

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 300/GT/2020

Coram:

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

Date of Order: 02nd September, 2021

IN THE MATTER OF

Petition for revision of tariff of Feroze Gandhi Unchahar Thermal Power Station, Stage-II (420 MW) for the 2014-19 tariff period, after truing-up exercise

AND

IN THE MATTER OF

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

...Petitioner

Vs

1. Uttar Pradesh Power Corporation Limited,
Shakti Bhawan, 14, Ashok Marg,
Lucknow- 226001

2. Rajasthan Urja Vikas Nigam Limited,
Vidyut Bhawan, Janpath,
Jaipur- 302005

3. Tata Power Delhi Distribution Limited,
Grid Sub-station, 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-134109



7. Punjab State Power Corporation Limited,
The Mall, Patiala-147001

8. Himachal Pradesh State Electricity Board Limited,
Kumar Housing Complex Building-II,
Vidyut Bhawan, Shimla-171004

9. Power Development Department,
Govt. of J & K, Civil Secretariat,
Srinagar

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

11. Uttarakhand Power Corporation Limited,
Urja Bhavan, Kanwali Road,
Dehradun-248001

.....**Respondents**

Parties Present:

Ms. Swapna Seshadri, Advocate, NTPC
Ms. Ritu Apurva, Advocate, NTPC
Shri A.S.Pandey, NTPC
Shri E.P.Rao, NTPC
Shri S.P.Kesarwani, NTPC
Shri R.B.Sharma, Advocate, BRPL
Ms. Megha Bajpeyi, BRPL
Shri Manish Garg, UPPCL

ORDER

This petition has been filed by the Petitioner, NTPC Ltd. (in short, “NTPC”) for revision of tariff of Feroze Gandhi Unchahar Thermal Power Station, Stage-II of 420 MW (hereinafter referred to as “the generating station”) for the period from 1.4.2014 to 31.3.2019 in accordance with Regulation 8 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”).

2. The generating station with a capacity of 420 MW comprises of two units of 210 MW each. Unit-I of the generating station achieved COD on 1.1.2001 and Unit-II on 1.3.2000. The Commission vide its order dated 31.3.2017 in Petition



No.289/GT/2014 approved the tariff of the generating station for the 2014-19 tariff period. Subsequently, the order dated 31.3.2017 in Petition No. 289/GT/2014 was modified vide Corrigendum order dated 24.5.2017 by considering the secondary fuel oil for computation of Interest on working capital. Accordingly, the annual fixed charges allowed vide order dated 31.3.2017 read with corrigendum dated 24.5.2017 is as under:

	(Rs. in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	3407.47	3481.50	3556.58	3564.41	3573.31
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	7680.65	7760.78	7805.73	7810.02	7814.31
Interest on Working Capital	932.40	975.21	1019.63	1065.23	1112.78
O&M Expenses	10261.58	10891.58	11563.58	12277.58	13037.78
Compensation Allowance	84.00	147.00	210.00	210.00	210.00
Total	22366.10	23256.07	24155.52	24927.24	25748.17

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

“(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. In terms of the above regulations, the Petitioner vide affidavit dated 3.12.2019 has sought truing-up of tariff for the 2014-19 tariff period and has claimed the following annual fixed charges:

	(Rs in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	3419.58	3431.33	3436.58	3441.10	3491.12
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	7688.67	7733.44	7734.84	7730.56	7772.36
Interest on Working Capital	4605.61	4654.10	4761.85	4919.98	5136.25
O&M Expenses (incl. of water charges & capital spares)	10354.67	11009.97	11668.85	12449.74	13033.84
Compensation Allowance	84.00	147.00	210.00	210.00	210.00
Sub-total	26152.53	26975.83	27812.11	28751.37	29643.56
Impact of Pay Revision	0.00	20.78	1176.34	1410.90	1669.63
Impact of GST	0.00	0.00	0.00	91.77	157.66
Ash Transportation Expenditure	0.00	0.00	0.00	0.00	2537.22
Total	26152.53	26996.61	28988.45	30254.04	34008.07



5. The Respondent No.1, Uttar Pradesh Power Corporation Ltd (UPPCL) vide affidavit dated 1.6.2020 and Respondent No.4, BSES Rajdhani Power Ltd (BRPL) vide affidavit dated 10.8.2020 have filed their replies. The Petitioner vide its affidavit dated 9.11.2020 has filed its rejoinder to the aforesaid replies. The matter was heard on 13.8.2020 and the Commission vide Record of the Proceedings had directed the Petitioner to submit certain additional information with copies to the Respondents. In response, the Petitioner vide affidavit dated 2.11.2020 and 12.2.2021 has filed the additional information with copy to the Respondents. Subsequently, the petition was re-listed on 13.4.2021 and the Commission, after hearing the parties, sought clarifications with regard to the claim of the Petitioner for additional O&M expenses considering the impact of wage revision and the details of Gross Calorific Value (GCV) for the purpose of interest on working capital (IWC) and reserved its order in the matter. In compliance to the directions, the Petitioner vide affidavit dated 31.5.2021 has filed the additional information. Taking into consideration the submissions of the parties and the documents available on record, we proceed to true-up the tariff of the generating station, on prudence check, as stated in the subsequent paragraphs.

