CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 288/GT/2020

Coram:

Shri P. K. Pujari, Chairperson
Shri I. S. Jha, Member
Shri Pravas Kumar Singh, Member

Date of Order: **7th November 2021**

In the matter of:

Petition for revision of tariff of Dadri Gas Power Station (829.78 MW) for the period from 1.4.2014 to 31.3.2019, after truing up exercise

And

In the matter of:

NTPC Limited,
NTPC Bhawan, Core-7, Scope Complex,
7, Institutional Area, Lodhi Road,
New Delhi – 110 003 **.....Petitioner**

Vs

1. Uttar Pradesh Power Corporation Limited,
   Shakti Bhawan, 14, Ashok Marg,
   Lucknow – 226 001

2. Rajasthan Urja Vikas Nigam Limited,
   Vidyut Bhawan, Janpath,
   Jaipur – 302 005

3. Tata Power Delhi Distribution Limited,
   Grid Substation, Hudson Road, Kingsway Camp,
   Delhi – 110009

4. BSES Rajdhani Power Limited,
   BSES Bhawan, Nehru Place,
   New Delhi – 110019

5. BSES Yamuna Power Limited,
   Shakti Kiran Building, Karkardooma,
   Delhi – 110092

6. Haryana Power Purchase Centre,
   Shakti Bhawan, Sector-VI, Panchkula,
   Haryana – 134 109

7. Punjab State Power Corporation Limited,

The Mall,
Patiala – 147 001

8. Himachal Pradesh State Electricity Board Limited,
Kumar Housing Complex Building-II, Vidyut Bhawan,
Shimla – 171 004

9. J&K State Power Trading Company Limited,
(on behalf of Power Development Department),
Civil Secretariat,
Srinagar

10. Electricity Department,
Union Territory of Chandigarh,
Addl. Office Building, Sector-9 D,
Chandigarh

11. Uttarakhand Power Corporation Limited,
Urja Bhavan, Kanwali Road,
Dehradun – 248 001 **...Respondents**

For Petitioner: Shri Venkatesh, Advocate, NTPC
Shri Anant Singh, Advocate, NTPC
Shri Vikas Maini, Advocate, NTPC
Shri Suhael Buttan, Advocate, NTPC
Shri Abhishek Nangia, Advocate, NTPC
Shri S.P. Kesarwani, NTPC

For Respondent: Shri Buddy Ranganadhan, Advocate, BRPL
Shri Rahul Kinra, Advocate, BRPL
Shri Anupam Varma, Advocate, BRPL
Shri Utkarsh Singh, Advocate, BRPL
Ms. Megha Bajpeyi, BRPL
Shri Gurmeet Deogen, BRPL
Shri Sameer Singh, BYPL
Shri Abhishek Srivastava, BYPL
Shri Anand Shrivastava, Advocate, TPDDL
Ms. Shruti Kanodia, Advocate, TPDDL
Ms. Priyansha Sharma, Advocate, TPDDL
Shri Manish Garg, UPPCL

ORDER

This petition has been filed by the Petitioner, NTPC (in short 'NTPC'), for truing up of tariff for the 2014-19 tariff period in terms of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (in short 'the 2014 Tariff Regulations') in respect of Dadri Gas Power Station (829.78 MW) (hereinafter referred to as 'the generating station'). The generating station with a capacity of 829.78 MW comprises of four Gas Turbine (GT) units of 130.19 MW each and two Steam Turbine (ST) units of 154.51 MW. The dates of commercial operation of the different units of the generating station are as follows:

Asset	Capacity (MW)	Module/Block	COD
GT-I	130.19	I	1.5.1992
GT-II	130.19		1.6.1992
ST-I	154.51		1.8.1996
GT-III	130.19	II	1.8.1992
GT-IV	130.19		1.12.1992
ST-II	154.51		1.4.1997

2. The Commission by order dated 7.12.2015 in Petition No. 301/GT/2014, while determining the tariff of the generating station for the 2009-14 tariff period, had approved the closing capital cost of Rs.86840.30 lakh, as on 31.3.2014. Thereafter, by the order dated 27.1.2017 in Petition No. 308/GT/2014, the tariff of the generating station was determined for the 2014-19 tariff period, considering the opening capital cost of Rs. 86840.30 lakh, as on 1.4.2014. The capital cost and the annual fixed charges allowed by order dated 27.1.2017 are as under:

Capital Cost allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	86840.30	87670.53	87670.53	88920.81	90171.09
Add: Projected Additional Capital Expenditure allowed	830.23	0.00	1250.28	1250.28	0.00
Closing Capital Cost	**87670.53**	**87670.53**	**88920.81**	**90171.09**	**90171.09**

Annual Fixed Charges allowed

(Rs.in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	127.02	221.98	413.74	995.55	1492.52
Interest on Loan	144.10	155.22	166.69	183.03	105.77
Return on Equity	8582.80	8648.92	8685.88	8759.79	8796.74
Interest on Working Capital	8813.86	8889.90	8943.11	9024.13	9104.60
O&M Expenses	12228.21	12991.61	13804.79	14667.77	15588.82
Annual Fixed Charges	**29895.99**	**30907.64**	**32014.21**	**33630.27**	**35088.46**

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. The annual fixed charges claimed by the Petitioner for the 2014-19 tariff period are as follows:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Depreciation	155.51	271.71	318.85	2731.15	10458.52
Interest on Loan	148.18	163.83	139.39	234.74	190.22
Return on Equity	8585.37	8656.74	8656.51	8822.46	9203.14
Interest on Working Capital	8859.93	8918.70	9135.66	9161.80	9517.81
O&M Expenses	12824.33	13304.39	15510.86	14885.28	16093.40
Annual Fixed Charges	**30573.32**	**31315.38**	**33761.27**	**35835.44**	**45463.09**

5. The Respondents, UPPCL, TPDDL, BRPL and BYPL have filed their replies vide affidavits dated 12.6.2020 31.5.2021, 4.5.2021 and 4.5.2021 respectively. The Petitioner has filed its rejoinder to the said replies vide affidavits dated 12.1.2021, 11.5.2021 and 21.6.2021 respectively. This petition was heard along with Petition No. 400/GT/2020 (Petition for determination of tariff of the generating station for the 2019-24 tariff period) on 17.3.2021 and orders in these petitions were reserved, after directing the Petitioner to submit certain additional information vide Record of Proceedings (RoP) of the hearing. In response, the Petitioner has filed the additional information vide affidavits dated 19.4.2021 and 18.6.2021. Since the petition could not be disposed of prior to one Member of the Commission demitting office, this petition along with Petition No.400/GT/2020 was re-listed and heard on 29.6.2021. The Commission, after directing the Respondent, UPPCL to upload the document containing the computation of employee cost (normative versus actuals) and to serve copy of the same to the Petitioner, reserved its order in these petitions, on 29.6.2021.

In compliance to the directions, the Respondent UPPCL has filed the information vide reply affidavit dated 25.6.2021 and the Petitioner has filed rejoinder vide affidavit dated 20.7.2021. Taking into consideration the submissions of the parties and the documents available on record, we proceed to examine the claims of the Petitioner, in this petition, on prudence check, as stated in the subsequent paragraphs.

6. 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 capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and*
>
> *(a) expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15."*

7. The Commission vide order dated 27.1.2017 in Petition No. 308/GT/2014 had allowed the opening capital cost of Rs.86840.30 lakh as on 1.4.2014, based on the closing capital cost of Rs.86840.30 lakh as on 31.3.2014, approved vide order dated 7.12.2015 in Petition No.301/GT/2014. Therefore, the closing capital cost of Rs.86840.30 lakh as on 31.3.2014, has been considered as the opening capital cost as on 1.4.2014, in accordance with Regulation 9(3) of the 2014 Tariff Regulations.

Additional Capital Expenditure

8. Regulations 14(3) of the 2014 Tariff Regulations provides as under:

> *"14.(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 or statutory authorities responsible for national security/internal security;*
> *(iv) Deferred works relating to ash pond or ash handling system in the original scope of work;*

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

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

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

9. The projected additional capital expenditure allowed for the 2014-19 tariff period by order dated 27.1.2017 in Petition No. 308/GT/2014, is summarized below:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Phasing out of Halon Fire Fighting System	181.13	0.00	0.00	0.00	0.00	181.13
R&M of electrical system (ST excitation system)	63.57	0.00	0.00	0.00	0.00	63.57
Replacement of PGB coolers	547.78	0.00	0.00	0.00	0.00	547.78
Supply of CCTV system	37.75	0.00	0.00	0.00	0.00	37.75
Renovation & Modernization (R&M) of Station C&I	0.00	0.00	1250.28	1250.28	0.00	2500.56
Total projected additional capital expenditure allowed	**830.23**	**0.00**	**1250.28**	**1250.28**	**0.00**	**3330.79**

10. The Petitioner, in Form-9A, has submitted the actual additional capital expenditure for the 2014-19 tariff period, as summarised below:

(Rs. in lakh)

Sl. No.	Head of Work /Equipment	2014-15	2015-16	2016-17	2017-18	2018-19	Total
A	**Allowed Works**						
1	Phasing out of Halon Fire Fighting System	215.40	0.00	0.00	0.00	0.00	215.40
2	De-capitalization of Sl. No. 1 above	(-) 5.01	0.00	0.00	0.00	0.00	(-) 5.01
3	R&M of Electrical system (ST excitation system)	67.57	0.00	0.00	0.00	0.00	67.57
4	De-capitalization of Sl. No. 3 above	(-) 1.50	0.00	0.00	0.00	0.00	(-) 1.50
5	Replacement of PGB coolers	698.51	0.00	0.00	0.00	0.00	698.51
6	Supply of CCTV	40.84	0.00	0.00	0.00	0.00	40.84
7	Renovation & Modernization (R&M) of Station C&I	0.00	0.00	0.00	8009.70	8942.76	16952.45

Sl. No.	Head of Work /Equipment	2014-15	2015-16	2016-17	2017-18	2018-19	Total
8	De-capitalization of Sl. No. 7 above	0.00	0.00	0.00	(-) 2331.51	(-) 2310.58	(-) 4642.09
9	Renovation of Generator & Transformer Protection Relays	0.00	0.00	0.00	89.25	146.90	236.15
	Sub-total (A)	**1015.81**	**0.00**	**0.00**	**5767.43**	**6779.08**	**13562.32**
B	**New Claims**						
1	Continuous Stack Emission Monitoring System (CSEMS)	0.00	52.97	0.00	1.81	0.00	54.78
2	Solar PV System for 24V DC	0.00	19.44	4.65	0.00	0.00	24.09
4	Installation of LED based light fittings	0.00	0.00	0.00	50.03	35.05	85.08
5	De-capitalization of Sl. No. 4 above	0.00	0.00	0.00	(-) 4.87	(-) 13.74	(-) 18.60
	Sub-total (B)	**0.00**	**72.41**	**4.65**	**46.97**	**21.31**	**145.35**
C	De-capitalization of Spares (part of capital cost)	(-) 113.55	(-) 3.62	(-) 164.69	(-) 116.51	(-) 468.53	(-) 866.89
D	**Sub-total (A + B + C)**	**902.26**	**68.80**	**(-) 160.04**	**5697.90**	**6331.86**	**12840.78**
E	Discharge of liabilities	0.00	36.53	47.02	29.29	0.00	112.84
	Total Additional Capital Expenditure claimed (D + E)	**902.26**	**105.32**	**(-) 113.01**	**5727.19**	**6331.86**	**12953.62**

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

(A) Additional capital expenditure towards allowed works

(1) Phasing out of Halon Fire Fighting System

12. The Petitioner has claimed actual additional capital expenditure of Rs. 215.40 lakh, on cash basis, in 2014-15 and Rs. 0.21 lakh on accrual basis in 2015-16, towards phasing out of Halon fire fighting system under Regulation 14(3)(ii) of the 2014 Tariff Regulations. In justification of the same, the Petitioner has submitted that the Commission in order dated 27.1.2017 in Petition No.308/GT/2014 had allowed the projected additional capital expenditure of Rs.181.13 lakh (Rs. 247.00 lakh-Rs. 65.87 lakh) in 2012-13, on net basis. The Petitioner has claimed the same, on actual basis for Rs.210.39 lakh (Rs. 215.40 lakh – Rs. 5.01 lakh) in 2014-15, on net basis, pending payment of un-discharged liabilities for Rs. 20.97 lakh. The additional capital

expenditure allowed and claimed by the Petitioner in 2014-15, is shown below:

(Rs. in lakh)

	Allowed in order dated 27.1.2017 in Petition No.308/GT/2014	**Claimed (cash basis)**
Phasing out of Halon Fire Fighting System	247.00	215.40
Less: Corresponding De-capitalization	65.87*	5.01
Net additional capital expenditure	**181.13**	**210.39**

**Assumed deletion at 26.67% of the projected value of new asset.*

13. The Respondents, UPPCL and TPPDL have submitted that as against the de-capitalisation of 26.67% of the value of new asset allowed in order dated 27.1.2017 in Petition No.308/GT/2014, the Petitioner has considered much lower de-capitalisation and therefore, the Commission may consider the higher de-capitalisation value as allowed in the said order dated 27.1.2017. In response, the Petitioner has submitted that during the proceedings in Petition No. 308/GT/2014, the original value of the asset, for the purpose of computing de-capitalization, was not provided by the Petitioner and, therefore, the Commission in its order dated 27.1.2017, had considered an ad-hoc value. It has, however, submitted that in the present petition, the Petitioner has furnished the required original value, as contemplated under Regulation 14(4) of 2014 Tariff Regulations and, hence, the de-capitalization sought for may be granted. The Petitioner has also referred to the relevant extracts of the Commission's order dated 20.7.2016 in Petition No. 51/TT/2015 (PGCIL vs KPTCL & ors) and order dated 24.9.2014 in Review Petition No. 17/RP/2014 (NTPC Ltd. vs GRIDCO Ltd) in this regard.

