability of the machines. It has also submitted that the Commission had allowed such expenditure on account of obsolescence in past as well as in order dated 6.1.2022 in Petition No. 408/GT/2020 (truing up of tariff for 2014-19 and determination of tariff for the period 2019-24, in respect of Maithon Right Bank Thermal Power Project).

34. The matter has been considered. It is noticed that the Petitioner has opted for both Compensation allowance and Special allowance for the generating station. Special Allowance provided is for meeting the requirement of expenses including R&M beyond the useful life of the generating station, during the period 2014-19. Since, the Petitioner is allowed Special allowance in terms of Regulation 16 of the 2014 Tariff Regulations 19 for meeting the requirement of expenses including R&M beyond the useful life of the generating station, the projected additional capital expenditure claimed by the Petitioner is not allowed.

### **Assumed Deletion**

35. As per the consistent methodology adopted by the Commission, the expenditure on replacement of assets, if found justified, is allowed for the purpose of tariff provided that the capitalisation of the said asset, is followed by the de-capitalisation of the gross value of the old asset. However, in certain cases, where the de-capitalisation is proposed to be affected during the future year of capitalisation of the new asset, the decapitalization of the old asset for the purpose of tariff is shifted to the very same year in which the capitalization of the new asset is allowed. Such de-capitalization which is not a book entry in the year of capitalization is termed as



'Assumed Deletion'. Therefore, the methodology of arriving at the fair value of the decapitalised asset, i.e., escalation rate of 5% per annum from the COD has been considered in order to arrive at the gross value of the old asset under consideration as on COD as 100% and escalated it @5% per annum, till the year, during which additional capital expenditure is claimed against the replacement of the same. The amount claimed for the additional capital expenditure against the asset is multiplied by the derived ration from above values i.e., value in year of COD divided by value in capitalized year.

36. The Petitioner, in this petition, has claimed additional capital expenditure of Rs.176.99 lakh in 2015-16, towards Upgradation of LT switchgear system on replacement basis, but has not furnished the de-capitalized value of the old assets. Accordingly, the de-capitalized value of the assets/works has been calculated in terms of the abovementioned methodology. Accordingly, the 'Assumed deletions' allowed of the purpose of tariff is as under:

<i>(Rs. in lakh)</i>		
<b>Year of Claim</b>	<b>Head</b>	<b>Assumed Deletion</b>
2015-16	Upgradation of LT switchgear system	54.88

### ***LED Lighting***

37. The Petitioner has claimed additional capital expenditure of Rs.166.55 lakh in 2018-19 under Regulation 14(3)(ii) of 2014 Tariff Regulations. In justification for the same, 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, MOP, GOI vide letter dated 2.8.2017, has mandated the



Petitioner to replace all old bulbs with LED bulbs in all NTPC buildings including compound/street lighting occupied by Petitioner. The Petitioner has also submitted that since any directions of GOI are required to be implemented and has the force of Law, it took the work of replacing the old lights with LED lighting in the premises of the station compound/ building owned and operated by the Petitioner.

38. The Respondent TANGEDCO has submitted that since the Petitioner is claiming the Special Allowance and hence the expenditure under this head should be met out of the same.

39. We have considered the matter. In our view, the MOP, GOI letter is recommendatory in nature and cannot be construed as a 'change in law' event or compliance to an existing law. Moreover, the benefits of replacement of existing lighting system with LED lighting system, accrues to the Petitioner. It is pertinent to mention that the similar claim of the Petitioner in Petition No. 293/GT/2020 (truing-up of tariff of Simhadri SPTS, Stage-II the period 2014-19) was rejected by the Commission vide its order dated 11.1.2022 as under:

*"72. The submissions have been considered. It is noticed that the additional capital expenditure incurred towards installation of 'LED based light fittings' is in terms of the MoP, Gol letter dated 2.8.2017, which recommends the replacement of existing old bulbs with LED bulbs, 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 the compliance to an existing law. Moreover, the benefits of replacement of existing lighting system with LED lighting system, accrues to the Petitioner. In view of this, the additional capital expenditure claimed on account of installation of LED lighting system is disallowed. However, the de-capitalisation claimed by the Petitioner towards de-capitalisation of old lights (plant & m/c - part of capital cost) is allowed in terms of Regulation 14(4) of the 2014 Tariff Regulations. "*

40. In view of the above, the additional capital expenditure claimed on account of installation of LED lighting system is not allowed.



### ***IP based CCTV system***

41. The Petitioner has claimed additional capital expenditure of Rs.308.91 lakh inclusive of IDC amounting to Rs. 13.64 lakh in 2014-15 under Regulation 14(3)(iii) of 2014 Tariff Regulations. In justification for the same, the Petitioner has submitted that the remote visual monitoring of unmanned locations like Mill area, Cable Gallery, CW/CT fan area, HT/LT Switchgear area, etc is not possible continuously; timely detection of fire, cable burning, theft of locally mounted instruments, valves, solenoids, etc is also not possible. Further movement of unauthorized personnel or fire caused by smouldering coal or spilled-out oil, burning of cables due to short circuit, etc can be monitored and timely action can be taken by covering these areas through CCTV system. The Petitioner further submitted that as the current capitalization corresponds to the activity on account of need for higher security and safety of the Station, it is requested to allow the capitalization of the same under Regulation 14(3)(iii) of the 2014 Tariff Regulations.

42. The submissions have been considered. The expenditure incurred by the Petitioner has been claimed under Regulation 14(3)(iii) of the 2014 Tariff Regulations, which is for the capital expenditure to be incurred on account of need for high security and safety of the plant as advised or directed by Governmental or statutory authorities concerning the safety and security of the generating station. However, upon careful consideration, we find no explicit direction or advice from any Governmental or statutory authorities concerning the safety and security of the generating station. In the light of this, the projected additional capital expenditure claimed by the Petitioner is not allowed.





### **Decapitalisation of Spares**

43. The Petitioner has claimed de-capitalisation of capital spares forming part of the admitted capital cost of Rs.2559.49 lakh in 2014-15, Rs.101.33 lakh in 2015-16, Rs.327.88 lakh in 2016-17, Rs.619.85 lakh in 2017-18 and Rs.56.95 lakh in 2018-19, under Regulation 14(4) of the 2014 Tariff Regulation. Regulation 14(4) of the 2014 Tariff Regulations provides that in case of de-capitalisation of assets, the original cost of such asset shall be removed from the admitted capital cost of the generating station. Accordingly, the de-capitalisation claimed under this head is allowed for the purpose of tariff.