Capital Cost

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

“9(3) The Capital cost of an existing project shall include the following:

- (a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;*
 - (b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and*
 - (c) expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15.*
- xxx”*

7. The Commission vide its order dated 31.3.2017 in Petition No. 289/GT/2014 had approved the annual fixed charges of the generating station for the 2014 tariff period considering the opening capital cost of Rs.130591.02 lakh as on 1.4.2014. The



Petitioner, in the present petition, has claimed tariff based on the above said opening capital cost. Further, the Petitioner has furnished the value of capital cost and liabilities as on 1.4.2014 as per books in Form-9E. The details of liabilities and the capital cost have been reconciled with the information available on record of the Commission as under:

	(Rs in lakh)		
	As per Form-9E	As per record of the Commission	Difference
Capital cost as on 1.4.2014 as per books	133366.15	133366.15	0.00
Liabilities included above	10.67	10.67	0.00

8. Out of un-discharged liabilities of Rs.10.67 lakh included in gross block as on 1.4.2014, the un-discharged liabilities corresponding to the approved capital cost of Rs 130591.02 lakh as on 1.4.2014 is Rs.7.61 lakh (balance un-discharged liabilities of Rs. 3.06 lakh pertains to assets/works disallowed/not claimed for the purpose of tariff).Further, out of the un-discharged liabilities of Rs.7.61 lakh deducted as on 1.4.2014, the Petitioner has discharged an amount of Rs 4.59 lakh in 2014-15 and Rs.3.02 lakh in 2018-19. These discharges along with discharges corresponding to assets admitted on cash basis during the 2014-19 tariff period has been considered as additional capital expenditure during the respective years. Accordingly, the capital cost of Rs.130591.02 lakh (on cash basis) as on 1.4.2014 approved vide order dated 31.3.2017 in Petition No. 289/GT/2014, has been considered for the purpose of tariff.

Additional Capital Expenditure

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

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

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

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

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



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

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

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

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

(viii) *xxxx;*

(ix) *xxxx; and*

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

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

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

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

(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-capitalization shall be deducted from the value of gross fixed asset and corresponding loan as well as equity shall be deducted from outstanding loan and the equity respectively in the year such de-capitalisation takes place, duly taking into consideration the year in which it was capitalized."

10. The Commission in its order dated 31.3.2017 in Petition No. 289/GT/2014 had allowed the following additional capital expenditure (on projection basis) for the 2014-19 tariff period:

(Rs in lakh)						
Sl. No.	Head of Work/ Equipment	2014-15	2015-16	2016-17	2017-18	2018 - 19
1	Inert Gas Fire Protection System for Stage-II (a)	130.00	0.00	0.00	0.00	0.00
	De-capitalization of Inert Gas Fire Protection System for Stage-II (b)	(-)46.80	0.00	0.00	0.00	0.00



	Net capitalization allowed (a+b)	83.20	0.00	0.00	0.00	0.00
2	Retrofitting of voltas make 6.6 kV SF 6 circuit breaker with Vacuum circuit breaker of same ratings. (c)	(-)28.00	(-)28.00	0.00	0.00	0.00
3	AWRS system Stage-II (d)	0.00	1450.00	0.00	0.00	0.00
4	11 kV double ckt line for AWRS of Arkha Ash Dyke. (e)	0.00	98.75	0.00	0.00	0.00
5	Down Stream Slope Protection & Balance of Peripheral Drains (f)	0.00	0.00	0.00	145.00	0.00
	Total (a+b+c+d+e+f)	55.20	1520.75	0.00	145.00	0.00

11. The additional capital expenditure (on cash basis) claimed by the Petitioner for the 2014-19 tariff period is as under:

	<i>(Rs in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Closing Gross Block as per audited books of accounts	350012.34	351053.45	142132.91*	420904.96*	439538.68*
Less: Opening Gross Block as per audited books of accounts	343553.14	350012.34	133694.43*	142132.91*	420904.96*
Additional capital expenditure as per audited books of accounts	6459.20	1041.11	8438.47	278772.06	18633.72
Less: Additional capital expenditure pertaining to other stages of project	5585.96	715.52	7271.72	277701.36	15691.50
Additional capital expenditure pertaining to this station	873.24	325.59	1166.75	1070.70	2942.21
Less: Adjustment due to IND-AS	0.00	0.00	831.99	649.03	1073.86
Additional capital expenditure as per books (as per IGAAP)	873.24	325.59	334.76	421.67	1868.35
Less: Exclusions	647.23	264.82	345.82	562.74	1025.73
Additional capital expenditure claimed (on accrual basis)	226.01	60.77	(-) 11.06	(-) 141.07	842.62
Less: Un-discharged liabilities	39.80	4.54	7.75	0.00	0.00
Add: Discharge of liabilities	4.59	7.33	2.66	12.29	8.24
Net additional capital expenditure claimed (on cash basis)	190.80	63.56	(-) 16.15	(-) 128.78	850.86

*as per IND-AS

12. The break-up of the year-wise additional capital expenditure (on cash basis) claimed for the 2014-19 tariff period in the present petition is as under:

			<i>(Rs in lakh)</i>				
Sl. No	Head of work / Equipment	Regulation	2014-15	2015-16	2016-17	2017-18	2018-19
1	Allowed Works						
A	Ash Related Works						

i	Downstream Slope Protection & Balance of Peripheral drain	14(3)(iv)	2.43	0.00	0.00	0.00	0.00
B	Change in Law						
I	Inert Gas Fire protection system for Stage-II	14(3)(ii)	199.78	3.99	0.00	0.00	0.00
	Corresponding de-capitalization		0.00	0.00	(-)39.45	0.00	0.00
ii	11 kV double circuit line for AWRS of Arkha Ash Dyke.	14(3)(ii)	0.00	62.92	23.57	4.24	0.00
	Sub Total (1)		202.21	66.91	(-)15.88	4.24	0.00
2	New Claims						
i	Real Time data Transmission to PCB	14(3)(ii)	0.00	0.00	0.16	0.00	0.00
ii	Cold Fog Dust Suppression system for Secondary Crusher	14(3)(ii)	0.00	0.00	0.00	0.00	10.15
iii	ESP Stage-II	14(3)(ii)	0.00	0.00	0.00	0.00	891.50
	Sub-Total (2)		0.00	0.00	0.16	0.00	901.64
3	De-capitalization of Spares - part of capital cost	14(4)	(-)16.00	(-)10.68	(-)3.09	(-)145.31	(-)59.02
4	Sub-total (1) + (2) + (3)		186.21	56.23	(-)18.81	(-)141.07	842.62
5	Discharge of liabilities	14(3)(vi)	4.59	7.33	2.66	12.29	8.24
6	Total additional capital expenditure claimed		190.80	63.55	(-)16.15	(-)128.78	850.86

13. The admissibility of the actual additional capital expenditure claimed by the Petitioner is discussed in the following paragraphs.

Downstream Slope Protection & Balance of Peripheral Drains

14. Against the projected additional capitalization of Rs.145.00 lakh in 2017-18 allowed for this asset under Regulation 14(3)(iv) of the 2014 Tariff Regulations, vide order dated 31.3.2017 in Petition No.289/GT/2014, the Petitioner has claimed actual additional capital expenditure of Rs.2.43 lakh in 2014-15, with un-discharged liability as 'nil'. In justification of the same, the Petitioner has submitted that out of the projected additional capitalization vide order dated 31.3.2017, an amount of Rs.2.43 lakh was capitalized in 2014-15 and the balance works in respect of the asset shall be capitalized during the next tariff period i.e. 2019-24 based on the requirement from time to time. The Respondent, BRPL has submitted that the claim for actual additional capital expenditure of Rs.2.43 lakh can be allowed only when the works have been completed. In response, the Petitioner has clarified that the deferred work



of downstream slope protection comprises of modification work of ash dyke and the said work is a continuous process.

15. The submissions have been considered. It is noticed that the claim of the Petitioner is in respect of the work related to slope protection of ash dyke. As the Petitioner had envisaged major works related to slope protection and peripheral drains during the year 2017-18, the Commission had allowed projected additional capital expenditure of Rs.145.00 lakh for this work. It is evident from the submissions of the Petitioner that the requirement of major works for this asset had been deferred to the next tariff period (2019-24) and the Petitioner was able to manage the ash dyke with a preliminary expenditure of Rs.2.43 lakh in 2014-15. This, in our view, is a clear case of estimation of the expenditure going wrong. However, considering the fact that the actual additional capital expenditure of Rs.2.43 lakh incurred in 2014-15 is in respect of works related to ash dyke which is continuous in nature, we allow the same under Regulation 14(3)(iv) of the 2014 Tariff Regulations. However, the expenditure deferred for the next tariff period (2019-24) shall be dealt with in accordance with provisions of the 2019 Tariff Regulations.