14. The matter has been considered. It is observed that the additional capital expenditure claimed is in respect of the deferred work, allowed as additional capital expenditure, vide order dated 16.3.2013 in Petition No. 16/GT/2013 and also allowed thereafter, vide order dated 27.1.2017 in Petition No. 308/GT/2014, considering the fact that the asset is required as statutory compliance under the National Fire

Protection Association Standard on Clean Agent Fire Extinguishing system (NFPA-2001). It is also observed that the gross additional capital expenditure originally projected and allowed in the year 2012-13 was Rs. 247.00 lakh, while the amount actually incurred on accrual basis, is Rs.236.38 lakh, which is lower than the amount allowed. The net additional capital expenditure is higher, on account of the difference between the de-capitalisation, based on assumed deletion of 26.67%, allowed in the above-mentioned orders and the actual de-capitalisation value now furnished by the Petitioner. Since the expenditure for the asset is for statutory compliance as stated above and the Petitioner has submitted the actual value of the original asset, which has been de-capitalised, the same is considered in accordance with Regulation 14(4) of the 2014 Tariff Regulations, which is reproduced as under:

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

15. Accordingly, the actual net additional capital expenditure (on cash basis) of Rs. 210.39 lakh (Rs. 215.40 lakh-Rs. 5.01 lakh) in 2014-15 is allowed under Regulation 14(3)(ii) of the 2014 Tariff Regulations. Further, the corresponding un-discharged liability of Rs. 20.97 lakh in 2014-15 and Rs. 0.21 lakh in 2015-16, shall be considered at the time of actual discharge of liability.

(b) Renovation & Modernization of Station C&I

16. The Petitioner has claimed actual additional capital expenditure of Rs.16952.45 lakh (Rs. 8009.70 lakh and Rs. 8942.76 lakh during the years 2017-18 and 2018-19 respectively) for R&M of Station C&I under Regulation 14(3)(vii) of the 2014 Tariff Regulations. Accordingly, the additional capital expenditure allowed vide order dated 27.1.2017 in Petition No. 308/GT/2014 and claimed by the Petitioner is as under:

(Rs. in lakh)

	Allowed in order dated 27.1.2017 in Petition No.308/GT/2014			Claimed (on cash basis)		
	2016-17	**2017-18**	**Total**	**2017-18**	**2018-19**	**Total**
R&M of Station C&I	1705.00	1705.00	3410.00	8009.70	8942.76	16952.45
Less: Corresponding De-capitalization	454.72	454.72	909.45*	2331.51	2310.58	4642.09
Net additional capital expenditure	**1250.28**	**1250.28**	**2500.55**	**5678.19**	**6632.18**	**12310.37**

**Assumed deletion at 26.67% of the projected value of new asset.*

17. In compliance to the direction of the Commission in order dated 27.1.2017 in Petition No.308/GT/2014 for submission of technical justification with documentary evidence such as test results etc., towards R&M of Station C&I, the Petitioner has submitted as follows:

(a) The Petitioner took up R&M of Gas Turbines (GTs) and its associated system in most of the gas stations including the instant station. In case of Dadri GPS C&I R&M package, the estimates were prepared based on the awarded value available at that time in respect of other gas stations. In terms of above, C&I R&M package for Dadri GPS was estimated to be Rs.29.68 crore and the same was submitted to CEA. However, CEA approved Rs.24 crore (excluding Taxes, Duties, works charges, contingency, IDC & Financing Charges) for R&M of C&I system against estimate of Rs.29.68 crore. It is noteworthy that the R&M schemes for Dadri GPS were projected during 2009-14 period in Petition No. 224/2009 and the Commission vide order dated 14.6.2012 had allowed the same;

(b) The purpose of tendering/ award, R&M of GTs and R&M of C&I packages were combined in a single package for getting better competitive price. Bids were invited for combined package under International Competitive Bidding (ICB) in 2012;

(c) However, only two bids of M/s Siemens & M/s Ansaldo were received. The bidding process for the combined package was annulled in 2013 and it was decided to delink C&I R&M from composite package. Re-tendering and re-invitation of bids took some time and the bid for R&M of C&I Package was invited in 2014;

(d) The contract for R&M of C&I system was awarded to M/s Siemens AG (OEM) on 30.9.2015 with award value in Foreign Currency of Euro 1.1092 crore

+ Domestic currency of Rs.83.8818 crore (total award value was about Rs.162.85 crore including spares, taxes & duties etc.), which amount to Rs.169 crore at the time of capitalization (Foreign Currency of Euro 1.1092 crore was equivalent to Rs.85.5417 crore @ Rs. 77.12 per Euro);

(e) With respect to estimated cost of Rs.29.68 crore (excluding Taxes, Duties, works charges, contingency, IDC & Financing Charges), around Rs.10 crore increase in cost is due to FERV (Euro exchange rate changed from Rs. 56.84 in 2006 to Rs.77.12 in 2018 and went to maximum of Rs.86.16), around Rs.40 crore increase in cost is due to price escalation (@ 10% escalation per annum from 2006 to 2018), around Rs.35 crore due to scope change (such as inclusion of UPS, Static Frequency Converter (SFC), spares etc. which were not included in estimated cost) and around Rs.40 crore is due to other components (such as Freight & Insurance, Taxes & Duties etc. which were not included in estimated cost);

(f) The work was completed in both the modules and Rs.6773.55 lakh and Rs.9774.51 lakh were capitalized, on net basis, during the years 2017-18 and 2018-19 respectively: and

(g) Further, copies of completion of facility Certificates for R&M of C&I system of Module-I & II are also submitted.

18. The Commission vide RoP of the hearing dated 17.3.2021 directed the Petitioner to furnish the following additional information:

"(i) For R&M of C&I system, CEA approved cost was Rs.24 Crore, Awarded cost was Rs. 85.54 Crore and claimed expenditure in the Instant petition is Rs.180 Crore, Petitioner shall furnish the following:

(ii) Reasons for not approaching CEA when expenditure claimed is 750% higher than the approved cost;

(iii) Furnish the work order placed to OEM with complete details such as scope of work, cost with bifurcation, whether cost was fixed or escalable;

(iv) Reasons with bifurcation for such a high increase in completion cost from awarded cost."

19. In compliance to the aforesaid directions, the Petitioner has submitted the following:

a. The contract for R&M of C&I system was awarded to M/s Siemens AG (OEM) on 30.09.2015 with award value in Foreign Currency of Euro 1.1092 crore apart from Rs. 83.8818 crore (total award value was about Rs. 162.85 crore), which amounts to Rs. 169 crore at the time of capitalization (Euro 1.1092 crore was equivalent to Rs. 85.5417 crore @ Rs. 77.12 per Euro);

b. In 2010, the GoI had accorded 'Maharatna' status to the Petitioner. Due to 'Maharatna' status, the Board of the Petitioner Company got greater operational and financial autonomy to take financial decisions. Hence, independent approval of CEA was not sought.

c. On 30.7.2015, the Board of Directors of NTPC duly granted approval for R&M of C&I package for the generating station.

d. The copies of work orders placed to OEM with complete details such as scope of work, cost with bifurcation has been submitted**.**

e. As per the contract, the cost was fixed only. The variation in awarded cost and completed cost is due to changes in Foreign Exchange Rate Variation (FERV) of Euro, taxes & duties etc which were not included in the awarded cost.

20. The Respondents, UPPCL and TPDDL, have submitted that there is massive increase in the expenditure incurred for R&M of Station C&I which is approximately five times the allowed cost. The Respondents have further submitted that the contract was awarded on 30.9.2015 and considering the order dated 27.1.2017 in Petition No. 308/GT/2014, the Petitioner had ample opportunity to bring this fact to the knowledge of the Commission, during the earlier proceedings, but this material fact was withheld. The Respondents have, therefore, submitted that the Commission may undertake prudence check, and limit the claim to the approved amount of Rs.2500.56 lakh only. The Respondents, BRPL and BYPL, have submitted that an amount of Rs. 25 crore (upon the estimated amount of Rs. 29 crore) was approved vide order dated 14.6.2012 in Petition No. 224/2009 and, hence, the balance amount may be rejected since the (i) delay cited by Petitioner was on its own accord which has led to increase in due to escalation and Euro rate increase of about Rs. 50 crore, (ii) the Petitioner has not furnished any documentary evidence, which shows that the delay has not led to an increase of Rs. 40 crore, on account of freight, duties & taxes and (iii) the Petitioner has not furnished any evidence to show that re-approval was sought for increase in scope which had increased the cost by Rs. 35 crore. The Respondents

have also submitted that the Petitioner ought not to be allowed the said expenditure, without there being prudence check of the increase in the said cost. They have also submitted that since FERV is allowed separately under the 2014 Tariff Regulations, the Petitioner’s claim for increase of Rs. 10 crore due to increase in Euro rate from Rs. 56.84 to Rs. 77.12, during the period from 2006 to 2018 is liable to be rejected. The Respondents have pointed out that the additional capitalization was deferred by the Petitioner in Petition No.16/GT/2013, since the tendering process was annulled and had decided to delink the C&I Package from the combined composite package and, thus, the present petition is only in respect of R&M of C&I and not the R&M of GTs for life extension.

21. The Petitioner has submitted that the C&I contract, after re-tendering, was awarded, after filing of the main petition (Petition No. 224/2009) for determination of tariff for the 2014-19 tariff period. It has also submitted that the additional capital expenditure claimed in the main petition was based on estimated value and the same was allowed by order dated 14.6.2012 in Petition No. 224/2009 in for the 2009-14 tariff period. The additional capital expenditure on C&I package claimed in this petition, is based on the actual additional capital expenditure incurred by the Petitioner during the 2014-19 tariff period.

22. The submissions have been considered. It is observed that the projected additional capital expenditure of Rs.3410.00 lakh in respect of R&M of C&I, was approved vide order dated 27.1.2017 in Petition No. 308/GT/2014, without any deduction, except for assumed de-capitalisation, in the absence of any information towards de-capitalisation furnished by the Petitioner. Further, R&M of GTs and R&M of C&I packages were combined in a single package for getting better competitive price, as early as in the year 2012. The bidding process for the combined package

was annulled in 2013 and it was decided to delink C&I R&M from composite package. On 30.7.2015, the Board of Directors of the Petitioner Company duly granted approval for R&M of C&I package for the generating station. The Petitioner had re-tendered the bid for R&M of C&I package in 2014 and finally awarded the work to M/s Siemens AG (OEM) on 30.9.2015, for a value of Rs. 162.85 crore (approx.), which finally worked out to Rs. 169 crore (approx.) at the time of additional capitalization in 2017-18 and 2018-19. It is observed that R&M of C&I package allowed in order dated 27.1.2017 in Petition No. 308/GT/2014 was based on the amount recommended by CEA during the year 2008. While the additional capital expenditure approved by order dated 14.6.2012 in Petition No. 224/2009, was on estimation basis, the actual additional capital expenditure, presently claimed by the Petitioner, is based on the prices discovered under competitive bidding. At the same time, we are of the view that since the work towards R&M of C&I package was awarded before the hearing in Petition No. 308/GT/2014 was concluded and order dated 27.1.2017 was issued, the Petitioner should have submitted the updated information.