### **Discharge of liabilities**

44. The discharges of liabilities claimed by the Petitioner is as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Out of liabilities deducted as on 1.4.2009	-	-	-	-	-
Other liabilities	-	-	248.23	224.18	323.98
<b>Total</b>	-	-	<b>248.23</b>	<b>224.18</b>	<b>323.98</b>

45. The discharges as claimed above, corresponds to additional capital expenditure which has not been allowed for the purpose of tariff, accordingly, these discharges are not allowed for the purpose of tariff. 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	78.80	78.80	78.80	78.80	78.80
B	Addition during the year	0.00	0.00	0.00	0.00	0.00
C	Discharges during the year	0.00	0.00	0.00	0.00	0.00
D	Reversal during the year	0.00	0.00	0.00	0.00	0.00
E	Closing liability (A+B-C-D)	78.80	78.80	78.80	78.80	* 78.80
<b>2)</b>	<b>Other liabilities</b>					
F	Opening liabilities	0	50.07	54.24	58.41	62.58
G	Addition during the year	50.07	4.17	4.17	4.17	4.17
H	Discharges during the year	0.00	0.00	0.00	0.00	0.00



I	Reversal during the year	0.00	0.00	0.00	0.00	0.00
J	Closing liability (F+G-H-I)	50.07	54.24	58.41	62.58	66.76
<b>3)</b>	<b>Total closing liabilities (E+J)</b>	<b>128.87</b>	<b>133.04</b>	<b>137.22</b>	<b>141.39</b>	<b>145.56</b>

\* The corresponding balance repayment and depreciation to be adjusted, as on 31.3.2019, based on actual discharge/ reversal of this liability balance of Rs.78.80 lakh is Rs.44.32 lakh and Rs.70.88 lakh, respectively.

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

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Freehold land	0.00	0.00	0.00	0.00	0.00
Control & Instrumentation	0.00	0.00	0.00	0.00	0.00
Decapitalisation corresponding to control & instrumentation	0.00	(-)928.90	0.00	(-)669.20	0.00
LT Switchgear	0.00	0.00	0.00	0.00	0.00
LED streetlights and fitting	0.00	0.00	0.00	0.00	0.00
IP based CCTV system	0.00	(-)54.88	0.00	0.00	0.00
Decapitalisation of Spares (Part of Capital Cost)	(-)2559.49	(-)101.33	(-)327.88	(-)619.85	(-)56.95
<b>Additional capital expenditure allowed (before adjustment for exclusions not allowed and discharge of liabilities)</b>	<b>(-)2559.49</b>	<b>(-)1085.11</b>	<b>(-)327.88</b>	<b>(-)1289.05</b>	<b>(-)56.95</b>
Exclusion not allowed	(-)1276.75	(-)148.79	(-)953.53	(-)244.86	(-)543.59
<b>Additional capital expenditure allowed (before discharge of liabilities)</b>	<b>(-)3836.23</b>	<b>(-)1233.90</b>	<b>(-)1281.41</b>	<b>(-)1533.91</b>	<b>(-)600.54</b>
Add: Discharge of liabilities	0.00	0.00	0.00	0.00	0.00
<b>Net Additional capital expenditure allowed (including discharges of liabilities)</b>	<b>(-)3836.23</b>	<b>(-)1233.90</b>	<b>(-)1281.41</b>	<b>(-)1533.91</b>	<b>(-)600.54</b>

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

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

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	230569.84	226733.61	225499.71	224218.30	222684.39
Add: Additional capital expenditure	(-)3836.24	(-)1233.90	(-)1281.41	(-)1533.91	(-)600.54
<b>Closing capital cost</b>	<b>226733.61</b>	<b>225499.71</b>	<b>224218.30</b>	<b>222684.39</b>	<b>222083.85</b>
Average capital cost	228651.72	226116.66	224859.00	223451.34	222384.12



## **Debt-Equity Ratio**

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

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

*Provided that: i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:*

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

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

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

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

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

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

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

49. The gross normative loan and equity amounting to Rs.115984.97 lakh and Rs.114584.88 lakh, respectively, as on 1.4.2014, as considered in order dated 24.1.2017, has been considered as gross normative loan and equity as on 1.4.2014. Further, the additional capital expenditure approved above has been allocated to debt and equity in the debt-equity ratio of 70:30. Further also, for the assets de-capitalised



during the period 2014-19, debt-equity ratio of 50:50 has been considered, as these assets were originally allocated to debt and equity, in the ratio of 50:50, in the respective tariff orders. Accordingly, the details of debt-equity ratio in respect of the generating station, as on 1.4.2014 and as on 31.3.2019, is as under:

<i>(Rs. in lakh)</i>								
	Capital cost as on 1.4.2014	(%)	Additional capital expenditure	(%)	De-capitalization	(%)	Total cost as on 31.3.2019	(%)
<b>Debt</b>	115984.97	50.30%	0.00	70.00%	4243.00	50.00%	111741.97	50.32%
<b>Equity</b>	114584.88	49.70%	0.00	30.00%	4243.00	50.00%	110341.88	49.68%
<b>Total</b>	<b>230569.84</b>	<b>100.00%</b>	<b>0.00</b>	<b>100.00%</b>	<b>8485.99</b>	<b>100.00%</b>	<b>222083.85</b>	<b>100.00%</b>

### Return on Equity

50. Regulation 24 of the 2014 Tariff Regulation provides as under:

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

*(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:*

*Provided that:*

- i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:*
- ii) the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:*
- iii) additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:*
- iv) the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:*
- v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:*
- vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometre.”*

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



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

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

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

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

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

52. The Petitioner has claimed tariff considering Rate of Return on Equity (ROE) of 19.6106% in 2014-15, 19.7056% in 2015-18 and 19.7575% 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 to 19.610% for 2014-15, 19.705% for 2015-18 and 19.758% for 2018-19. Accordingly, ROE has been worked out 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>
Notional Equity- Opening	114584.88	112666.76	112049.81	111409.10	110642.15
Add: Addition of Equity due to additional capital expenditure	(-)1918.12	(-)616.95	(-)640.71	(-)766.96	(-)300.27
Normative Equity – Closing	112666.76	112049.81	111409.10	110642.15	110341.88
Average Normative Equity	113625.82	112358.28	111729.46	111025.63	110492.01



Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Effective Tax Rate for respective years	20.961%	21.342%	21.342%	21.342%	21.549%
Rate of Return on Equity (Pre-tax)	19.610%	19.705%	19.705%	19.705%	19.758%
<b>Return on Equity (Pre-tax) - (annualised)</b>	<b>22282.02</b>	<b>22140.20</b>	<b>22016.29</b>	<b>21877.60</b>	<b>21831.01</b>

### Interest on loan

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

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

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

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

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

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

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

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

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

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

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

*(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute: Provided that the beneficiaries or the long term transmission customers /DICs shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan.”*





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

- i) The gross normative loan amounting to Rs.115984.97 lakh as considered in order dated 24.1.2017 in Petition No. 292/GT/2014, has been retained as on 1.4.2014.
- ii) Cumulative repayment of Rs.113695.86 lakh, as considered in order dated 24.1.2017 in Petition No. 292/GT/2014, has been retained as on 1.4.2014.
- iii) Accordingly, the net normative opening loan as on 1.4.2014 works out to Rs.2289.12 lakh.
- iv) Addition to normative loan on account of additional capital expenditure approved above has been considered.
- v) Depreciation allowed has been considered as repayment of normative loan during the respective year of the period 2014-19. Further, the repayments have been adjusted for de-capitalisation of assets considered for the purpose of tariff.
- vi) The Petitioner has claimed interest on loan considering weighted average rate of interest (WAROI) of 9.9242% in 2014-15, 9.3149% in 2015-16, 8.8910% in 2016-17, 8.1281% in 2017-18 and 8.2358% in 2018-19. The WAROI, has been calculated by applying the actual loan portfolio existing as on 1.4.2014, along with subsequent additions during the period 2014-19 for the generating station, the same has been considered for the purpose of tariff.

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

		<i>(Rs. in lakh)</i>				
		2014-15	2015-16	2016-17	2017-18	2018-19
A	Gross opening loan	115984.97	114066.85	113449.90	112809.19	112042.24
B	Cumulative repayment of loan upto previous year	113695.85	111777.73	111975.23	111334.52	110567.57
C	Net Loan Opening (A-B)	2289.12	2289.12	1474.67	1474.67	1474.67
D	Addition due to additional capital expenditure	(-)1918.12	(-)616.95	(-)640.71	(-)766.96	(-)300.27
E	Repayment of loan during the year	0.00	814.45	0.00	0.00	285.01
F	Repayment adjustment on account of de-capitalisation	1918.12	616.95	640.71	766.96	300.27
G	Repayment adjustment on account of discharges/reversals corresponding to un-discharged liabilities deducted as on 1.4.2009	0.00	0.00	0.00	0.00	0.00
H	Net Repayment of loan during the year (E-F+G)	(-)1918.12	197.50	(-)640.71	(-)766.96	(-)15.25
I	Net Loan Closing (C+D-H)	2289.12	1474.67	1474.67	1474.67	1189.66
J	Average Loan [(C+I)/2]	2289.12	1881.90	1474.67	1474.67	1332.16
K	WAROI	9.9242%	9.3149%	8.8910%	8.1281%	8.2358%
L	<b>Interest on Loan (J x K)</b>	<b>227.18</b>	<b>175.30</b>	<b>131.11</b>	<b>119.86</b>	<b>109.71</b>





## **Depreciation**

56. Regulation 27 of the 2014 Tariff Regulations provides as under:

*“27. Depreciation: (1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof.*

*Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.*

*(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.*

*(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:*

*Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:*

*Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:*

*Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.*

*(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.*

*(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-II to these regulations for the assets of the generating station and transmission system: Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.*

*(6) In case of the existing projects, the balance depreciable value as on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to 31.3.2014 from the gross depreciable value of the assets.*

*(7) The generating company or the transmission licensee, as the case may be, shall submit the details of proposed capital expenditure during the fag end of the project (five years before the useful life) along with justification and proposed life extension. The*



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

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

57. The cumulative depreciation amounting to Rs.203766.01 lakh, as considered in order dated 24.1.2017, has been considered as on 1.4.2014. The value of freehold land included in the average capital cost has been adjusted while calculating depreciable value for the purpose of tariff. Since, the useful life of the generating station has already elapsed and balance useful life is ‘nil’, the remaining depreciable value during each year of the period 2014-19, has been allowed as depreciation during each year. Further, proportionate adjustment has been made to the cumulative depreciation, on account of de-capitalisation of assets considered during the respective years of the period 2014-19. Necessary calculations in support of depreciation are as under:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Average capital cost (A)	228651.72	226116.66	224859.00	223451.34	222384.12
Value of freehold land included above (B)	2641.27	2641.27	2641.27	2641.27	2641.27
Aggregated depreciable Value [C = (A-B) x 90%]	203409.41	201127.85	199995.96	198729.06	197768.56
Remaining depreciable value at the beginning of the year (D = C - 'K' of previous year)	0.00	814.45	0.00	0.00	285.01
Balance useful life at the beginning of the year (E)	0.00	0.00	0.00	0.00	0.00
Weighted average rate of depreciation (F)	0.00	0.00	0.00	0.00	0.00
<b>Depreciation during the year (G = D)</b>	<b>0.00</b>	<b>814.45</b>	<b>0.00</b>	<b>0.00</b>	<b>285.01</b>
Cumulative depreciation at the end of the year, before adjustment of de-capitalisation adjustment (H = G + 'K' of previous year)	203766.01	201127.85	200017.34	198864.07	197768.56
Cumulative depreciation adjustment on account of de-capitalisation (I)	3452.61	1110.51	1153.27	1380.52	540.48
Cumulative Depreciation adjustment on a/c of un-discharged liabilities deducted as on 1.4.2009 (J)	0.00	0.00	0.00	0.00	0.00
<b>Cumulative depreciation, at the end of the year (K = H - I + J)</b>	<b>200313.40</b>	<b>200017.34</b>	<b>198864.07</b>	<b>197483.55</b>	<b>197228.08</b>



## **Compensation Allowance**

58. Regulation 17 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 the 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

59. The Commission in its order dated 24.1.2017, had allowed compensation allowance of Rs.1000.00 lakh in 2014-15 and Rs.500.00 lakh in 2015-16, for the generating station. The same has been considered by the Petitioner in the present Petition and is as per the Regulation 17 as quoted above. Accordingly, the following Compensation Allowance is allowed for the purpose of revision of tariff:

<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>
1000.00	500.00	0.00	0.00	0.00

## **Special Allowance**

60. Regulation 16 of the 2014 Tariff Regulations provides for Special Allowance for Coal-based/Lignite fired Thermal Generating stations as under:

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

*Provided that such option shall not be available for a generating station or unit for which renovation and modernisation has been undertaken and the expenditure has been admitted by the Commission before commencement of these regulations, or for*



a generating station or unit which is in a depleted condition or operating under relaxed operational and performance norms.