Inert Gas Fire Protection System

16. The Commission vide its order dated 31.3.2017 in Petition No.289/GT/2014 had allowed projected additional capital expenditure of Rs.83.20 lakh (additional capital expenditure of Rs.130.00 lakh and corresponding de-capitalization of Rs.46.80 lakh) in 2014-15 towards Inert Gas Fire Protection System for Stage-II, under Regulation 14(3)(ii) of the 2014 Tariff Regulations i.e. provision related to Change in law. The Commission in the said order allowed the said expenditure in 2014-15 and had directed the Petitioner to furnish reasons/ justifications for the increase in cost (from Rs.134 lakh approved for 2009-14 period to Rs.234 lakh proposed in 2014-19 period) at the time of truing-up of tariff. The Petitioner, in this

petition, has claimed actual additional capital expenditure of Rs.164.32 lakh (i.e. Rs. 199.78 lakh in 2014-15 and Rs.3.99 lakh in 2015-16 along with corresponding de-capitalization of Rs.39.45 lakh in 2016-17) for this asset and has submitted the following justification:

“...it is humbly submitted that as per LoA, award value for the above work was ₹234.05 lakh. The work was envisaged to be completed in two phases. Accordingly, ₹130.00 lakh was projected to be capitalized in 2009-14 tariff period which was approved by the Commission. The balance ₹104 lakh was projected to be capitalized in 2014-19 tariff period. The work projected in 2009-14 tariff period could not be capitalized during the period even though most of the work was completed. Therefore, the Petitioner projected the total work (i.e. both phases) in the FY 2014-15. Subsequently, the total work could be completed and capitalized in FY 2014-15 with an capital expenditure of ₹239.58 lakh (including un-discharged liability of ₹39.80 lakh). The minor deviation from award cost is on account of changes during actual execution vis-a-vis the estimated values. The Hon'ble Commission may be pleased to allow the same.”

17. The Respondent BRPL has submitted that the Petitioner had not furnished any reason/ justification for the increase in the claim towards cost of inert gas system for Central Control Room (CCR) & Central Equipment Room (CER) from Rs.134.00 lakh to Rs.234.00 lakh during the 2009-14 tariff period or in this petition for the 2014-19 tariff period. The Respondent, UPPCL has submitted that though the asset was capitalized in 2014-15, the same has been de-capitalized in 2016-17, which implies that the beneficiaries are required to pay tariff on the de-capitalized amount for two years and the same is, therefore, prejudicial to interests of beneficiaries. UPPCL has also stated that the Commission had rejected the claim of the Petitioner for increase in the projected additional capitalization of Rs.234.00 lakh in 2014-15 for this asset and had allowed the additional capitalization of only Rs.83.20 lakh (on net basis) in its order dated 31.3.2017 in Petition No. 289/GT/2014 and, hence, only this amount may be allowed. In its rejoinder, the Petitioner while reiterating its submission made in the petition, has also submitted that de-capitalization of an old asset can be undertaken after capitalization of a new asset. It has also stated that the process of de-capitalization of an old asset involves a number of activities like formation of a committee, valuation of the old asset and finalization of methodology for de-

capitalization and approval of de-capitalization value by management etc. The Petitioner has further stated that major work of this asset was completed during 2014-15 and the balance work was completed during 2015-16 and accordingly, the corresponding de-capitalization of old asset has been done during 2016-17.

18. The submissions have been considered. It is noticed from the order dated 31.3.2017 in Petition No.289/GT/2014 that the Petitioner had claimed additional capital expenditure of this asset under 'Change in law' and had submitted that in terms of Montreal Protocol on substances that deplete ozone layer, plant using ozone depleting substances are required to phase out these systems and adopt systems that do not deplete the ozone layer. It is further noticed that in the order dated 23.5.2012 in Petition No. 270/2009 (tariff of Auraiya GPS in 2009-14), the additional capitalization of this asset was allowed on the ground that the same is required as statutory compliance under National Fire Protection Association Standard on Clean Agent Fire Extinguishing system (NFPA-2001). In this background and considering the justification for increase in the cost as submitted by the Petitioner, we allow the total actual additional capital expenditure of Rs.199.78 lakh in 2014-15 and Rs.3.99 lakh in 2015-16 under Regulation 14(3)(ii) of 2014 Tariff Regulations i.e. change in law. However, considering the submissions of the Respondent, UPPCL that the year of de-capitalization should match with the year of additional capital expenditure and to prevent recovery of tariff corresponding to an asset which was removed from service, the corresponding de-capitalization of (-) Rs.39.45 lakh effected in 2016-17 by the Petitioner, is shifted to the year 2014-15 i.e. the year in which major additional capital expenditure has been done.