23. Due to efflux of time, the additional capital expenditure approved earlier, based on the 2008 estimated figures, cannot be compared with the actual additional capital expenditure incurred during the years 2017-18 and 2018-19 arrived through competitive bidding. The Petitioner has submitted that increase in cost (compared to estimates of 2008) has been on account of change of scope (Rs. 35 crore), increase in cost due to implementation in 2015 instead of in 2008 (Rs. 40 crore), FERV (Rs. 10 crore), duties, taxes and freight (Rs. 40 crore). Keeping in view that the Petitioner has furnished copies of completion of facility Certificates for R&M of C&I system of Module-I & II, the work orders placed to OEM with complete details such as scope of work, cost with bifurcation and Auditor certificate for the said works and the fact that

cost has been discovered through a transparent process of bidding, we allow the additional capital expenditure claimed by the Petitioner along with corresponding actual de-capitalisation value furnished by the Petitioner. Accordingly, the actual additional capital expenditure allowed is summarised below:

(Rs. in lakh)

	Claimed (on cash basis)			Allowed		
	2017-18	**2018-19**	**Total**	**2017-18**	**2018-19**	**Total**
R&M of Station C&I	8009.70	8942.76	16952.45	8009.70	8942.76	16952.45
Less: Corresponding De-capitalization	2331.51	2310.58	4642.09	2331.51	2310.58	4642.09
Net additional capital expenditure	**5678.19**	**6632.18**	**12310.37**	**5678.19**	**6632.18**	**12310.37**

(c) R&M of Electrical System (ST excitation system)

24. The Petitioner has claimed actual additional capital expenditure of Rs. 67.57 lakh, on cash basis, towards R&M of electrical system (ST excitation system) in 2014-15, in terms of Regulation 14(3)(vii) of the 2014 Tariff Regulations. In justification of the same, the Petitioner has submitted that the Commission in its order dated 27.1.2017 in Petition No.308/GT/2014 had allowed the projected additional capital expenditure of Rs. 63.57 lakh (Rs. 86.69 lakh - Rs. 23.12 lakh). The Petitioner has now claimed the same asset for Rs. 66.07 lakh (Rs. 67.57 lakh – Rs. 1.50 lakh) in 2014-15, on net basis, pending payment of un-discharged liabilities of Rs.11.22 lakh. The additional capital expenditure allowed and claimed by the Petitioner under the head is as follows:

(Rs. in lakh)

	Allowed in order dated 27.1.2017 in Petition No.308/GT/2014	Claimed (cash basis)
R&M of electrical system (ST excitation system)	86.69	67.57
Less: Corresponding de-capitalization	23.12*	1.50
Net additional capital expenditure	**63.57**	**66.07**

**Assumed deletion at 26.67% of the projected value of new asset.*

25. Though the Petitioner has not furnished the technical justification such as test results etc., towards R&M of electrical system (ST excitation system), the Petitioner

has submitted that the CEA vide its letter dated 30.5.2008 had duly approved the additional capital expenditure for the excitation system, which became obsolete, with no availability of spares. Further, the Petitioner has submitted that excitation system requires complicated tuning and calibration procedures. It has also submitted that high troubleshooting time led to generation loss and thus replacement of Automatic Voltage Regulator (AVR) with Digital Voltage Regulator was required. The Petitioner further submitted that the R&M of electrical system (ST excitation system) work was delayed due to deferment of R&M of C&I work and necessary for efficient operation of the generating station.

26. The Commission vide RoP of the hearing dated 17.3.2021 had directed the Petitioner to furnish the documentary evidence in support of actual additional capital expenditure. In compliance, the Petitioner has submitted the Auditor certificate certifying the said additional capital expenditure incurred.

27. As regards the de-capitalised value, the Respondents UPPCL and TPDDL have made the same submissions as mentioned in paragraph 13 above.

28. The matter has been considered. It is observed that the additional capital expenditure claimed is the deferred work allowed as additional capital expenditure vide order dated 14.6.2012 in Petition No. 224/2009 for Rs.116.00 lakh (Rs. 58.00 lakh each in the years 2012-13 and 2013-14) and subsequently allowed vide order dated 27.1.2017 in Petition No. 308/GT/2014 for Rs. 86.69 lakh, along with the corresponding de-capitalised value of Rs. 23.12 lakh (Rs. 86.69 lakh x 26.67%). It is also observed that ST excitation system was obsolete with no availability of spares and replacement became necessary for efficient operation of the generating station. Further, due to the deferment of R&M of C&I work, the work for R&M of Electrical System (ST excitation system) was deferred and was completed in 2014-15. In view of

the above submissions and considering the fact that the R&M of Electrical System (ST excitation system) is necessary for the efficient operation of the generating station. We are inclined to allow the actual additional capital expenditure for the same. Further, the gross additional capital expenditure incurred, on accrual basis, is Rs. 78.78 lakh only, which is lower than the additional capital expenditure of Rs. 86.69 lakh allowed. The net additional capital expenditure of Rs. 66.07 lakh incurred is higher than the approved amount of Rs. 63.57 lakh (in order dated 27.1.2017) due to difference between the de-capitalisation, based on the actual de-capitalisation furnished by the Petitioner and the assumed deletion at 26.67% in the above-mentioned order. As the Petitioner has furnished the actual value of the original asset which has been de-capitalised, the same has been considered in accordance with Regulation 14(4) of the 2014 Tariff Regulations. Accordingly, the actual net additional capital expenditure (on cash basis) of Rs.66.07 lakh (Rs. 67.57 lakh - Rs.1.50 lakh) is allowed in terms of Regulation 14(3) (vii) of the 2014 Tariff Regulations for efficient operation of the generating station. Further, the corresponding un-discharged liability of Rs. 11.22 lakh shall be considered at the time of actual discharge of liability.

(d) Replacement of PGB coolers by Plate Type Heat Exchanger

29. The Petitioner has claimed actual additional capital expenditure of Rs. 698.51 lakh for replacement of PGB coolers by Plate type Heat Exchanger, in 2014-15, under Regulation 14(3)(vii) of the 2014 Tariff Regulations. In justification of the same, the Petitioner has submitted that in order dated 27.1.2017 in Petition No.308/GT/2014, the projected additional capital expenditure of Rs. 547.78 lakh (Rs. 747.00 lakh – Rs. 199.22 lakh) was allowed. Now, the Petitioner has claimed additional capital expenditure, on actual basis, for the said asset, for Rs. 698.51 lakh in 2014-15, pending payment of un-discharged liabilities of Rs. 85.01 lakh. The additional capital

expenditure allowed and now claimed by the Petitioner under the head is as under:

(Rs. in lakh)

	Allowed in order dated 27.1.2017 in Petition No.308/GT/2014	**Claimed (cash basis)**
Replacement of PGB coolers	747.00	698.51
Less*:* Corresponding De-capitalization	199.22*	0.00
Net additional capital expenditure	**547.78**	**698.51**

**Assumed deletion at 26.67% of the projected value of new asset.*

30. The Petitioner has submitted that the CEA vide its letter dated 30.5.2008, has duly approved the additional capital expenditure for PGB coolers by Plate type Heat Exchanger. It is also submitted that the existing PGB coolers were deteriorated and were unable to reduce the air temperature. The high generator cold/hot air temperature was further restricting load on the machine and causing generation loss. Further, the Petitioner has submitted that the Replacement /modification of existing PGB coolers which had outlived their life by a combination of cooling towers and plate type heat exchangers have been planned which would achieve desired cold-water temperature and generation loss on account of high temperature could be avoided. The Petitioner also submitted that the replacement of PGB coolers was necessary for efficient and successful operation of the generating station.

31. The Commission vide RoP of the hearing dated 17.3.2021 had directed the Petitioner to furnish the documentary evidence in support of actual additional capital expenditure. In compliance, the Petitioner submitted Auditor certificate verifying the said additional capital expenditure. The Petitioner has also submitted that though the work was completed and capitalised in 2014-15, the old asset could not be de-capitalised during the 2014-19 tariff period as value of old asset was not available at the time of filing of the Tariff Petition.

32. The matter has been considered. It is noticed that the additional capital

expenditure is in respect of the deferred work, which was already approved vide order dated 14.6.2012 in Petition No. 224/2009 for Rs. 200.93 lakh, on net basis, and by order dated 27.1.2017 in Petition No. 308/GT/2014 in 2014-15 for Rs. 547.78 lakh (Rs 747.00 lakh - Rs 199.22 lakh (with corresponding de-capitalised value i.e. assumed deletion of 26.67% of the projected value of new asset)). It is also observed that old PGB coolers were deteriorated and were unable to reduce the air temperature and causing generation loss and replacement became necessary for efficient operation of the generating station. Considering the above, we are of the view that replacement of PGB coolers by Plate type Heat Exchanger is necessary for efficient operation of the generating station. The Petitioner has now claimed gross actual additional capital expenditure incurred, on accrual basis, for Rs. 783.52 lakh, which is higher than the allowed additional capital expenditure of Rs. 747.00 lakh. It is also observed that in order 27.1.2017 in Petition No.308/GT/2014, the additional capital expenditure was restricted to the awarded value of Rs. 747.00 lakh, as the Petitioner had not furnished any justification for the increase in the expenditure. It is also noticed that the Petitioner has not furnished any justification for the increase in the additional capital expenditure in the present petition. It is further noticed that the Petitioner has also not de-capitalised the corresponding old asset from books of accounts and has also not claimed any de-capitalisation. Accordingly, instead of the claim of actual additional capital expenditure of Rs. 783.52 lakh, we limit allowed additional capital expenditure at Rs. 747.00 lakh in terms of Regulation 14(3)(vii) of the 2014 Tariff Regulations as was allowed in order 27.1.2017 in Petition No. 308/GT/2014. , Thus, we have disallowed an amount of Rs. 36.52 lakh. Based on this, the additional capital expenditure of Rs. 698.51 lakh (Rs 747 lakh - Rs 48.49 lakh) is allowed in 2014-15, after deducting the disallowed additional capital expenditure of Rs. 36.52 lakh, from the un-discharged liability of Rs.85.01 lakh. Also, in the absence of the actual de-capitalisation amount, the assumed deletion considered is Rs. 325.91 lakh. Further, the un-discharged liability which has been restricted to Rs.48.49 lakh, shall be considered at the time of actual discharge of liability.

(e) Supply of CCTV system

33. The Petitioner has claimed actual additional capital expenditure of Rs. 40.84 lakh (cash basis) for supply of CCTV system in 2014-15, based on the recommendations of the Intelligence Bureau (IB) GOI, under Regulation 14(3)(iii) of the 2014 Tariff Regulations. The Respondents, BRPL and BYPL have submitted that the claim may be permitted only after submission of the work completion certificate by the Petitioner. The Petitioner has clarified that in order dated 27.1.2017 in Petition No. 308/GT/2014, an amount of Rs. 37.75 lakh was allowed for the said asset based on the recommendations of IB and there is only minor deviation in the actual cost of Rs. 41.18 lakh (on accrual basis), as against the projected additional capital expenditure of Rs. 37.75 lakh allowed earlier. The Petitioner has further submitted that it has submitted the Auditor certified summary sheet of the additional capital expenditure incurred.

34. The submissions of the parties have been considered. The projected additional capital expenditure for this asset was allowed in order dated 27.1.2017. The Petitioner has submitted that against the allowed additional capital expenditure of Rs. 37.75 lakh on projection basis in order dated 27.1.2017, the actual additional capital expenditure was Rs. 41.18 lakh. Considering the fact that the additional capital expenditure has already been allowed, the work is completed and the Petitioner has submitted the Auditor certified summary sheet of additional capital expenditure, we allow Rs. 41.18 lakh as additional capital expenditure towards CCTV system. Also, the corresponding un-discharged liability of Rs. 0.34 lakh shall also be considered.

(f) Renovation of Generator & Transformer Protection Relays

35. The Petitioner has submitted that the additional capital expenditure claimed for this asset was allowed in order dated 14.6.2012 in Petition No. 224/2009 for Rs. 91.66 lakh, on net basis (after deducting notional de-capitalization @ 26.67% of the value of new asset), under Regulation 9(2)(vi) of the 2009 Tariff Regulations along with corresponding de-capitalization considering the fact that the asset was necessary for the efficient and successful operation of the generating station.