(2) The special Allowance shall be @Rs. 7.5 lakh/MW/year for the year 2014-15 and thereafter escalated @ 6.35 % every year during the tariff period 2014-15 to 2018-19, unit-wise from the next financial year from the respective date of completion of useful life with reference to the date of commercial operation of the respective unit of generating station:

Provided that in respect of a unit in commercial operation for more than 25 years as on 1.4.2014, this allowance shall be admissible from the year 2014-15:

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

(3) In the event of granting special allowance by the Commission, the expenditure incurred or 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.”

61. The Commission in its order dated 24.1.2017, had allowed Special allowance for the generating station as per Regulation 16(2) of 2014 Tariff Regulations. The same has been claimed and allowed for Stage-I and II of the generating station, as under:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
7735.54	12214.87	17231.89	18326.11	19489.82

### **O&M Expenses**

62. The Commission vide order dated 24.1.2017 had allowed O & M expenses as under:

<i>(Rs. in lakh)</i>					
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M expenses allowed under Regulation 29(1)(a)	38340.00	40755.00	43320.00	46050.00	48951.00
Water Charges allowed under Regulation 29(2)	1372.23	1372.23	1372.23	1372.23	1372.23
Capital spares	0.00	0.00	0.00	0.00	0.00
<b>Total O&amp;M Expenses</b>	<b>39712.23</b>	<b>42127.23</b>	<b>44692.23</b>	<b>47422.23</b>	<b>50323.23</b>

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



(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
O&M expenses under Regulation 29(1)(a) of the 2014 Tariff Regulations	38340.00	40755.00	43320.00	46050.00	48951.00
<b>O&amp;M expenses under Regulation 29(2) of the 2014 Tariff Regulations:</b>					
- Water Charges	1474.25	1559.58	2262.76	1588.13	1863.63
- Capital Spares consumed	2559.48	1484.73	327.87	663.69	909.47
<b>Sub-total O&amp;M Expenses</b>	<b>42373.73</b>	<b>43799.31</b>	<b>45910.63</b>	<b>48301.82</b>	<b>51724.10</b>
Impact of pay revision	0.00	91.74	5157.91	5745.89	6340.33
Impact of GST	0.00	0.00	0.00	377.87	533.59
<b>Total O&amp;M Expenses</b>	<b>42373.73</b>	<b>43891.05</b>	<b>51068.54</b>	<b>54425.58</b>	<b>58598.02</b>

64. As the normative O&M expenses claimed by the Petitioner is in terms of Regulation 29(1)(a) of the 2014 Tariff Regulations, and is the same as allowed by order dated 24.1.2017 in Petition No. 292/GT/2014. Accordingly, the same is allowed.

### Water Charges

65. Regulation 29(2) of the 2014 Tariff Regulations provide as under:

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

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

66. In terms of the above regulation, water charges are to be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. The Commission vide order dated 24.1.2017, had allowed the actual water charges incurred during the year 2013-14 for the period 2014-19, without any year to year escalation.

67. The Petitioner has claimed water charges based on actual water consumption of the generating station as per details, below:

(Rs. in lakh)

	Units	2014-15	2015-16	2016-17	2017-18	2018-19
Type of cooling tower	-	IDCT				
Type of cooling water system	-	Open Cycle				



Water allocation/contracted	Mcft	6500				
Actual water drawl	Mcft	2814.22	2013.63	2569.25	1861.73	1981.97
Rate of water charges	Rs /Mcft	28030.00	53922.80	59168.38	64281.43	65090.96
Total water charges paid (for whole generating station)	Rs. lakh	1825.26	1930.91	2801.51	1966.25	2307.35
<b>Water charges paid for Stage-I and II claimed in Petition</b>	Rs. lakh	1474.25	1559.58	2262.76	1588.13	1863.63

68. It is observed that the Petitioner has claimed water charges based on the actual water drawl and rates as notified by Irrigation & CAD Department Government of Telangana State.

69. In compliance to the direction of the Commission vide ROP of the hearing dated 13.8.2020, in Petition No. 220/GT/2020, (in case of Ramagundam Stage-III generating station), the Petitioner vide its affidavit dated 4.11.2020, has submitted the year-wise computation of the water charges of the entire generating station. The details including the (i) actual quantity of water consumed, (ii) rate (in Rs./M<sup>3</sup>) charged by the State authorities, and (iii) cost of electricity consumed for pumping water from Yellampally project to NTPC reservoir forming part of the water charges for the Ramagundam Stage-I & II of the generating station furnished by the Petitioner is as under:

*(Rs. in lakh)*

Year	Actual quantity of water consumed (Cubic meters)	Rate (Rs. / M3)	Cost of water	Cost of electricity consumed for pumping water	Total
2014-15	60977885	2.363	637.13	803.50	1440.63
2015-16	42415922	3.520	876.99	615.87	1492.86
2016-17	55347427	3.959	1227.84	963.56	2191.40
2017-18	38608987	3.916	966.60	545.23	1511.83
2018-19	42560969	4.230	1041.99	758.13	1800.12

70. In view of the above and in line with the order dated 25.9.2021 in Petition No. 220/GT/2020, it is observed that water charges claimed as per computation submitted by the Petitioner vide affidavit dated 4.11.2020 are lower than the year-wise claim of





water charges, duly certified by Auditor. Accordingly, the water charges claimed by the Petitioner and allowed for the period 2014-19 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>
Actual water charges claimed	1474.25	1559.58	2262.76	1588.13	1863.63
Actual water charges allowed	1440.63	1492.86	2191.40	1511.83	1800.12