11 kV double ckt line for AWRS of Arkha Ash dyke

19. Against the projected additional capital expenditure of Rs.98.75 lakh allowed in 2015-16 towards 11 kV double ckt line for AWRS of Arkha Ash Dyke by order



dated 31.3.2017 in Petition No.289/GT/2014, the Petitioner has claimed actual additional capital expenditure of Rs.90.73 lakh (on cash basis) i.e. Rs.62.92 lakh in 2015-16, Rs.23.57 lakh in 2016-17 and Rs.4.24 lakh in 2017-18. It is noticed that the Petitioner had incurred additional capital expenditure of Rs.95.27 lakh, on accrual basis for this asset, against the projected additional capitalization of Rs.98.75 lakh as allowed for 2015-16 under Regulation 14(3)(ii) of the 2014 Tariff Regulations vide order dated 31.3.2017 in Petition No.289/GT/2014. In justification of the same, the Petitioner has submitted that the Commission in its order dated 31.3.2017 in Petition No. 289/GT/2014 had allowed the capitalization of the said expenditure under 'Change in law' for compliance of the directions of the U.P. Pradushan Nigam Board. It has also stated that out of the expenditure of Rs.98.75 lakh allowed, major work was completed during 2015-16 and the expenditure of Rs.67.46 lakh was capitalized and balance work was capitalized in the years 2016-17 and 2017-18. The Respondent, BRPL has submitted that the Petitioner has incurred additional expenditure of Rs.62.93 lakh in 2015-16, Rs.23.57 lakh in 2016-17 and Rs.4.24 lakh in 2017-18 including liability of Rs.4.54 lakh which has been discharged during 2017-18. The Respondent has pointed out that the work has been completed in 2017-18 and accordingly, the total amount incurred for this work can be capitalized only in 2018-19, after getting the work completion report from the Petitioner.

20. The matter has been considered. The claim of the Petitioner for capitalization of expenditure pertaining to 11 kV double ckt line for AWRS of Arkha Ash dyke in 2015-16 was approved vide order dated 31.3.2017 in Petition No. 289/GT/2014, under Regulation 14(3)(ii) of the 2014 Tariff Regulations. However, there is no categorical assertion from the Petitioner as to whether the asset was put to use in 2015-16 i.e. the year during which major additional capital expenditure of Rs.67.46 lakh has been effected in books. In our view, major additional capital expenditure

against an asset should be capitalized in books when the same is put to use. In the absence of information regarding the year in which the asset has been put to use, we allow the additional capitalization of Rs.90.73 lakh in 2017-18 (i.e. year in which last capitalization entry of Rs.4.24 lakh has been effected in books) under Regulation 14(3)(ii) of the 2014 Tariff Regulations.

Real Time Data transmission to CPCB

21. The Petitioner has claimed actual additional capital expenditure of ₹0.16 lakh (on cash basis) in 2016-17 towards Real Time Data transmission to the Central Pollution Control Board (CPCB) under Regulation 14(3)(ii) of the 2014 Tariff Regulations, along with un-discharged liability of Rs.7.75 lakh, since an amount of Rs.7.91 lakh has been capitalized against this asset, on accrual basis. The Petitioner, in justification of the same, has submitted that in order to comply with the directions of letter of CPCB dated 21.7.2015, issued under Section 5 of the Environment (Protection) Act, 1986, the installation of equipment for real time data transmission from the generating station to CPCB (relating to AAQMS, CEMS and EQMS) is a statutory requirement. It has also stated that the work was completed and an expenditure of Rs.7.91 lakh (including liabilities of Rs.7.75 lakh) was capitalized in 2016-17. The Respondent, BRPL has submitted that since the Petitioner had already installed online emission & effluent monitoring system, it is only required to establish connectivity for the submission of 24x7 online monitoring data to SPCBs/PCCs and CPCB and the claim of Rs.7.91 lakh for this work is highly exaggerated. The Respondent while pointing out that nothing has been mentioned as to when the Letter of Award (LOA) was issued for this work, has submitted that the perusal of letter dated 21.7.2015 of CPCB shows that the Petitioner was directed to comply with the same by 30.6.2015. Accordingly, the Respondent has submitted that the additional capital expenditure of Rs.7.91 lakh claimed in 2016-17 may be

rejected. In response, the Petitioner has clarified that the liability which was provided on the last date of 2016-17 was discharged in the following year i.e. 2017-18.