36. The Respondents, TPDDL, BRPL and BYPL have submitted that the works of R&M of Generator and Transformer Protection Relays was not completed by the Petitioner during the 2009-14 tariff period and carrying over of this work during the 2014-19 tariff period, is not permissible, in terms of the 2014 Tariff Regulations. The Petitioner has submitted that in Petition No. 16/GT/2013, it had submitted, that the said work was planned to be taken up with R&M of C&I system, to minimise the unit outage period. Accordingly, the Petitioner has submitted that the work was completed during the year 2017-18 along with R&M of C&I system. It has also submitted that Regulation 14(3) of 2014 Tariff Regulations clearly provides for additional capital expenditure to be claimed on actually incurred basis, at the time of truing-up of tariff. The additional capital expenditure earlier allowed and claimed by the Petitioner now, under this head, is as under:

(Rs. in lakh)

	Allowed in order dated 14.6.2012 in Petition No. 224/2009			**Claimed (on cash basis)**		
	2011-12	**2013-14**	**Total**	**2017-18**	**2018-19**	**Total**
Renovation of Generator & Transformer Protection Relays	119.00	6.00	125.00	89.25	146.90	236.15
Less: Corresponding de-capitalization	31.74	1.60	33.34*	0.00	0.00	0.00
Net additional capital expenditure	**87.26**	**4.40**	**91.66**	**89.25**	**146.90**	**236.15**

**Assumed deletion at 26.67% of the projected value of new asset.*

37. The mater has been examined. The Commission vide its order dated 14.6.2012 in Petition No. 224/2009 had approved the projected additional capital expenditure claimed by the Petitioner for the said work under Regulation 9(2)(vi) of the 2009 Tariff Regulations along with corresponding de-capitalization. However, the increase in the additional capitalisation claimed is on account of the spill over of the work from the year 2011-12 to 2017-18. In our view, the Petitioner should have sought fresh approval for incurring this expenditure in 2014-19 period and should not have relied upon approval granted during 2009-14 period. Therefore, this item of work is being considered as a fresh proposal for 2014-19 period. The Petitioner has submitted that the work was delayed as it was planned to be taken up with R&M of C&I system, to minimise the unit outage period. In view of the above, and since the asset is necessary for efficient and successful operation of the generating station, the actual additional capital expenditure of Rs.89.25 lakh in 2017-18 and Rs.146.90 lakh in 2018-19 is allowed under Regulation 14(3)(vii) of 2014 Tariff Regulations. However, in the absence of availability of the actual de-capitalisation amount, the assumed deletion of Rs. 39.61 lakh and Rs. 61.96 lakh respectively during the years 2017-18 and 2018-19 has been considered. Further, the un-discharged liability of Rs.15.84 lakh in 2017-18 and Rs. 25.72 lakh in 2018-19, shall be allowed only on actual discharge of the same by the Petitioner.

(B) Additional capital expenditure towards new works

(a) Continuous Stack Emission Monitoring System (CSEMS)

38. The Petitioner has claimed actual additional capital expenditure of Rs. 54.78 lakh (Rs. 52.97 lakh in 2015-16 and Rs. 1.81 lakh in 2017-18) towards installation of CSEMS based on the directions of the Uttar Pradesh Pollution Control Board (in short 'UPPCB') vide its letter dated 9.4.2014 under Regulation 14(3)(ii) of the 2014 Tariff

Regulations. The Respondents BRPL and BYPL have submitted that the Petitioner has not submitted complete information regarding the claim for online Continuous Stack Emission Quality Monitoring System (CSEMS). The Petitioner has clarified that it has installed online CSEMS for monitoring SOx and NOx parameters, in terms of the directions of UPPCB to the generating station of the Petitioner (including Dadri Gas) vide letter dated 9.4.2014, issued in terms of Section 33A of the Water (Prevention and Control of Pollution) Act, 1974 and Section 31A of the Air (Prevention and Control of Pollution) Act, 1981. It has also submitted that the direction for installation of online CSEMS was necessary, considering the need for self-monitoring mechanism for compliance with prescribed emission standards.

39. The matter has been considered. Considering the fact that the additional capital expenditure incurred in respect of the asset/work is mandatorily required in compliance to the statutory directions of the UPPCB, the same is allowed under Regulation 14(3)(ii) of the 2014 Tariff Regulations.

(b) Solar PV System for 24V DC

40. The Petitioner has claimed actual additional capital expenditure of Rs. 24.09 lakh in the 2014-19 tariff period towards installation of Solar PV System for 24V DC in the generating station. In compliance to the directions of the Commission vide RoP in hearing dated 13.4.2021, the Petitioner has submitted that the generating station is controlled by Distributed Control System ("DCS"), which needs 24V DC supply for its working/ operation, which is also the backbone of major auto loops (feedback system). It has also submitted that the system/ equipment permissive and protection systems, rely on the healthiness of this 24V DC system, and that the existing 24V DC supply system are about 20-year-old and further comprise of 415V AC supply from Station common switchgear, which is converted into 24V DC supply, which feed 24V DC

battery bank, as well as supply 24V DC to DCS system. The Petitioner has submitted that the 24V DC supply system is very complex and very important for the protection of unit/ equipment since the unit directly trips on loss of this 24V DC supply. In view of the above, the 24V DC supply available should be very reliable for efficient and reliable operation of the unit. The Petitioner has further submitted that the Solar PV system is comparatively less complex as it provides 24V DC supply directly from Solar light and act as a supplementary source, increasing the availability and reliability of the 24V DC supply. It has stated that for reliable and efficient operation of the generating station, the 24V DC Solar PV rooftop array system was installed to augment the existing DCS power supply and the output of Solar PV is used to utilise the maximum power during sun-lit period.

41. The Respondents BRPL and BYPL have submitted that the claim for Solar PV System for 24V DC is only permissible for efficient operation of the generating station on the basis of the report of an independent agency and no such report has been submitted by the Petitioner.

42. The Petitioner has submitted that by order dated 13.7.2020 in Petition No. 270/GT/2019 (tariff of SUGEN Power Plant for the 2014-19 tariff period), the Commission had allowed the expenditure towards 'installation of Solar Power Roof Top System'. It has further submitted that the installation of 24V DC Roof top Solar PV system in the generating station would reduce greenhouse gases and thereby reduce emissions. Further, the benefits of the same have been reaped by the beneficiaries. The Petitioner has added that the Auditor certified summary sheet of the additional capital expenditure has been furnished in compliance with the directions of the Commission.

43. The matter has been considered. It is observed that the actual additional capital expenditure claimed by the Petitioner is for new item which neither forms part of the capital cost nor has been replaced due to obsolescence or for non-availability of spares required for successful and efficient operation of the generating station. The Petitioner has not justified the claim with any technical justification, duly supported by documentary evidence like test results carried out by an independent agency. The Petitioner has also not demonstrated the need for an alternate back-up system, when the 24 DC battery bank is already in place. It is also not clear as to what benefits/ advantages, the beneficiaries would derive on account of installation of the Solar PV system by the Petitioner to augment the existing DCS power supply. In this background, the total actual additional capital expenditure claimed for Rs. 24.09 lakh during the years 2015-16 and 2016-17 is not allowed.

(c) Installation of LED based light fittings

44. The Petitioner has claimed total actual additional capital expenditure of Rs. 85.08 lakh (i.e. Rs. 50.03 lakh in 2017-18 and Rs. 35.05 lakh in 2018-19) towards installation of LED based light fittings with corresponding de-capitalisation of Rs. 18.60 lakh, thereby claiming net additional capital expenditure of Rs. 66.48 lakh. In justification of the same, the Petitioner has submitted the following:

a. The Prime Minister of India on 5.1.2015 had launched the National LED programme with an objective to reduce energy consumption by using energy efficient lighting. In line with the objective, Unnat Jyoti by Affordable LEDs for All (UJALA) and Street Lighting National Program is being implemented by M/s EESL.

b. Further, on 2.8.2017, the Ministry of Power, GoI, issued letter to the Petitioner Company, wherein it mandated to replace all old bulbs with LED bulbs in all buildings of the Petitioner including compound/ street lighting occupied by the Petitioner company.

c. Any direction of the Government of India is required to be implemented. Therefore, in order to comply with the directions issued by the Prime Minister and the GOI, the Petitioner initiated the work of replacing the old inefficient lights with energy efficient LED lighting in the premises of the station compound/ building owned and operated by the Petitioner Company. Hence, the claim may be allowed under change in law as per Regulation 14(3)(ii) read with Regulation 3.1(9) and Regulation 3(31) of the 2014 Tariff Regulations.

d. It is a settled position of law of that the expenditure incurred by a generating company, in compliance to an event of Change in law, ought to be allowed under Regulation 14(3)(ii) of the 2014 Tariff Regulations. As the letter issued by MoP, GoI is an action by an Indian Governmental Instrumentality, the same falls within the definition of Change in law, as per Regulation 3(9) of the 2014 Tariff Regulations. Judgment dated 27.05.2019 in Appeal No. 195 of 2017 titled as GMR Karmalanga Ltd. & anr. V CERC & ors and Judgment of the Hon'ble Supreme Court in Energy Watchdog vs. CERC & ors (2017) 14 SCC 80 was referred to.

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

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

46. 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, GoI letter dated 2.8.2017, which recommends the replacement of existing old bulbs with LED bulbs, which would result in reduction of about 50% to 90% in energy consumption by lighting. In our view, the letter of the MoP, GoI, as referred to by the Petitioner, is recommendatory in nature and cannot be construed as a change in law event or for compliance to an existing law, to consider the additional capital

expenditure claimed by the Petitioner. Moreover, as pointed out by the Respondents the benefits of replacement of incandescent light with LED lighting system, accrues to the Petitioner. In this background, the additional capital expenditure of Rs.85.08 lakh claimed by the Petitioner is not allowed. It is, however, noticed that the Petitioner has submitted that the old incandescent bulbs have been replaced with LED bulbs. In view of this, the de-capitalisation of Rs 18.60 lakh (Rs. 4.87 lakh in 2017-18 and Rs. 13.74 lakh in 2018-19) in respect of the old bulbs replaced has been allowed.

(C) Assumed Deletion

47. As per 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 capitalization of the said asset, is followed by de-capitalization of the gross value of the old asset. However, in certain cases, where the de-capitalization is proposed to be effected during the future years to the year of capitalization of the new asset, the de-capitalization 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 de-capitalized asset, i.e., escalation rate of 5% per annum from the COD has been considered in order to arrive at the gross value of old asset in comparison to the cost of new asset. In the present petition, year of COD of the generating station was in 1997-98. We have considered the value of 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 replacement of the same. The amount claimed for additional capital expenditure against the asset is multiplied by the derived ratio from above two values i.e., value in year of COD divided by value in capitalized year.

48. The Petitioner, in this petition, has claimed Replacement of PGB coolers and Renovation of Generator & Transformer Protection Relays assets 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 above-mentioned methodology. Accordingly, the 'assumed deletions' allowed for the purpose of tariff are as follows:

(Rs. In lakh)

	Year of claim	**Additional capital expenditure allowed (on accrual basis)**	**Assumed deletion**
Replacement of PGB coolers	2014-15	747.00	(-)325.91
Renovation of Generator & Transformer Protection Relays	2017-18	105.09	(-)39.61
	2018-19	172.62	(-)61.96

(D) De-capitalisation of Spares (part of capital cost)

49. The Petitioner has claimed the following de-capitalization of spares, which are part of capital cost and the same is allowed under Regulation 14(4) of the 2014 Tariff Regulations.