### **Capital Spares**

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

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

72. In terms of the above proviso, capital spares consumed are admissible separately, at the time of truing up of tariff, based on the details furnished by the Petitioner. The capital spares claimed by the Petitioner for the 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>
	2559.48	1484.73	327.87	663.69	909.47

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

	<i>(Rs. in lakh)</i>				
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Capital spares (forming part of allowed capital cost)	2559.48	101.33	327.87	619.85	56.95
Capital spares (not forming part of allowed capital cost)	0.00	1383.40	0.00	43.84	852.53
<b>Total capital spares consumed claimed</b>	<b>2559.48</b>	<b>1484.73</b>	<b>327.87</b>	<b>663.69</b>	<b>909.47</b>

74. It is evident from the above that the capital spares claimed comprises of two categories i.e. (i) spares which form part of the capital cost of the project and (ii) spares





which do not form part of the capital cost of the project. In respect of capital spares which form part of the capital cost of the project, the Petitioner has been recovering tariff since their procurement and, therefore, the same cannot be allowed as part of the additional O&M expenses. Accordingly, only those capital spares which do not form part of the capital cost of the project are being considered in this order. 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.1.00 lakh, on prudence check of the details furnished by the Petitioner in Form-17 of the Petition, has been considered for the purpose of tariff. Based on this, the details of capital spares consumption allowed for the period 2014-19, is summarized as under:

*(Rs. in lakh)*

	2014-15	2015-16	2016-17	2017-18	2018-19
Total capital spares consumed claimed	2559.48	1484.73	327.87	663.69	909.47
Total capital spares consumed (not part of capital cost)	0.00	1383.40	0.00	43.84	852.53
Less: Value of capital spares below Rs.1.00 lakh disallowed on individual basis	0.00	10.98	0.00	0.00	27.04
<b>Net total value of capital spares considered</b>	0.00	1372.42	0.00	43.84	825.49

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



been deducted from the net total value of capital spares considered during the period 2014-19. Accordingly, net capital spares allowed is summarized as under:

	<i>(Rs. in lakh)</i>				
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Net total value of capital spares considered	0.00	1372.42	0.00	43.84	825.49
Less: Salvage value @ 10%	0.00	137.24	0.00	4.38	82.55
<b>Net capital spares allowed</b>	<b>0.00</b>	<b>1235.17</b>	<b>0.00</b>	<b>39.46</b>	<b>742.94</b>

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

76. The Petitioner has claimed additional O&M expenses of Rs.377.87 lakh in 2017-18 and Rs.533.59 lakh in 2018-19 on account of payment of Goods and Service Tax (GST). The Respondent TANGEDCO and KSEB have submitted that the Petitioner has not submitted the details of the calculation of the amount claimed towards the impact of GST along with Auditor's certificate supporting the additional liability. In reply to the same, the Petitioner has submitted that the details of the calculation towards impact of GST, duly certified by the auditor, has been submitted vide additional submission dated 15.7.2021 duly certified by the auditor.

77. The submissions of the parties have been considered. 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 paragraph 49.6 of the SOR (Statement of Objects and Reasons) issued with the 2014 Tariff Regulations, which is extracted hereunder:

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

78. Further, the escalation rates considered in the normative O&M expenses were finalized only after the consideration of the variations during the past five years, which



also, takes care of any variation in taxes also. It may be noted that in case of reduction of taxes or duties, the Petitioner is not required to reimburse any taxes in tariff. As such, additional O&M expenses on account of GST are not admissible separately.

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

79. The Petitioner has submitted that the Commission, while specifying the 2014 Tariff Regulations applicable for the period 2014-19, had taken note in SOR to the said regulations that any increase in the employee expenses, on account of pay revision shall be considered appropriately, on case-to-case basis, balancing the interest of generating stations and consumers. The Petitioner has, therefore, claimed additional O&M expenses of Rs.91.74 lakh in 2015-16, Rs.5157.91 lakh in 2016-17, Rs.5745.89 lakh in 2017-18 and Rs.6340.33 lakh in 2018-19, towards impact of wage revision of employees of CISF and Kendriya Vidyalaya (KV) from 1.1.2016 and the employees of the Petitioner posted in the generating station with effect from 1.1.2017. In this regard the Petitioner vide affidavit dated 30.6.2021 has submitted the following:

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

80. We have examined the submissions and the documents available on record. As stated, the Petitioner has claimed total amount of Rs.17335.87 lakh as impact of wage revision of employees of CISF and Kendriya Vidyalaya staff from 1.1.2016 and for employees of the Petitioner posted at the generating station with effect from 1.1.2017. However, it is noticed that the said claim of the Petitioner includes the impact on account of the payment of additional PRP/ex-gratia to its employees, consequent upon wage revision. As such, as per consistent methodology adopted by the



Commission of excluding PRP/ex-gratia from actual O&M expenses of past data for finalisation of O&M norms for various tariff settings, the additional PRP/ex-gratia, paid as a result of wage revision impact has been excluded from the wage revision impact claimed by the Petitioner, in the present case. Accordingly, the claim of the Petitioner in respect of wage revision impact stand reduced to Rs.15414.69 lakh with the following year-wise break up.

	<i>(Rs. in lakh)</i>					
	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Wage revision impact claimed (excluding PRP/ex-gratia)	0.00	91.74	5157.91	5328.37	4836.67	15414.69

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

The relevant extract of the SOR is extracted under:

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

*33.2 The draft Regulations provided for a normative percentage of employee cost to total O&M expenses for generating stations and transmission system with an intention to provide a ceiling limit so that the same should not lead to any exorbitant increase in the O&M expenses resulting in spike in tariff. The Commission shall examine the increase in employee expenses on case to case basis and shall consider the same if found appropriate, to ensure that overall impact at the macro level is sustainable and*



*thoroughly justified. Accordingly, clause 29(4) proposed in the draft Regulations has been deleted. The impact of wage revision shall only be given after seeing impact of one full year and if it is found that O&M norms provided under Regulations are inadequate/insufficient to cover all justifiable O&M expenses for the particular year including employee expenses, then balance amount may be considered for reimbursement.”*

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

However, in this respect the following facts needs consideration:

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

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

84. The matter has been examined. The Petitioner has furnished the detailed breakup of the actual O&M expenses incurred during the period 2014-19, for combined stages i.e. Stage-I, II and III of the generating station. It is noticed that the total O&M expenses incurred for generating station is more than the normative O&M expenses recovered during each year of the period 2014-19. The impact of wage revision/ pay revision could not be factored by the Commission while framing the O&M expense



norms under the 2014-19 Tariff Regulations since the pay/ wage revision came into effect from 1.1.2016 (CISF & KV employees) and 1.1.2017 (employees of the Petitioner) respectively. As such, in terms of SOR to the 2014 Tariff Regulations, the approach followed for arriving at the allowable impact of pay revision is given in the subsequent paragraphs.