22. The matter has been considered. The claim of the Petitioner pertains to the additional expenditure incurred towards 'Real Time Data transmission' to Central Pollution Control Board. As per the letter dated 21.7.2015 of CPCB, the generating station has been directed to comply with the requirement of transmission of real time data (regarding AAQMS, CEMS and EQMS of the generating station) to CPCB. Since this is a statutory requirement, we allow the actual additional cash capital expenditure of Rs.0.16 lakh in 2016-17 under Regulation 14(3)(ii) of the 2014 Tariff Regulations.

Cold Fog Dust Suppression System for Secondary Crusher

23. The Petitioner has claimed actual additional capital expenditure of Rs.10.15 lakh in 2018-19 for 'Cold Fog Dust Suppression System for Secondary Crusher' under Regulation 14(3)(ii) of the 2014 Tariff Regulations. The Commission, vide ROP of the hearing dated 13.8.2020, directed the Petitioner to furnish proper justification in support of the additional capital expenditure of Rs.10.15 lakh in 2018-19 and Rs.8.29 lakh in 2019-20 claimed for the said asset along with the relevant notification of statutory authority. In response, the Petitioner has submitted that the crusher house in Coal Handling Plant (CHP) is a coal dust prone area and is adjacent to the boundary of the generating station and outside the boundary, there are villages in the nearby area. It has stated that in order to meet the norms for Particulate Matter (PM) emission in air as per National Ambient Air Quality Standards dated 18.11.2009, cold fog system has been implemented and this technology is to optimize the application of water to capture dust fines floating in air. According to the Petitioner, by this approach, very fine water droplets (mist-defined as dry fog) are sprayed in the air where the dust particles are airborne and when the water droplets and dust particles



collide, agglomerates are formed. These agglomerates become too heavy to remain airborne and they settle. This kind of fog systems provides highly effective and inexpensive dust capture mechanism and has a low cost of operation. The Petitioner has further submitted that adoption of this technology would help in minimizing the water requirement in the generating station as per MOEF&CC notification dated 7.12.2015 on new environmental norms. Accordingly, the Petitioner has prayed to allow the additional capital expenditure claimed under Regulation 14(3)(ii) of the 2014 Tariff Regulations as the same is installed to comply with the existing law for meeting the ambient air quality (AAQMS).

24. The Respondent BRPL has submitted that the Petitioner has not submitted any notification whatsoever, in justification of its claim and, therefore, the claim is liable to be rejected. The Respondent UPPCL has submitted that claim of the Petitioner is not supported with any specific rules or regulation under which the said expenditure has been incurred. The Respondent has submitted that the Commission may direct the Petitioner to justify the requirement of this expenditure in terms of specific Rules/ Regulations, if any, or otherwise, the expenditure may be met from the Compensation Allowance claimed by the Petitioner for the generating station.

25. We have examined the matter. The Petitioner, in justification of its claim for additional capitalization of Rs.10.15 lakh in 2018-19 and Rs.8.29 lakh in 2019-20 towards 'Cold Fog Dust Suppression System for Secondary Crusher' has furnished the CPCB notification dated 18.11.2009 pertaining to National Ambient Air Quality Standards. This notification indicates that the particulate matter sizes and concentration in the ambient air is 100 mg/Nm^3 for any industrial establishment in general. The Petitioner has not furnished the level of existing particulate matter concentration/ dust near CHP before the installation of the dust suppression system and has also not justified as to how this notification can be construed as a 'change in

law' event. In our view, the dust suppression in CHP is a usual phenomenon. The Petitioner has not furnished any justification for postponing the implementation of the dust suppression by water sprinkling up to the year 2018-19 towards compliance of CPCB notification dated 18.11.2009. In justification of other submissions of the Petitioner namely, minimizing the water requirement in the generating station as per the new Environmental norms of MOEF&CC notification dated 7.12.2015, the Petitioner has not furnished any documentary evidence which mandate the compliance to new norms by this generating station. In this background, we do not consider the installation of dust suppression system claimed under 'change in law event' as a justifiable expenditure under Regulation 14(3)(ii) of the 2014 Tariff Regulations. Therefore, actual additional capital expenditure of Rs.10.15 lakh in 2018-19 for 'Cold fog Dust Suppression System for Secondary Crusher' is not allowed.