(Rs. in lakh)

2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
(-)113.55	(-)3.62	(-)164.69	(-)116.51	(-)468.53

(E) Discharge of liabilities

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

(Rs. in lakh)

2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
0.00	36.53	47.02	29.29	0.00

51. As the additional capital expenditure of Rs.36.52 lakh towards the Replacement of PGB coolers has been deducted from the un-discharged liability of Rs. 85.01 lakh as in paragraph 32 above, the corresponding discharge of liabilities has not been considered. Accordingly, the discharge of liabilities allowed are as under:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
0.00	36.53	41.00	26.10	0.00

(F) Reconciliation of the actual Additional Capital Expenditure

52. The Petitioner has furnished the reconciliation statement of the actual additional capital expenditure for the 2014-19 tariff period, with books as follows:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	112475.45	116344.33	*19484.80	*20909.61	*31166.78
Closing Gross Block	116344.33	116650.19	*20909.61	*31166.78	*45405.10
Total Additions as per books	3868.88	305.86	1424.81	10257.17	14238.33
Ind-AS Adjustment	0.00	0.00	(-) 1090.05	(-) 2737.19	(-) 3082.44
Net Additions as per IGAAP	3868.88	305.86	334.76	7519.98	11155.89
Less: Exclusions (items not allowable / not claimed)	2849.08	209.19	494.80	1806.24	3735.50
Additional Capital Expenditure	1019.80	96.67	(-) 160.04	5713.74	7420.38
Less: Un-discharged liabilities of additional capital expenditure	117.54	27.87	0.00	15.84	1088.52
Add: Discharges during the year /period	0.00	36.53	47.02	29.29	0.00
Net Additional capital expenditure claimed	**902.26**	**105.32**	**(-) 113.01**	**5727.19**	**6331.86**

*As per IND-AS

(G) Exclusions

53. The summary of exclusions from books of accounts under different heads for the purpose of tariff are shown as follows:

(Rs. in lakh)

Sl. No.	Head of Work/Equipment	Additional capital expenditure claimed under Exclusion				
		2014-15	2015-16	2016-17	2017-18	2018-19
B1	**Capitalization not being claimed**					
1	Chain Hoist W.Palin TrollyB.A-7985-88-1	0.14	0.00	0.00	0.00	0.00
2	Empty cylinder for Helium Gas	0.16	0.00	0.00	0.00	0.00
	Sub-total	**0.31**	**0.00**	**0.00**	**0.00**	**0.00**
B2	**Capital Spares-capitalized**	3334.69	512.89	2065.80	1907.09	3776.11
B3	**Capitalization of MBOA Items**					
1	Furniture and Fixtures	1.33	5.48	0.00	0.00	0.00
2	Office Equipment	1.15	0.08	0.00	0.00	0.91
3	Electrical Installations	0.00	0.00	2.83	0.00	0.00
	Sub-total	**2.48**	**5.57**	**2.83**	**0.00**	**0.91**

Sl. No.	Head of Work/Equipment	Additional capital expenditure claimed under Exclusion				
		2014-15	2015-16	2016-17	2017-18	2018-19
B4	De-capitalization of MBOAs - part of capital cost	(-)9.40	(-)1.51	0.00	0.00	0.00
B5	De-capitalization of spares - Not part of capital cost	(-)476.71	(-)306.30	(-)1542.97	(-)100.29	(-)41.52
B6	De-capitalization of MBOAs - Not part of capital cost	(-)2.29	(-)0.53	0.00	(-)0.53	(-)6.35
B7	Inter Unit Transfer (ITU)	0.00	0.04	0.00	(-)0.04	6.35
B8	Reversal of Liability	0.00	(-)0.96	(-)30.87	0.00	0.00
B9	Overhauling	0.00	0.00	0.00	0.00	0.00
B10	Solar PV System for 24V DC	0.00	0.00	0.00	0.003	0.00
	Total Exclusions (B1 to B10)	**2849.08**	**209.19**	**494.80**	**1806.24**	**3735.50**

(a) Capitalization not being claimed

54. The Petitioner has sought for the exclusion of capitalization of Rs.0.14 lakh and Rs.0.16 lakh for 'Chain Hoist W.Palin Trolly' and 'Empty Cylinder for Helium Gas' respectively in 2014-15. The Petitioner, in justification of the same, has submitted that these works are being claimed under exclusion, as these expenditures are not admissible in terms of the 2014 Tariff Regulations. In view of this, the claim for exclusion is allowed.

(b) Capitalization of Spares

55. The Petitioner has procured capital spares amounting to Rs. 3334.69 lakh in 2014-15, Rs. 512.89 lakh in 2015-16, Rs. 2065.80 lakh in 2016-17, Rs. 1907.09 lakh in 2017-18 and Rs. 3776.11 lakh in 2018-19. The Petitioner has submitted that capitalisation of capital spares, after the cut-off date, are not allowed in terms of the 2014 Tariff Regulations and, therefore, the same has been kept under exclusion. As capitalization of spares over and above initial spares procured after the cut-off date of the generating station are not allowed for the purpose of tariff, as they form part of O&M expenses as and when consumed, the Petitioner has excluded the said amount. Accordingly, the exclusion of the said amount under this head is in order and allowed.

(c) Capitalization of Miscellaneous Bought out Assets (MBOA) Items

56. The Petitioner has capitalised MBOA items amounting to Rs. 1.33 lakh and Rs. 5.48 lakh towards Furniture & Fixtures during the years 2014-15 and 2015-16 respectively. Further, the Petitioner has also capitalised MBOA items amounting to Rs. 1.15 lakh, Rs. 0.08 lakh and Rs. 0.91 lakh towards office equipment during the years 2014-15, 2015-16 and 2018-19 respectively. Further, MBOA items amounting to Rs. 2.83 lakh towards electrical installations in 2016-17 has also been capitalised. The Petitioner has submitted that MBOA items capitalized after the cut-off date are not allowed as per the 2014 Tariff Regulations and, therefore, the same has been kept under exclusion. The exclusion of the above-said amounts is found to be in order and is, therefore, allowed.

(d) De-capitalization of spares (Not part of capital cost)

57. The Petitioner has excluded de-capitalized spares amounting to Rs. 476.71 lakh in 2014-15, Rs 306.30 lakh in 2015-16, Rs. 1542.97 lakh in 2016-17, Rs. 100.29 lakh in 2017-18 and Rs. 41.52 lakh in 2018-19 for the purpose of tariff. The Petitioner, in justification of the same, has submitted that capitalization of spares beyond the cut-off date is not admissible as per the 2014 Tariff Regulations. Accordingly, the capitalization of spares has been claimed under exclusion. Since capitalization of spares brought after the cut-off date is not allowed to form part of the capital cost for the purpose of tariff, the exclusion of de-capitalization of these spares amounting to Rs. 476.71 lakh in 2014-15, Rs. Rs 306.30 lakh in 2015-16, Rs. 1542.97 lakh in 2016-17, Rs. 100.29 lakh in 2017-18 and Rs. 41.52 lakh in 2018-19 is in order and allowed.

(e) De-capitalization of MBOA (Part of capital cost)

58. The Petitioner has claimed exclusion of de-capitalized MBOA amounting to Rs. 9.40 lakh in 2014-15 and Rs. 1.51 lakh in 2015-16 which form part of the capital cost.

It is observed from the submissions of the Petitioner in Form 9Bi, that MBOA items were part of the capital cost allowed in tariff. Since these assets form part of the capital cost, the exclusion, for de-capitalization of these MBOA items, for the said amounts are not allowed.

(f) De-capitalization of MBOA items (Not part of capital cost)

59. The Petitioner has claimed exclusion of de-capitalized MBOA amounting to Rs. 2.29 lakh in 2014-15, Rs.0.53 lakh in 2015-16, Rs. 0.53 lakh in 2017-18 and Rs. 6.35 lakh in 2018-19 which do not form part of the capital cost. As these MBOA items do not form part of the capital cost for the purpose of tariff, the exclusion for de-capitalization of these MBOA items for the said amounts are allowed.

(g) Inter-Unit Transfer (ITU)

60. The Petitioner has claimed exclusion of Inter-unit transfer amounting to Rs. 0.04 lakh in 2015-16, (-) Rs.0.04 lakh in 2017-18 and Rs. 6.35 lakh in 2018-19. In justification of the same, the Petitioner has submitted that as temporary Inter Unit Transfer is not considered for purpose of tariff, the same is kept under exclusion. In view of the above, the exclusion of the said amounts is in order and allowed.

(h) Reversal of Liability

61. The Petitioner has claimed exclusion of reversal of liabilities of (-) Rs. 0.96 lakh in 2015-16 and (-) Rs.30.87 lakh in 2016-17. In justification, the Petitioner has submitted that as tariff is determined on cash basis, the liability reversal has been kept under exclusion. In view of this, the exclusion of the said amounts is allowed.

(i) Solar PV System for 24V DC

62. The Petitioner has sought cost adjustment of the new work for Rs. 0.003 lakh in 2017-18 for Solar PV System for 24 DC. As additional capital expenditure for Solar PV

System for 24V DC has not been allowed in this order, the exclusion of cost adjustment has been allowed.

63. Based on the above discussion, the summary of exclusions allowed/not allowed for the purpose of tariff is as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Exclusions Claimed (A)	2849.08	209.19	494.80	1806.24	3735.50
Exclusions Allowed (B)	2858.47	210.70	494.80	1806.24	3735.50
Exclusion not allowed (A-B)	**(-) 9.40**	**(-) 1.51**	**0.00**	**0.00**	**0.00**

64. Accordingly, the additional capital expenditure allowed for the 2014-19 tariff period is summarised as follows:

(Rs. in lakh)

Sl. No.	**Head of Work /Equipment**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**Total**
A	**Allowed Works**						
1	Phasing out of Halon Fire Fighting System	215.40	0.00	0.00	0.00	0.00	215.40
	Corresponding De-capitalization	(-)5.01	0.00	0.00	0.00	0.00	(-)5.01
2	R&M of electrical system (ST excitation system)	67.57	0.00	0.00	0.00	0.00	67.57
	Corresponding De-capitalization	(-)1.50	0.00	0.00	0.00	0.00	(-)1.50
3	Replacement of PGB coolers	698.51	0.00	0.00	0.00	0.00	698.51
	Corresponding De-capitalization (Assumed deletion)	(-)325.91	0.00	0.00	0.00	0.00	(-)325.91
4	Supply of CCTV	40.84	0.00	0.00	0.00	0.00	40.84
5	Renovation & Modernization (R&M) of Station C&I	0.00	0.00	0.00	8009.70	8942.76	16952.45
	Corresponding De-capitalization	0.00	0.00	0.00	(-)2331.51	(-)2310.58	(-)4642.09
6	Renovation of Generator & Transformer Protection Relays	0.00	0.00	0.00	89.25	146.90	236.15
	Corresponding De-capitalization (Assumed deletion)	0.00	0.00	0.00	(-)39.61	(-)61.96	(-)101.57
	Sub-total (A)	**689.90**	**0.00**	**0.00**	**5727.82**	**6717.12**	**13134.84**
B	**New Works**						
1	Continuous Stack Emission Monitoring System (CSEMS)	0.00	52.97	0.00	1.81	0.00	54.78
2	Solar PV System for 24V DC	0.00	0.00	0.00	0.00	0.00	0.00
3	Installation of LED based light fittings	0.00	0.00	0.00	0.00	0.00	0.00
	Corresponding De-capitalization	0.00	0.00	0.00	(-)4.87	(-)13.74	(-)18.60
	Sub-total (B)	**0.00**	**52.97**	**0.00**	**(-)3.06**	**(-)13.74**	**36.18**
C	De-capitalization of Spares	(-)113.55	(-)3.62	(-)164.69	(-)116.51	(-)468.53	(-)866.89

Sl. No.	Head of Work /Equipment	2014-15	2015-16	2016-17	2017-18	2018-19	Total
	(part of capital cost)						
D	Exclusions not allowed	(-)9.40	(-)1.51	0.00	0.00	0.00	(-)10.91
E	**Sub-total (A + B + C + D)**	**566.95**	**47.85**	**(-)164.69**	**5608.26**	**6234.85**	**12293.22**
F	Discharge of liabilities	0.00	36.53	41.00	26.10	0.00	103.63
	Total additional capital expenditure allowed (E + F)	**566.95**	**84.37**	**(-)123.69**	**5634.36**	**6234.85**	**12396.85**

Capital Cost Allowed for the 2014-19 Tariff Period

65. Accordingly, the capital cost allowed for the purpose of tariff is as follows:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	86840.30	87407.25	87491.62	87367.94	93002.29
Add: Additional Capital Expenditure allowed	566.95	84.37	(-)123.69	5634.36	6234.85
Closing Capital Cost	87407.25	87491.62	87367.94	93002.29	99237.15
Average Capital Cost	87123.78	87449.44	87429.78	90185.12	96119.72

Debt-Equity Ratio

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

"19.(1) For a project declared under commercial operation on or after 1.4.2014 the debt equity ratio would be considered as 70:30 as on COD. If the equity actually deployed is more than 30% of the capital cost equity in excess of 30% shall be treated as normative loan:
Provided that:
(i) where equity actually deployed is less than 30% of the capital cost actual equity shall be considered for determination of tariff:
(ii) the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:
(iii) any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt-equity ratio.
Explanation - The premium if any raised by the generating company or the transmission licensee as the case may be while issuing share capital and investment of internal resources created out of its free reserve for the funding of the project shall be reckoned as paid up capital for the purpose of computing return on equity only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

(2) The generating Company or the transmission licensee shall submit the resolution of the Board of the company or approval from Cabinet Committee on Economic Affairs (CCEA) regarding infusion of fund from internal resources in support of the utilisation made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system as the case may be.
(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014 debt equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered

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

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

67. The gross loan and equity of Rs.43197.35 lakh and Rs.43642.96 lakh respectively as on 31.3.2014 as allowed in order dated 27.1.2017 in Petition No. 308/GT/2014 has been considered as on 1.4.2014. The Petitioner has claimed debt-equity ratio of 70:30 for additional capital expenditure during the 2014-19 tariff period. Accordingly, in terms of Regulation 19(5) of the 2014 Tariff Regulations, the debt-equity ratio of 70:30 has been considered for additional capital expenditure. Accordingly, the details of debt-equity ratio in respect of the generating station as on 1.4.2014 and as on 31.3.2019 are as follows:

	Capital cost as on 1.4.2014 ***(Rs. in lakh)***		**Additional capital expenditure** ***(Rs. in lakh)***		**Total cost as on 31.3.2019** ***(Rs. in lakh)***	
Debt	43197.35	49.74%	8677.79	70.00%	51875.14	52.27%
Equity	43642.96	50.26%	3719.05	30.00%	47362.01	47.73%
Total	**86840.30**	**100.00%**	**12396.85**	**100.00%**	**99237.15**	**100.00%**

Return on Equity

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

"24. Return on Equity:
(1) Return on equity shall be computed in rupee terms on the equity base determined in accordance with regulation 19.
(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations transmission system including communication system and run of river hydro generating station and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage: Provided that:
(i) in case of projects commissioned on or after 1st April 2014 an additional return of 0.50% shall be allowed if such projects are completed within the timeline specified in Appendix-I:
(ii) the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:

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

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

"25. Tax on Return on Equity:
(1) The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee as the case may be. The actual tax income on other income stream (i.e. income of non-generation or non-transmission business as the case may be) shall not be considered for the calculation of "effective tax rate".
(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:
Rate of pre-tax return on equity = Base rate / (1-t) Where "t" is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business as the case may be and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT) "t" shall be considered as MAT rate including surcharge and cess.
Illustration.
(i) In case of the generating company or the transmission licensee paying Minimum Alternate Tax (MAT) @ 20.96% including surcharge and cess: Rate of return on equity = 15.50/(1-0.2096) = 19.610%
(ii) In case of generating company or the transmission licensee paying normal corporate tax including surcharge and cess:
(a)Estimated Gross Income from generation or transmission business for FY 2014-15 is Rs 1000 crore.
(b)Estimated Advance Tax for the year on above is Rs 240 crore.
(c) Effective Tax Rate for the year 2014-15 = Rs 240 Crore/Rs 1000 Crore = 24%
(d)Rate of return on equity = 15.50/ (1-0.24) = 20.395%

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

transmission licensee as the case may be. Any under-recovery or over recovery of grossed up rate on return on equity after truing up shall be recovered or refunded to beneficiaries or the long-term transmission customers/DICs as the case may be on year to year basis.”

70. The Petitioner is entitled for Return on Equity for the generating station in terms of Regulations 24 and 25 of the 2014 Tariff Regulations. The Petitioner has submitted that it is liable to pay income tax at MAT rates and has claimed following effective tax rates for the 2014-19 tariff period:

Year	**Claimed effective tax rate (in %)**	**Grossed up ROE [(Base Rate)/(1-t)] (in %)**
2014-15	20.961	19.610
2015-16	21.342	19.705
2016-17	21.342	19.705
2017-18	21.342	19.705
2018-19	21.549	19.758

71. The Respondent UPPCL has submitted that the Petitioner has not submitted the detailed calculation of the effective tax rate. The Respondents, TPDDL, BRPL and BYPL, have submitted that the Petitioner may be directed to pay back the extra payment made under Regulation 49 of the 2014 Tariff Regulations, in the garb of Deferred Tax liabilities for the period prior to 2009. In response, the Petitioner has submitted that it was paying MAT for the 2014-19 tariff period and the same has been considered for grossing up of RoE in terms of the provisions of the 2014 Tariff Regulations. The Petitioner has placed reliance on Regulation 49 of the 2014 Tariff Regulations, according to which, the Deferred Tax liability for the years prior to 2009, is not barred from recovery from the beneficiaries. It has also submitted that the Deferred Tax liability is being recovered from the beneficiaries as and when paid to the Income tax department. It has also pointed out that the issue of Deferred Tax liability had already been decided by the Commission in its order dated 7.2.2021 in Petition No. 294/MP/2019 (NHPC Limited v Punjab State Power Corporation Limited).

72. We have considered the matter. The Petitioner has claimed Return on Equity for the 2014-19 tariff period, after grossing up the base rate of 15.50% with Effective Tax rates (based on MAT rates) for respective years in terms of Regulation 25 of the 2014 Tariff Regulations and hence the same has been considered. Accordingly, ROE has been worked out as follows:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Normative Equity - Opening	43642.96	43813.05	43838.36	43801.25	45491.56
Addition of Equity due to additional capital expenditure	170.09	25.31	(-)37.11	1690.31	1870.46
Normative Equity - Closing	43813.05	43838.36	43801.25	45491.56	47362.01
Average Normative Equity	43728.00	43825.70	43819.80	44646.40	46426.79
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Tax Rate for the year	20.961%	21.342%	21.342%	21.342%	21.549%
Rate of Return on Equity (Pre-Tax)	19.610%	19.705%	19.705%	19.705%	19.758%
Return on Equity (Pre-Tax) annualized	**8575.06**	**8635.85**	**8634.69**	**8797.57**	**9173.00**

Interest on Loan

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

"26. Interest on loan capital:

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

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

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

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

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

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

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

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

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

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

(9) In case of dispute any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations 1999 as amended from time to time including statutory re-enactment thereof for settlement of the dispute:

Provided that the beneficiaries or the long term transmission customers /DICs shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan."

74. Interest on loan has been computed as under:

a. Gross normative loan amounting to Rs. 43197.35 lakh as considered in order dated 27.1.2017 in Petition No. 308/GT/2014 has been considered as on 1.4.2014.

b. Cumulative repayment amounting to Rs. 41920.24 lakh, as considered in order dated 27.1.2017 in Petition No. 308/GT/2014, has been considered as on 1.4.2014.

c. Accordingly, the net normative opening loan as on 1.4.2014 is Rs.1277.11 lakh.

d. The weighted average rate of Interest on loan is based on the details of actual loan portfolio and rate of interest furnished by the Petitioner, duly adjusted for interest capitalised during the respective years.

e. The repayment for the respective years of the 2014-19 tariff period has been considered equal to the depreciation allowed for that year.

f. Interest on loan has been calculated on the normative average loan of the year by applying the weighted average rate of interest.

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

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Gross opening loan	43197.35	43594.22	43653.28	43566.70	47510.75
Cumulative repayment of loan up to previous year	41920.24	41704.57	41982.85	42144.98	42039.32
Net Loan Opening	1277.11	1889.65	1670.42	1421.71	5471.43

	2014-15	2015-16	2016-17	2017-18	2018-19
Addition due to additional capital expenditure	396.87	59.06	(-)86.58	3944.05	4364.40
Repayment of loan during the year	103.09	281.87	277.41	1639.08	8644.63
Less: Repayment adjustment on account of de-capitalization	318.76	3.59	115.28	1744.74	1998.37
Net Repayment of loan during the year	(-)215.67	278.29	162.13	(-)105.66	6646.27
Net Loan Closing	1889.65	1670.42	1421.71	5471.43	3189.56
Average Loan	1583.38	1780.03	1546.07	3446.57	4330.49
Weighted Average Rate of Interest of loan	9.5160%	9.3513%	9.2900%	7.9386%	2.5065%
Interest on Loan	**150.67**	**166.46**	**143.63**	**273.61**	**108.54**

Depreciation

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

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

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

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

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

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

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

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

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

(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-II to these regulations for the assets of the generating station and transmission system:

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

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

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

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

77. Depreciation has been worked out considering the admitted capital expenditure and accumulated depreciation up to 31.3.2014 as follows:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Average Capital Cost	87123.78	87449.44	87429.78	90185.12	96119.72
Value of freehold land	68.76	68.76	68.76	68.76	68.76
Aggregated Depreciable Value	78349.51	78642.61	78624.92	81104.72	86445.86
Remaining Aggregate Depreciable value at the beginning of the year	508.22	1107.76	812.81	3163.42	8644.63
Number of completed years at the beginning of the year	20.07	21.07	22.07	23.07	24.07
Balance useful life at the beginning of the year	4.93	3.93	2.93	1.93	0.93
Rate of depreciation	0.1183%	0.3223%	0.3173%	1.8175%	8.9936%
Depreciation (annualized)	**103.09**	**281.87**	**277.41**	**1639.08**	**8644.63**
Cumulative depreciation adjustment on account of de-capitalization	409.53	4.61	148.22	1779.14	2569.33
Cumulative depreciation (at the end of the period)	77534.85	77812.11	77941.29	77801.23	83876.54

Note: Cumulative depreciation as on 31.3.2014 is Rs. 77841.29 lakh.

Operation & Maintenance Expenses

78. Regulation 29(1)(c) of the 2014 Tariff Regulations specifies the norms for O&M expenses for the thermal generating stations as under:

	2014-15	2015-16	2016-17	2017-18	2018-19
The norms for O&M expenses as per Regulation 29(1) in Rs. lakh / MW	14.67	15.59	16.57	17.61	18.72

79. Based on the above norms, the O&M expenses claimed by the Petitioner is as follows:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
12172.87	12936.27	13749.45	14612.43	15533.48

80. As the O&M expenses claimed by the Petitioner is in accordance with Regulation 29(1)(c) of the 2014 Tariff Regulations, the same is allowed.

Water Charges

81. The Petitioner has claimed Water charges during the 2014-19 tariff period in terms of Regulation 29(2) of 2014 Tariff Regulations, which is as under:

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

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

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

82. The Petitioner has furnished the details of the Water charges paid by it during the 2014-19 tariff period, as under:

(Rs. lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
61.20	58.20	53.75	56.06	49.87

83. The Commission, vide RoP of the hearing dated 17.3.2021, had directed the Petitioner to furnish the following additional information:

(i) *Documentary evidence for water allocation / contracted;*

(ii) *Detailed basis/calculation for actual quantity of water consumed for the 2014-19 period;*

(iii) *Basis for rate (₹/M3) charged by the State authorities;"*

(iv) *Any other charges (such as watch and ward charges) included in the Water charges in addition to the charges calculated based on the (i) & (ii) above;*

(v) *Auditor certificate to the effect that such other charges as in (iv) above were booked under the head 'Water charges' during the period from 2014-19;*

(vi) *Reconciliation statement of water charges claimed in the petition with the audited Financial Statement.*

84. In compliance, the Petitioner submitted the documentary evidence for water allocation/ contracted. The Petitioner further submitted that out of total water charges 15% (apportioned based on ratio of the capacity of generating station) were allocated to this generating station. The Petitioner has also submitted the month-wise year-wise detailed basis/calculation for actual quantity of water consumed for the 2014-19 tariff period. The rate of water charges as per notification of UP Irrigation Department is Rs. 3.12 per 1000 cubic feet up to 15.7.2011, which has been revised to Rs. 12.48 per 1000 cubic feet on consumption basis and the rate of royalty as per the notification of UP Irrigation Department is Rs. 115000 per cusec per annum up to 15.7.2011 which has been revised to Rs. 600000 per cusec per annum on consumption basis. Further, the Petitioner has submitted that there is no other charge such as watch and ward charges, included in water charges. By order dated 27.1.2017 in Petition No. 308/GT/2014, water charges of Rs.55.34 lakh per year was allowed for the 2014-19 tariff period, on provisional basis. The Petitioner has claimed water charges based on actual water consumption duly audited as under:

Sl. No.		Units	2014-15	2015-16	2016-17	2017-18	2018-19
1	Type of Cooling Tower	-	Natural Draft				
2	Water Allocation/ Contracted	cusec	6.16	5.86	5.41	5.64	5.02
3	Actual water Consumption	1000 cft	194244	184742	170664	177947	158274

Sl. No.		Units	2014-15	2015-16	2016-17	2017-18	2018-19
4	Rate of Water Charge	Rs./1000 cft	12.48	12.48	12.48	12.48	12.48
5	Water Charges = (3) x (4)	Rs. lakh	24.24	23.06	21.30	22.21	19.75
6	Rate of Royalty Charge	Rs. lakh/ cusec/year	6	6	6	6	6
7	Royalty Charges = (2) x (6)	Rs. lakh	36.96	35.15	32.47	33.86	30.11
8	**Water charges paid**	**Rs. lakh**	**61.20**	**58.20**	**53.75**	**56.06**	**49.87**

85. The Petitioner has furnished all supporting documents related to the allocation/ contracted capacity of water, basis for the rate charged by the State Authorities, along with the Auditor certificate in respect of the water charges paid and claimed as above. On prudence check of the details and the computation furnished, we allow the water charges claimed by the Petitioner above, in terms of Regulation 29(2) of 2014 Tariff Regulations.