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

86. The details as furnished by the Petitioner for actual O&M expenses incurred for the generating station for the period 2014-19, and the wage revision impact (excluding PRP and ex-gratia) for the generating station (Stage-I&II- 2100 MW) are as under:



(Rs. in lakh)

Year	Actual O&M expenses for whole Ramagundam STPS, excluding water charges & capital spares	Wage revision impact claimed for the generating station i.e., Ramagundam Stage I&II (2100 MW)
2014-15	57985.16	0.00
2015-16	58580.63	91.74
2016-17	64581.07	5157.91
2017-18	69293.16	5328.37
2018-19	70584.11	4836.67
<b>Total</b>		<b>15414.69</b>

87. As a first step, the expenditure against sub-heads of O&M expenses as indicated above, have been excluded from the actual O&M expenses incurred to arrive at the actual O&M expenses (normalized) for the combined stages of the generating station (Stage I, II and III 2600 MW). Accordingly, the comparison of the normative O&M expenses versus the actual O&M expenses (normalised) along with the wage revision impact claimed by the Petitioner for the generating station i.e. Ramagundam STPS, Stage-I & II (2100 MW) for the period 2015-19 is as under:

(Rs. in lakh)

	2015-16	2016-17	2017-18	2018-19	Total
Actual O&M expenses (normalized) for the combined stages of the generating station (Stage I to Stage III from 1.4.2015 to 31.3.2019 for 2600 MW) – (a)	52652.40	60387.91	60549.99	63592.34	237182.63
Actual O&M expenses (normalized) for the generating station i.e., Ramagundam STPS, Stage-I&II (2100 MW) pro-rated based on capacity – (b)	42526.94	48774.85	48905.76	51363.04	191570.59
Normative O&M expenses for Ramagundam STPS, Stage-I&II as per Regulation 29(1) of the 2014 Tariff Regulations – (c)	40755.00	43320.00	46050.00	48951.00	179076.00
Under/(Excess) recovery for the generating station (d)=(b)-(c)	1771.94	5454.85	2855.76	2412.04	12494.59
Wage revision impact claimed (excluding PRP/ex-gratia)	91.74	5157.91	5328.37	4836.67	15414.69

88. It is observed that for wage revision impact during the period 2015-19, the actual O&M expenses (normalized) is in excess of the normative O&M expenses and under-recovery is to the tune of Rs. 12494.59 lakh. The wage revision impact





(excluding PRP/incentive etc.) is of Rs. 15414.69. As such, in terms of methodology described above, the wage revision impact (excluding PRP/ex-gratia etc.) is allowed to the extent of Rs. 12494.59 lakh for Stage-I & Stage-II of Ramagundam generating station.

89. Accordingly, the total O&M expenses allowed to the generating station 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>
Normative O&M expenses claimed under Regulation 29(1)(a) of the 2014 Tariff Regulations (a)	38340.00	40755.00	43320.00	46050.00	48951.00
<b>Normative O&amp;M expenses allowed under Regulation 29(1)(a) of the 2014 Tariff Regulations (b)</b>	<b>38340.00</b>	<b>40755.00</b>	<b>43320.00</b>	<b>46050.00</b>	<b>48951.00</b>
Water Charges claimed under Regulation 29(2) of the 2014 Tariff Regulations (c)	1474.25	1559.58	2262.76	1588.13	1863.63
<b>Water Charges allowed under Regulation 29(2) of the 2014 Tariff Regulations (d)</b>	<b>1440.63</b>	<b>1492.86</b>	<b>2191.40</b>	<b>1511.83</b>	<b>1800.12</b>
Capital Spares consumed claimed under Regulation 29(2) of the 2014 Tariff Regulations (e)	2559.48	1484.73	327.87	663.69	909.47
<b>Capital Spares consumed allowed under Regulation 29(2) of the 2014 Tariff Regulations (f)</b>	<b>0.00</b>	<b>1235.17</b>	<b>0.00</b>	<b>39.46</b>	<b>742.94</b>
Total O&M expenses claimed under Regulation 29 of the 2014 Tariff Regulations (a + c + e)	42373.73	43799.31	45910.63	48301.82	51724.10
<b>Total O&amp;M expenses allowed under Regulation 29 of the 2014 Tariff Regulations (b + d + f)</b>	<b>39780.63</b>	<b>43483.03</b>	<b>45511.40</b>	<b>47601.29</b>	<b>51494.06</b>
Impact of Wage revision claimed		91.74	5157.91	5745.89	6340.33
<b>Impact of Wage revision allowed</b>			<b>12494.59</b>		
Impact of GST claimed	0.00	0.00	0.00	377.87	533.59
<b>Impact of GST allowed</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

### Operational Norms

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



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

91. In terms of Regulation 36(A)(a) of the 2014 Tariff Regulations, the NAPAF of 83% for the period 2014-17 and 85% for the period 2017-19 is considered.

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

92. In terms of Regulation 36(C)(a)(i) of the 2014 Tariff Regulations, the Gross Station Heat Rate (GSHR) of 2396.43 kCal/kWh as allowed vide order dated 24.1.2017, is considered.

**(c) Specific Oil Consumption**

93. In terms of Regulation 36(D)(a) of the 2014 Tariff Regulations, the secondary fuel oil consumption of 0.50 ml/kWh as allowed in order dated 24.1.2017, is considered.

**(d) Auxiliary Power Consumption**

94. In terms of the Regulation 36(E)(a) of the 2014 Tariff Regulations, the auxiliary power consumption of 6.68% as allowed in order dated 24.1.2017, is considered.