ESP Stage-II

26. The Petitioner has claimed actual additional capital expenditure of Rs.891.50 lakh in 2018-19 for 'ESP STG-II' under Regulation 14(3)(ii) of the 2014 Tariff Regulations. In justification of the same, the Petitioner has submitted the following:

"MoEF, GoI vide notification dated 7.12.2015 has notified new environmental norms. As per notification, outlet particulate matter emission levels for units installed before December 31, 2003 has to be limited to 100 mg/m³. To comply with this statutory requirement, it has been decided to carry out upgradation of ESPs of FGUTPS Stage-II(2x210MW) to meet the revised emission limit. The total award value of the contract is around Rs 40 Cr. A part of the work has been completed and capitalized during FY 2018-19. The balance work shall be completed in subsequent years. Hon'ble Commission may be pleased to allow the same."

27. The Commission vide ROP of hearing dated 13.8.2020 directed the Petitioner to furnish the information on the following:-

- (i) *The applicable norms for outlet Particulate Matter emission levels for units of 210 MW prior to the MOEFCC notification dated 7.12.2015;*
- (ii) *OEM guaranteed and PG Test performance of the ESP in terms of the efficiency and outlet Particulate Matter emission levels in mg/Nm³;*
- (iii) *Detailed note with regard to the bidding process followed including the scope of work as per RFP documents, the number of bidders, the negotiations held with the lowest bidder*



to further reduce the awarded cost etc. and any other relevant information as deemed necessary by the Petitioner;

- (iv) To clarify as to whether the plant has started meeting the emission norm of 100 mg/Nm³ after incurring the claimed expenditure of Rs 8.92 crore. If no, then the justification for claiming the part expenditure which has not resulted into the desired goal of achieving the Particulate Matter emission of 100 mg/Nm³. As some of the generating stations are meeting the norms of outlet particulate matter emission levels of 100 mg/Nm³ without any major investment on ESP, the Petitioner shall clarify as to whether it had approached the CEA for any expert opinion or guidelines;

28. In response, the Petitioner has clarified as under:

- (i) The applicable norm for outlet Particulate Matter emission levels for units of 210 MW prior to the MOEFCC notification dated 7.12.2015 was 150 mg/Nm³ and the generating station is required to comply with the new norms of 100 mg/Nm³ by October 2022. A copy of the Consent to Operate (CTO) dated 1.2.2018 issued by UP Pollution Control Board (UPPCB) under Air (Prevention and Control of Pollution) Act, 1981 has been submitted by the Petitioner. UPPCB has prescribed the particulate matter emission norm that existed before the MOEF&CC notification dated 7.12.2015 i.e. 150 mg/Nm³;
- (ii) OEM i.e. M/s BHEL guaranteed collection efficiency of 99.928% with all fields in service condition. The Design emission level was 150 mg/Nm³. Summary page of the technical report of the Performance Guarantee (PG) test and Design Parameters on ESP of Unit-4 (i.e. Stage-II) has been submitted;
- (iii) Bids for ESP R&M package were invited under two stages bidding (Stage-I: Techno Commercial Bid and Stage-II: Price Bid) under International Competitive Bidding (ICB) process. The outcome of the bidding process was as under:

No. of parties who purchased the bidding documents	14
No. of parties who submitted their Techno Commercial bid (Stage-I)	8
No. of bidders who qualified for submission of Price Bid (stage-II)	7 (Seven) – as per details below: 1. BHEL (M/s Bharat Heavy Electricals Ltd, India) 2. NGSL (M/s NTPC-GE Power Services Pvt. Ltd, India) 3. THERMAX (M/s Thermax Ltd, Pune, India) 4. TPL (M/s Tata Projects Ltd., Secunderabad, India) 5. SEPCOIII (M/s SEPCOIII Electric Power



	Construction Corporation, Qingdao, China) 6. ZTETCL (M/s Zhejiang Tengy Environmental Technology Co. Ltd., Zhuj, China) and 7. MARUBENI (M/s Marubeni Corporation, Tokyo, Japan)
Lowest Bidder	M/s NTPC GE Power Services Pvt Ltd
Quoted Price / Award price	Rs.4367.49 Lakh (excluding taxes and duties)

(iv) The scope of work covered under ESP R&M package included design, engineering, manufacturing, inspection and testing, CFD modelling, physical flow modelling, packing, forwarding to site, unloading, pre-assembly, assembly, dismantling of existing equipment as required, erection, supervision, pre-commissioning, gas distribution test, trial operation, testing & commissioning and performance testing of the equipment/ system and the supply of mandatory spares for the complete package for Renovation & retrofitting of existing Electrostatic Precipitators (ESPs) of Units # 3 & 4 (2 x 210 MW) of the generating station. In negotiation, no further reduction was offered by the lowest bidder i.e. M/s NTPC GE Power Services Pvt Ltd (NGSL);