Capital spares

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

> *"29(2) The Water Charges and capital spares for thermal generating stations shall be allowed separately:*
>
> *xxxx*
>
> *Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalization or consumption of stores and spares and renovation and modernization."*

87. The Petitioner has submitted that in order to meet the customers demand and to maintain high machine availability at all times by the generating station, units/ equipment's are taken under overhaul/ maintenance and inspected regularly for wear and tear. During such works, spares parts of equipment which became damaged/ unserviceable are replaced/ consumed so that the machine continue to perform at expected efficiency on sustained basis. Further, the Petitioner submitted that the

capital spares consumed are 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 modernization. The Petitioner has submitted the year-wise details of the capital spares consumed by the generating station during the 2014-19 tariff period in terms of the last proviso to Regulation 29(2) of 2014 Tariff Regulations, in Form 17, as follows:

2014-15

(Rs. In lakh)

	Amount
CAPITAL SPARES GT OUT OF PACK	96.73
ANALOGUE INPUT MODULE 6DSI 70	8.22
K-CLOSED LOOP CONTROL MODULE	8.59
LP HP BY PASS PILOT VALVE DRG	1.16
BINARY CALC MOD;	0.72
PLATE, DG-10540/0	4.27
FLAME DETECTOR TY	2.47
OS/DAS PROCESS M	2.40
TGF FABRIC MATERI	0.25
216 KV SURGE ARRE	0.57
IMPELLER B-410-16	8.76
OS/DAS PROCESS M	9.18
HEAT EXCHANGER,DG	5.12
400 KV COMPOSITE	1.67
216 KV SURGE ARRE	1.68
LIGHTNING ARRESTO	8.41
COMPLETE PUMP ASS	5.34
DP TRANSMITTER 0-	1.61
P-TRANSMITTER 0-1	0.28
FRP HOLLOW BLADE	26.19
L-CASING:INNER RI	396.64
Grand Total	**590.26**

2015-16

(Rs. in lakh)

	Amount
MOTOR WITH SPRING CHARGE MECHANI	1.64
LOGISTAT CP 80 CPU, ALU130	1.09
FUSING AND MATCHING; ASI 12	0.65
BINARY EXT MOD; 6DS1 719-8AA	0.24
DIAG.SWIRL.10616/1TIN-H12C34K17/11K22C52	12.36
245 KV,1600 A CURRENT TRANSFORMER	3.79
EXCITORS: LOGICSTAT CP	9.62
GEAR REDUCER ASSY (RATIO 11.18:1)	5.82
IMPELLER B-410-1600 D-NO. 3.1.5	8.76
BURNER ASSEMBLY, 10601/1, TIN-H11E55C46.	238.86

	Amount
OS/DAS PROCESS MONITORS FOR GP	2.45
P-TRANSMITTER 0-100 BAR	0.28
ELECTRO-HYD. ACTUATOR ESSHI500/60/25 VH	14.50
DP TRANSMITTER RANGE 0-2500MMWCL	0.32
BINARY CALCULATION MODULE: 6DS1 717-8AA	8.05
CARBON FIBRE SHAFT FOR STAGE-1 COOLING T	1.50
Grand Total	**309.92**

2016-17

(Rs. in lakh)

	Amount
245 KV,1600 A CURRENT TRANSFORMER	9.21
BINARY CALCULATION MODULE: 6DS1 717-8AA	1.21
CAPITAL SPARES GT OUT OF PACKAGE	5.20
COMPRESS. END HOLLOW SHFT, DG-44200	215.64
DP TRANSMITTER RANGE 0-2500MMWCL	0.32
FLAME DETECTOR TYE IR X2 BFI MAKE	2.72
GLCB-110-5: COMPLETE BLOWER ASSEMBLY	1.40
HV BSNG+MTL PRT:1PH 167MVA 400/220/33KV	1.22
LEAD ACID VRLA BATTERY: C10, ABS	0.92
MOVING COIL GT EHC	9.77
N30-2X5: GUIDE BLADE T4-20 ST	130.53
N30-2X5: JOINT BLADE TYPE-1T4-20-ST	12.28
POSITION TRANSMITTER; ELEC HYD CON	0.20
P-TRANSMITTER 0-100 BAR	0.28
SIMATIC S5-95U CENTRAL PROCESSOR OF	0.68
ST - 6 STATOR BLADE, D.NO 42606/001	6.20
ST-3 RTR BL.,14603/_,H11H70D_/H12F18K	607.91
ST-3 STATOR BLADE, 12643/1	457.17
TIE ROD-GAS TURBINE.ROTOR.,44223/1.	195.69
TILE SUPP. RING, 10530/2-18TIN-H10J20G	21.24
V94.2: FUEL OIL 3WAY BALL VALVE, DN 40PN100	20.67
V94.2: MANHOLE INSERT, H00A67A36	6.37
V94.2: VALVE SPINDLE, H10D56A31	0.73
VT 6600/110 1PH 2 POLE 100VA 5/3P	0.10
Grand Total	**1707.66**

2017-18

(Rs. in lakh)

	Amount
SELF PROPELLED ART.BOOMLIFT	17.38
GENERATOR SHAFT SEAL FOR TE AND EE	3.14
COMB BASKET:PRE-MIX GAS BURNER, TYPE-H B	27.90
V94.2:RETURN LINE COMPLETE, H10J13F51	7.16
V94.2:NOZZLE COMPLETE, H00B45E77	13.90
LEAD ACID VRLA BATTERY: C10, 200AH, ABS	1.57
DIFF. PRESS REGULATOR DN50 FN40 GS C25 2802-6-01 A	1.07
FLAME DETECTOR TYE IR X2 BFI MAKE	5.91
CT WITH CURRENT SENSING RELAY D60LA3	38.47
245 KV,1600 A CURRENT TRANSFORMER	7.59
SUPPLY AIR FAN B11.01 GLC-B-5 070	4.35

	Amount
CVT 220 KV WITH TERMINAL CONNECTORS	5.14
TRANSFORMER 1600KVA 6600/433V	18.66
P-TRANSMITTER 0-100 BAR	0.28
OS/DAS PROCESS MONITORS FOR GP	2.45
245 KV,1600 A CURRENT TRANSFORMER	61.83
Grand Total	**216.79**

2018-19

(Rs. in lakh)

	Amount
B.F. VALVE 300NB TYPE E1 M/O WITH ACTUATOR VALVE	1.77
CAPITAL SPARES GT OUT OF PACKAGE	4.68
83642-4.0-18BX2: FAN ASSY 288IN HP-4-8	8.46
TGF FABRIC MATERIAL NON MET. EXP. JTS.	0.34
V94.2: Pilot Valve Comp. H00B48G04	3.89
V94.2: Valve Bushing Compl. H00B48G12	2.92
V94.2: Pilot Ball Valve, DN40PN40	7.08
216 KV SURGE ARRESTOR COMPLETE	1.14
TRANSFORMER DIFF RELAY: RET670, MAKE: A	4.53
12KV TAN DELTA AND CAPACITANCE TEST KIT	11.74
ELECT.ACTUATOR-E25 MOD, MAKE-ARGUS	6.07
MOTR 1SQL 6.6KV 200KW:2P:V1-TEFC:AVMW400L4	15.28
O/H KIT FOR 21KV SF6 GCB HEK3	26.30
V94.2: TURBINE INNER CASING, H11D66J23	218.90
V94.2: DIFFU BALL VALVE, H11C80E87,100PN40	8.83
V94.2: TILE SUPPORT RING, H10J20G63	3.74
V94.2: BURNER INSERT RING, H10H21B35	5.54
ELECT.ACTUATOR-E25 MOD, MAKE-ARGUS	3.03
V94.2: MIXING CHAMBER, H11E92A82	134.31
GLCB-110-5: COMPLETE BLOWER ASSEMBLY	4.12
SPINDLE, DG- 06900/18, TIN- H00A61D51.	2.16
V94.2: RETURN LINE COMPLETE, H10J13F51	11.10
V94.2: NOZZLE COMPLETE, H00B45E77	21.55
V94.2: BEARING COMPLETE, H00A68A59	2.60
Grand Total	**510.06**

88. The summary of the capital spares consumed by the Petitioner is as follows:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
590.26	309.92	1707.66	216.79	510.06

89. We have examined the list of the capital spares consumed by the Petitioner. The capital spares comprises of (i) spares which form part of the capital cost and (ii) spares which do not form part of the capital cost of the project. In respect of capital spares which form part of the capital cost of the project, the Petitioner has been recovering tariff since their procurement and, therefore, the same cannot be allowed

as part of the additional O&M expenses. Accordingly, only those capital spares, which do not form part of the capital cost of the project, are being considered. It is pertinent to mention that the term ‘capital spares’ has not been defined in the 2014 Tariff Regulations. The term capital spares, in our view, is a piece of equipment, or a spare part, of significant cost that is maintained in inventory for use in the event that a similar piece of critical equipment fails or must be rebuilt. Keeping in view, the principle of materiality and to ensure standardised practices in respect of earmarking and treatment of capital spares, the value of capital spares exceeding Rs. 1 (one) lakh, on prudence check of the details furnished by the Petitioner in Form-17 of the petition, has been considered for the purpose of tariff. The Commission is also of the view that spares of value less than Rs. one lakh would normally form part of normal repair and maintenance expenses. Based on this, the details of the capital spares considered for the 2014-19 tariff period is summarized as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Capital spares not part of capital cost claimed	590.26	309.92	1707.66	216.79	510.06
Value of spares below Rs. 1(one) lakh disallowed on individual basis	1.82	1.49	3.24	0.28	0.34
Net total value of capital spares considered	588.44	308.43	1704.42	216.51	509.72

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

(Rs. In lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Net total value of capital spares considered	588.44	308.43	1704.42	216.51	509.72
Less: Salvage value @ 10%	58.84	30.84	170.44	21.65	50.97
Net Capital spares allowed	**529.60**	**277.59**	**1533.98**	**194.86**	**458.74**

91. Based on the above, the summary of the total O&M expenses allowed as per Regulation 29 of 2014 Tariff Regulations is as follows:

(Rs. In lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses as per Regulation 29(1)	**12172.87**	**12936.27**	**13749.45**	**14612.43**	**15533.48**
Water Charges	61.20	58.20	53.75	56.06	49.87
Capital Spares	529.60	277.59	1533.98	194.86	458.74
Total O&M Expenses allowed	**12763.67**	**13272.06**	**15337.18**	**14863.35**	**16042.09**

Impact of wage revision

92. The Petitioner has submitted that wage revision of employees was due from 1.1.2017 and it had incurred additional O&M expenses due to increase in employee cost on account of wage revision of its employees, Central Industrial Security Forces (CISF) and Kendriya Vidyalaya (KV) Staff from 1.1.2016 to 31.3.2019. The Petitioner has submitted that the total impact due to wage revision is Rs.3815.36 lakh and, therefore, it may be allowed to recover the impact of wage revision, as additional O&M expense from Respondents as one-time payment in exercise of the power under provisions of Regulations 54 and 55 of the 2014 Tariff Regulations.

93. The Commission vide RoP of the hearing dated 17.3.2021 had directed the Petitioner to furnish, amongst others, the following:

(a) The detailed break-up of the actual O&M expenses for the tariff period 2014-19 under various sub-heads (as per Annexure-A) after including the claimed wage revision impact for employees of the Petitioner and employees of KV/DAV/CISF;

(b) The similar break up of actual O&M expenses including wage revision impact for Corporate Centre/other offices (as per Annexure- B) shall be provided for the tariff period 2014-19 along with the allocation of the total O&M expenses to various stations under construction, operational stations along with basis of allocating such expenditure.