**Interest on Working Capital**

95. Regulation 28 of the 2014 Tariff Regulations provides as under:

*“28. Interest on Working Capital:*

*(1) The working capital shall cover:*

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

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

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

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

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

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



(vi) Operation and maintenance expenses for one month.

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

(3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof as the case may be is declared under commercial operation whichever is later.

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

### **Fuel Cost and Energy Charges in Working Capital**

96. Regulation 28(2) of the 2014 Tariff Regulations provides that the computation of cost of fuel, as part of Interest on Working Capital (IWC) is to be based on the landed price and GCV of fuel as per actuals, for the three months preceding the first month for which the tariff is to be determined. Regulation 30(6)(a) of the 2014 Tariff Regulations provides as under:

*“30. Computation and Payment of Capacity Charge and Energy Charge for Thermal Generating Stations:*

*(6) Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal place in accordance with the following formula:*

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

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

*Where,*

*AUX = Normative auxiliary energy consumption in percentage.*

*CVPF = Gross calorific value of primary fuel as received, in kCal per kg, per litre or per standard cubic metre, as applicable.*

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

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

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

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

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

*LPPF = Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable during the month.*

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

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



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

98. 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.”*

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

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

101. In Petition No. 292/GT/2014 filed by the Petitioner for determination of tariff of this generating station for the period 2014-19, the Petitioner had furnished GCV of coal on 'as billed' but not 'as received' basis for the preceding 3 months i.e. for January 2014, February 2014 and March 2014 that were required for determination of Interest on Working Capital (IWC). Therefore, the Commission vide its order dated 24.1.2017 in Petition No. 292/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.

102. As per the Commission's order dated 25.1.2016 in Petition No. 283/GT/2014, the Petitioner, in Form-13F, has considered the average GCV of coal on "as received basis" i.e., from wagon top for the period from October 2016 to March 2019 for the purpose of computation of working capital for the period 2014-19. The Petitioner has further submitted that CEA vide letter dated 17.10.2017 has opined that a margin of



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

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal towards stock (15 days)	9023.57	12393.46	12393.46	12393.46	12692.10
Cost of Coal towards Generation (30 days)	18047.13	24786.92	24786.92	24786.92	25384.19
Cost of Secondary fuel oil (2 months)	533.32	559.02	560.55	559.02	572.49

103. The Petitioner has claimed Energy Charge Rate (ECR) ex-bus of 214.00 paise/kWh for the generating station based on GCV and price of fuel (coal and secondary fuel oil) as above.

104. The Petitioner, has submitted the additional details on the GCV on ‘as received’ basis which is sought by the Commission in other similar matters for the months of January, 2014 to March, 2014 which was uploaded on the website of the Petitioner and shared with the beneficiaries. The Petitioner vide affidavit dated 30.6.2021 has submitted that though the computation of energy charges moved from ‘as fired’ basis to ‘as received’ basis with effect from 1.4.2014 in terms of Regulation 30(6) of the 2014



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

Sl. No.	Month	Weighted Average GCV of coal received (EM basis) (kcal/kg) (A)	Total Moisture TM) (in %) (B)	Equilibrated Moisture (EM) (in %) (C)	Weighted Average GCV of coal received (TM basis) (kcal/kg) $D=A*(1-B\%)/(1-C\%)$
1	January 2014	3987	13.54	7.15	3712
2	February 2014	3939	12.17	7.97	3759
3	March 2014	4017	12.34	7.09	3790
	<b>Average</b>				<b>3754</b>

105. The submissions have been considered. As stated in paragraph 101 above, the Petitioner in Form-13F, has considered the average GCV of coal on "as received basis" i.e., from wagon top for the period from October 2016 to Mach 2019 for the purpose of computation of working capital for the period 2014-19. In addition to the





average GCV, it has also considered a margin of 100 kCal/kg for computation of the working capital of the generating station.

106. Regulation 28(2) of the 2014 Tariff Regulations provides that the computation of cost of fuel as a part of IWC is to be based on the landed price and gross calorific value of the fuel, as per actuals, for the three months preceding the first month for which the tariff is to be determined. Thus, calculation of IWC for the period 2014-19 is to be based on such values for months of January 2014, February 2014 and March 2014. The Petitioner has not been able to furnish these values at the time of determination of tariff for the period 2014-19 in Petition No. 292/GT/2014. In the present petition, the Petitioner has proposed that instead of GCV for January 2014, February 2014 and March 2014, the Commission should consider the average values for months of October 2016 to March 2019 since the measurement of 'as received' GCV has been done in accordance with directions of the Commission vide order dated 25.1.2016 in Petition No. 283/GT/2014. In our view, the proposal of the Petitioner to consider the retrospective application of 30 months' (October 2016 to March 2019) average of 'as received' GCV data in place of 'as received' GCV of the preceding three months (January 2014 to March 2014) is not acceptable, keeping in view that the average GCV for 30 months may not be commensurate to the landed cost of coal for the preceding three months to be considered for calculating IWC in terms of Regulation 28(2) of the 2014 Tariff Regulations and that due to efflux of time (gap of 30 month), the quality of coal extracted from the linked mines would have undergone considerable changes. Also, the consideration of loss of GCV of 100 kCal/kg cannot be considered, as the same is not as per provisions of the 2014 Tariff Regulations.

107. 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 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."*

108. Thus, in terms of the above amendment to the 2009 Tariff Regulations, the details regarding the weighted average GCV of the fuels on 'as received' basis was also required to be provided by the Petitioner along with bills of the respective month. Also, bills detailing the parameters of GCV and price of fuel were to be displayed by the Petitioner on its website, on monthly basis.

109. 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 period 2014-19. This, according to us, defeats the very purpose of moving from 'as fired' GCV to 'as received' GCV in the 2014 Tariff Regulations. In this background and keeping in view that in terms of amended Regulation 21(6) of the 2009 Tariff Regulations, the Petitioner is required to share details of the weighted average GCV of the fuel on 'as received' basis, we consider the fuel component and energy charges for two months based on 'as received' GCV of the preceding three months (January 2014 to March 2014) for the purpose of computation of IWC in terms of Regulation 28(2) of the 2014 Tariff Regulations.