94. In compliance with the above directions, the Petitioner vide affidavit dated 19.4.2021 has furnished the detailed break-up of the actual O&M expenses for the 2014-19 tariff period under various sub-heads after including the claimed wage revision impact for employees of the Petitioner and employees of KV/DAV/CISF. The audited statement of additional costs in respect of the employees of the generating station is as follows:

(Rs. in lakh)

Period		**NTPC Employees**	**CISF Staff**	**KV Staff**	**Total**
01.01.2016 - 31.03.2016	Pre-Revised	-	167.87	17.67	185.54
	Post Revision	-	210.63	21.42	232.05
	Wage revision impact	-	42.76	3.75	46.51
2016-17	Pre-Revised	827.15	651.4	71.46	1550.01
	Post Revision	1521.16	817.35	86.62	2425.13
	Wage revision impact	694.01	165.95	15.16	875.12
2017-18	Pre-Revised	3357.4	672.21	82.13	4111.74
	Post Revision	4119.9	843.46	99.56	5062.92
	Wage revision impact	762.5	171.25	17.43	951.18
2018-19	Pre-Revised	5536.67	703.85	71.01	6311.53
	Post Revision	7284.84	883.16	86.08	8254.08
	Wage revision impact	1748.17	179.31	15.07	1942.55
Total Impact during the period	**Pre-Revised**	**9721.22**	**2195.33**	**242.27**	**12158.82**
	Post Revision	**12925.9**	**2754.6**	**293.68**	**15974.18**
	Wage revision impact	**3204.68**	**559.27**	**51.41**	**3815.37**

95. The actual O&M expenses incurred during the period as furnished by the Petitioner vide affidavit dated 19.4.2021 is as follows:

(Rs. in lakh)

Year	**Actual Audited O&M expenses**
2014-15	9331.52
2015-16	8543.15
2016-17	11597.23
2017-18	10266.41
2018-19	11107.71
Total	**50846.01**

96. The Respondent UPPCL in its reply has mainly submitted as follows:

(i) The total expenditure incurred on employee cost for the 2014-19 tariff period is Rs.175.19 crore;

(ii) Based on the O&M expense norms, recovery of Rs.174.14 crore would have been made on account of employee cost;

(iii) There is a shortfall in of Rs.1.05 crore on account of employee cost;

(iv) An additional claim of Rs. 38.15 crore has been made towards incremental expenditure on salaries on account of implementation of 7th pay Commission;

(v) There is excess claim of Rs.37.10 crore by the Petitioner which may been disallowed;

(vi) The total O&M expenses (excluding expenditure allowed separately) for the 2014-19 tariff period is Rs. 503.38 crore, whereas the normative expenditure claim for 2014-19 tariff period is Rs. 690.05 crore;

(vii) There is a saving of Rs. 186.67 crore during the 2014-19 tariff period as actuals are less than the normative expenditure claimed;

(viii) Thus, the claim of Rs.38.15 crore may be disallowed in view of the Commission's observation in Statement of Reasons to the 2014 Tariff Regulations.

97. The Petitioner has submitted that the impact of employee pay revision on account of 7th Pay Commission for CISF and 3rd Pay Revision Committee for Central Public Sector Undertakings were not in existence and/ or incorporated, while the 2014 Tariff Regulations were being specified by the Commission. Therefore, the same ought to be allowed *de hors* the under/over recovery of O&M expenses by the generating company. The Petitioner has further stated that correlating the grant of relief on account of wage revision due to 7th Pay Commission to the actual O&M expenses of the Petitioner would amount to dis-incentivizing efficient generation, as generating companies who are inefficient in managing their O&M activities would be granted the entire expenses, whereas the generating companies which are efficient would only be granted partial relief and such a dispensation would be contrary to the object and purport of Section 61 of the Electricity Act, 2003 and the Tariff Policy, 2016.

98. With regard to impact of wage revision in O&M expenses, paragraph 29(4) of the draft 2014 Tariff Regulations had observed as under:

"29 (4) The impact of wage revision if any, during the tariff period shall be allowed in due consideration of Government of India, Department of Public Enterprise guidelines and considering following percentage of O&M as employee cost:

Coal/Lignite based Stations: 40%
Gas/liquid fuel based stations: 32%
Hydro Generating Stations: 46%
Transmission system: 40%"

99. The above draft Regulation was not finally included in the 2014 Tariff Regulations. However, the Commission in paragraph 33.2 of Statement of Objects and Reasons (SOR) of the 2014 Tariff Regulations had observed the following:

"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."

100. It is observed that the above methodology as indicated in SOR suggests comparison of normative O&M expenses with actual O&M expenses on year-to-year basis. However, in this respect, the following facts need consideration:

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

101. In consideration of above facts, the Commission finds it appropriate to compare the normative O&M expenses with the actual O&M expenses for a longer duration, so

as to capture the variation in sub-heads of O&M expenses, due to above mentioned facts. Accordingly, it is decided that for ascertaining as to whether the O&M expense norms provided under the Regulations are inadequate/ insufficient to cover all justifiable O&M expenses, including employee expenses, after wage revision. The comparison of the normative and actuals O&M expenses shall be made for three years i.e., 2016-19, on combined basis, which is commensurate with the wage revision claim being spread over the three years.

102. In view of the above, the following is the comparison of the normative O&M expenses allowed to the generating station for the period 2016-19 versus the actual O&M expenses incurred after considering the impact of wage revision:

(Rs. in lakh)

Year	**Normative O&M expenses as per Regulations**	**Actual Audited O&M expenses**	**Difference between normative and actual O&M expenses**	**Wage revision impact claimed**
2014-15	12172.87	9331.52	NA	NA
2015-16	12936.27	8543.15	(-)4393.12	46.51
2016-17	13749.45	11597.23	(-)2152.23	875.12
2017-18	14612.43	10266.41	(-)4346.02	951.18
2018-19	15533.48	11107.71	(-)4425.78	1942.55
Total	**69004.50**	**50846.01**	**(-)15317.14**	**3815.37**

103. It is observed from the table above that for the years for which the wage revision impact has been claimed by the Petitioner i.e., for the period 2015-16 to 2018-19, the already allowed normative O&M expenses, on combined basis, are in excess of the actual expenses incurred by the Petitioner. As such, the Commission is not inclined to allow the recovery of wage revision through additional O&M expenses, since the normative O&M expenses allowed to the generating station in terms of the Regulations, in terms of the Regulations, is sufficient to cater to the requirement of the impact of wage revision.

Impact of Goods and Service Tax (GST)

104. The Petitioner has claimed the impact of GST as a change in law under Regulation 3(9) read with Regulation 14(3) of 2014 Tariff Regulations. The Petitioner stated that the impact of increase in rate of indirect tax from 15% to 18% has been calculated on all taxable services and being claimed for the period 1.7.2017 to 31.3.2019. The Petitioner has claimed Rs. 210.79 lakh towards impact of GST for the period 1.7.2017 to 31.3.2019.

105. The Respondent, UPPCL submitted that the Petitioner has not submitted the detailed computation of its claim. The Respondents, BRPL and BYPL highlighted inconsistency in claims of the Petitioner submitting that though the Petitioner has sought relief of 3%, the amount calculated by the Petitioner towards GST impact is around 2.5%. Further, the Respondents submitted that although there may have been an incremental impact due to GST on certain items, there would have been instances where tax burden may have been reduced on account of introduction of GST.

106. The Petitioner has submitted that O&M expenses comprise of Employee Wages and Generation Administration and Other expenses (renamed as “Other Expenses” in the books of the company after introduction of IND AS). These inter alia include Repair and Maintenance and other overheads of the Station. The Petitioner has bifurcated the Generation Administration and other expenses into Material consumed Taxable services and Exempt Services. The amount claimed by the Petitioner is only on account of differential in rate of tax for Taxable services (i.e. under erstwhile Service Tax @15% and in GST @18%). The amount claimed is calculated as follows:

(Rs. in lakh)

Nature	Reference	2017-18	2018-19
Material	A	495.33	812.83
Services- Taxable	B	3282.58	5008.14
Services- Exempt	C	3534.45	4782.70
Total GAD Expenses	D=A+B+C	7312.36	10603.68
Impact of 3% additional tax on Taxable Services due to GST	**E=Bx0.03/1.18**	**83.46**	**127.33**

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

<u>Operational Norms</u>

108. The Petitioner has claimed operational norms for the generating station in Form 3 of the Petition. The Respondents BRPL and BYPL have submitted that the Petitioner has not shared the data of all the operational parameters, on monthly basis, for the 2014-19 tariff period. They have also submitted that the financial gains that have accrued to the Petitioner have to be passed on to the Respondents, as well as its consumers. The Respondents have further submitted that the sharing of this information is necessary to indicate that the Petitioner is adhering to the provisions of the 2014 Tariff Regulations which are binding upon the Petitioners.

109. The Petitioner has submitted that the contentions of the Respondents regarding the non-sharing of the gains, if any, is incorrect. The Petitioner has submitted that in terms of the Commission's order dated 30.12.2019 in Petition No. 284/RC/2019, the financial gains for the 2014-19 tariff period were recalculated by the Petitioner and shared with all the beneficiaries, during the month of February 2020.

110. In view of the above, the operational norms for the generating station claimed by the Petitioner in terms of the Regulation 36 of the 2014 Tariff Regulations, is allowed as under:

Normative Annual Plant Availability Factor (NAPAF)	85%
Gross Station Heat Rate (kcal/kwh)	2000.00
Auxiliary Power Consumption %	2.5%

Interest on Working Capital

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

"28. Interest on Working Capital:
(1) The working capital shall cover
(b) Open-cycle Gas Turbine/Combined Cycle thermal generating stations
(i) Fuel cost for 30 days corresponding to the normative annual plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel;
(ii) Maintenance spares @ 30% of operation and maintenance expense specified in regulation 29; and
(iii) Liquid fuel stock for 15 days corresponding to the normative annual plant availability factor and in case of use of more than one liquid fuel, cost of main liquid fuel duly taking into account mode of operation of the generating stations of gas fuel and liquid fuel";
(iv) Receivables equivalent to two months of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel;
(v) Operation and maintenance expenses for one month."

Fuel Cost for computation of working capital

112. The Fuel cost for 30 days and Energy charges for two months have been calculated based on the Gross Calorific Value (GCV) and price of the gas, as adopted in order dated 27.1.2017 in Petition No. 308/GT/2014. Further, Liquid Fuel stock for 15

days has also been considered, as adopted in order dated 27.1.2017 in Petition No. 308/GT/2014. Accordingly, the fuel cost for 30 days, Liquid Fuel stock for 15 days and Energy charges allowed are as follows:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Fuel cost for thirty (30) days	18368.63	18368.63	18368.63	18368.63	18368.63
Liquid Fuel stock for fifteen (15) days	1.88	1.88	1.88	1.88	1.88
Energy charges for two (2) months	37247.19	37349.23	37247.19	37247.19	37247.19

Working capital for Maintenance Spares

113. Regulation 28(1)(b)(ii) of the 2014 Tariff Regulations provides for Maintenance spares @ 30% of the O&M expenses. Accordingly, maintenance spares have been worked out and allowed as follows:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
3829.10	3981.62	4601.15	4459.01	4812.63

Working capital for Receivables

114. Regulation 28(1)(b)(iv) of the 2014 Tariff Regulations provides for Receivables for two months. Accordingly, the Receivable component for working capital is allowed as follows:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Energy Charges (two months)	37247.19	37349.23	37247.19	37247.19	37247.19
Fixed Charges (two months)	5074.41	5211.47	5574.60	5771.73	7213.44
Total	**42321.60**	**42560.70**	**42821.79**	**43018.92**	**44460.63**

Working capital for O & M Expenses (1 month)

115. Regulation 28(1)(b)(v) of the 2014 Tariff Regulations provides for O&M Expenses for one month. Accordingly, the O&M Expenses for working capital is allowed as follows:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
1063.64	1106.01	1278.10	1238.61	1336.84

Rate of interest on working capital

116. In terms of clause (3) of Regulation 28 of the 2014 Tariff Regulations, the Bank rate of 13.50% as on 1.4.2014, tariff has been considered. Accordingly, Interest on Working Capital has been allowed as follows:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Working capital for Fuel cost for 30 days	18368.63	18368.63	18368.63	18368.63	18368.63
Working capital for Liquid Fuel Stock	1.88	1.88	1.88	1.88	1.88
Working capital for O & M expenses (1 month)	1063.64	1106.01	1278.10	1238.61	1336.84
Working capital for Maintenance Spares	3829.10	3981.62	4601.15	4459.01	4812.63
Working capital for Receivables	42321.60	42560.70	42821.79	43018.92	44460.63
Total Working Capital	65584.85	66018.83	67071.55	67087.05	68980.61
Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
Interest on Working capital	**8853.95**	**8912.54**	**9054.66**	**9056.75**	**9312.38**

Annual Fixed Charges

117. Based on the above, the annual fixed charges approved for the generating station for the 2014-19 tariff period are summarised as follows:

Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	103.09	281.87	277.41	1639.08	8644.63
Interest on Loan	150.67	166.46	143.63	273.61	108.54
Return on Equity	8575.06	8635.85	8634.69	8797.57	9173.00
Interest on Working Capital	8853.95	8912.54	9054.66	9056.75	9312.38
O&M Expenses	12763.67	13272.06	15337.18	14863.35	16042.09
Total annual fixed charges approved	**30446.45**	**31268.79**	**33447.57**	**34630.37**	**43280.65**
Total annual fixed charges approved in order dated 27.1.2017 in Petition No. 308/GT/2014	29895.99	30907.64	32014.21	33630.27	35088.46

118. The difference between the annual fixed charges already recovered by the Petitioner and the annual fixed charges determined by this order, as above, shall be

adjusted in terms of the relevant clauses of Regulation 8 of the 2014 Tariff Regulations.

119. Petition No. 288/GT/2020 is disposed of in terms of the above.

Sd/-	Sd/-	Sd/-
(Pravas Kumar Singh)	**(I.S.Jha)**	**(P.K. Pujari)**
Member	**Member**	**Chairperson**