110. The Petitioner has calculated GCV 3754 kCal/kg which represents average of GCVs of preceding three months. The weighted average GCV for three months based on the net coal quantities as per Form-15 of the petition and the monthly GCVs as



submitted by the Petitioner (in table at paragraph 103 above) works out to 3859.29 kCal/kg.

111. 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 3859.29 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. Based on the above discussion, the cost for fuel component in working capital is worked out and allowed as under:

	<i>(Rs. in lakh)</i>				
	<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 (15 days) generation corresponding to NAPAF	11613.60	11613.60	11613.60	11893.45	11893.45
Cost of Coal towards Generation (30 days) generation corresponding to NAPAF	23227.21	23227.21	23227.21	23786.90	23786.90
Cost of Secondary fuel oil 2 months generation corresponding to NAPAF	559.02	560.55	559.02	572.49	572.49

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

112. Regulation 30(6)(a) of the 2014 Tariff Regulations provides for computation and payment of Energy Charge for thermal generating stations:

*“(6): Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal place in accordance with the following formula:*

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

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

*Where,*

*AUX = Normative auxiliary energy consumption in percentage.*

*CVPF = Gross calorific value of primary fuel as received, in kCal per kg, per litre or per standard cubic metre, as applicable.*

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

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

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



LC = Normative limestone consumption in kg per kWh.

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

LPPF = Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable during the month.

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

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

113. The Petitioner has claimed Energy Charge Rate (ECR) of 214.00 Paise/kWh for the generating station. The allowable ECR, based on the operational norms as specified in Regulation 36(A) of the 2014 Tariff Regulations and on weighted average of ‘as received’ GCV of 3859.29 kCal/kg is worked out as under:

	Unit	2014-19
<b>Capacity</b>	<b>MW</b>	2100
Gross Station Heat Rate	kCal/kWh	2396.43
Aux. Energy Consumption	%	6.68%
Weighted average GCV of Oil	kCal/lit	9078.00
Weighted average GCV of Coal	Kcal/kg	3859.29
Weighted average price of Oil	Rs. /KL	43934.48
Weighted average price of Coal	Rs. /MT	2986.30
Rate of Energy Charge ex-bus	Rs. /kWh	2.007

114. The Energy Charges for two months for computation of working capital based on ECR of Rs.2.007/kWh, has been worked out as under:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
47662.52	47793.10	47662.52	48811.01	48811.01

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

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

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
8474.75	8778.21	10213.71	10885.12	11719.60

116. Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provide for maintenance spares @ 20% of the O&M expenses as specified in the Regulation 29 of the 2014



Tariff Regulations. Accordingly, maintenance spares @ 20% of the O&M expenses (including the water charges and capital spares) allowed, is as under:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
7956.13	8696.61	9102.28	9520.26	10298.81

### **Receivables for Working Capital**

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

<i>(Rs. in lakh)</i>					
	2014-15	2015-16	2016-17	2017-18	2018-19
Variable Charges - for two months of generation at NAPAF (A)	47662.52	47793.10	47662.52	48811.01	48811.01
Fixed Charges - for two months of generation at NAPAF (B)	12791.96	13556.26	13744.76	14135.23	14863.27
<b>Total (C = A+B)</b>	<b>60454.48</b>	<b>61349.36</b>	<b>61407.28</b>	<b>62946.24</b>	<b>63674.28</b>

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

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

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
3531.14	3657.59	4255.71	4535.46	4883.17

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

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



<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
3315.05	3623.59	3792.62	3966.77	4291.17

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

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

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

<i>(Rs. in lakh)</i>					
	2014-15	2015-16	2016-17	2017-18	2018-19
Working capital for Cost of Coal towards Stock (15 days generation corresponding to NAPAF) (A)	11613.60	11613.60	11613.60	11893.45	11893.45
Working capital for Cost of Coal towards Generation (30 days generation corresponding to NAPAF) (B)	23227.21	23227.21	23227.21	23786.90	23786.90
Working capital for Cost of Secondary fuel oil (2 months generation corresponding to NAPAF) (C)	559.02	560.55	559.02	572.49	572.49
Working capital for Maintenance Spares (20% of O&M expenses) (D)	7956.13	8696.61	9102.28	9520.26	10298.81
Working capital for Receivables (2 months of sale of electricity at NAPAF) (E)	60454.48	61349.36	61407.28	62946.24	63674.28
Working capital for O&M expenses (1 month of O&M expenses) (F)	3315.05	3623.59	3792.62	3966.77	4291.17
<b>Total Working Capital (G = A+B+C+D+E+F)</b>	<b>107125.49</b>	<b>109070.91</b>	<b>109702.01</b>	<b>112686.11</b>	<b>114517.10</b>
Rate of interest	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Interest on Working Capital (I = G x H)</b>	<b>14461.94</b>	<b>14724.57</b>	<b>14809.77</b>	<b>15212.62</b>	<b>15459.81</b>

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

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

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

<i>(Rs. in lakh)</i>					
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	0.00	814.45	0.00	0.00	285.01
Interest on Loan	227.18	175.30	131.11	119.86	109.71





	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Return on Equity	22282.02	22140.20	22016.29	21877.60	21831.01
Interest on Working Capital	14461.94	14724.57	14809.77	15212.62	15459.81
O&M Expenses	39780.63	43483.03	45511.40	47601.29	51494.06
Compensation Allowance	1000.00	500.00	0.00	0.00	0.00
Special Allowance	7735.54	12214.87	17231.89	18326.11	19489.82
<b>Total</b>	<b>85487.31</b>	<b>94052.42</b>	<b>99700.46</b>	<b>103137.49</b>	<b>108669.43</b>
Impact of Pay Revision	12494.59				
Impact of GST	0.00	0.00	0.00	0.00	0.00

**Note:** (1) All figures are on annualized basis. (2) All figures under each head have been rounded. The figure in total column in each year is also rounded. As such the sum of individual items may not be equal to the arithmetic total of the column

124. The difference between the annual fixed charges already recovered in terms of the Commission's order dated 24.1.2017 in Petition 292/GT/2014 and the annual fixed charges determined by this order shall be adjusted in terms of Regulation 8 of the 2014 Tariff Regulations.

125. Petition No. 237/GT/2020 is disposed of in terms of the above.

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

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

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