(v) Up-gradation work of ESP of the generating station has been carried out to meet the norms of outlet particulate matter emission levels of 100 mg/Nm³ prescribed by MOEF&CC vide its notification dated 7.12.2015. There are Four (04) passes in ESP of each unit. Up-gradation work of ESP is generally performed on one pass at a time by isolating that pass. Up-gradation work of one-one passes of both the units of the generating station were completed and were put in service during 2018-19. Accordingly, Rs.8.92 crore was capitalized during 2018-19. After up-gradation work of one-one passes of both the units of the generating station, emission level of both the units has reduced substantially and meets the emission norm of 100 mg/Nm³ based on the coal quality and loading of the unit. As the partially modified system of ESP have been put to use in both the units (one pass each) reducing the overall emission levels of the generating station with desired results, it justifies the claim of the Petitioner for capitalization of part expenditure. Design emission level of the generating station was 150mg/Nm³ and without any R&M of ESP, it would not be possible to bring down the emission level to prescribed level of 100mg/Nm³ on sustained basis without depending on the coal quality. In view of above, part capitalization of Rs.8.92 crore may be allowed to be capitalized in 2018-19. In all similar sized/ configuration units i.e. 200/ 210 MW such as



Unchahar-I, Korba-I, Singrauli-I, VSTPS-I, Kahalgaon-I, Ramagundam-I, necessary investments have already been made for R&M of ESPs to meet the revised emission norms w.r.t. to particulate emission.

29. The Respondent, BRPL has submitted that as the Petitioner has not furnished complete details of the existing ESP of the generating station, it may be directed to file complete details along with the copy of the contract as the total award value of the contract is Rs.40 crore (approx.). The Respondent has further submitted that the Petitioner may be directed to provide details of the action plan (both short term and long term) prepared for meeting the statutory conditions prescribed by CPCB, along with details of the actual expenditure incurred, including de-capitalization for each of the up-gradation and retrofitting works related to ESP. The Respondent, UPPCL has submitted that since the purpose of incurring the expenditure is to limit the Particulate Matter emission levels to 100 mg/Nm³, it is required to be assessed if the said objective would be met by part capitalization of expenditure i.e. 20% (approx.) of the contract award amount and only in case the objective is met, the capitalization is justifiable. The Respondent has further submitted that the Petitioner may be directed to substantiate as to how the capitalization of Rs.891.50 lakh towards ESP is beneficial to the beneficiaries or otherwise, the additional capitalization of this expenditure may be deferred till the modification work of ESP is completed and the objective for incurring the expenditure is achieved.

30. The matter has been considered. Ministry of Environment, Forest & Climate Change (MOEF&CC) vide notification dated 7.12.2015 has notified the Environment (Protection) Amendment Rules, 2015 amending/ introducing the standards for emission of environmental pollutants which are to be followed by all existing as well as future thermal power plants. By this notification, the limits for particulate matter have been reduced from 150 mg/Nm³ to 100 mg/Nm³ for units of 210 MW. We

observe that the Petitioner had filed Petition No. 98/MP/2017 for approval of expenditure of Rs.351.00 crore towards the installation/ up-gradation of various Emission Control Systems including ESP System, in compliance of the MOEF&CC notification dated 7.12.2015 in its project viz., Singrauli STPS. Accordingly, the Commission in order dated 20.7.2018 had directed the following:

“48. Therefore, a mechanism needs to be devised for addressing the issues like identification of suitable technology for each plant for implementation of ECS, its impact on operational parameters and on tariff, and the recovery of additional capital and operational cost. The Commission in this regard directs the CEA to prepare guidelines specifying;

- (a) Suitable technology with model specification for each plant, with regard to implementation of new norms;*
- (b) Operational parameters of the thermal power plants such as auxiliary consumption, O&M expenses, Station Heat Rate etc., consequent to the implementation of ECS;*
- (c) Norms of consumption of water, limestone, ammonia etc., required for operation of the plants after implementation of ECS;*
- (d) Any other detailed technical inputs.*

49. Based on the guidelines and operational parameters decided by CEA, the Commission shall undertake prudence check and grant the tariff for the capital and operational expenditure on ECS in respect of the generating stations regulated by the Commission. The Commission may, if required, specify detailed guidelines in this regard.”

31. Regulation 29 of the 2019 Tariff Regulations (applicable for the 2019-24 tariff period) pertaining to additional capitalization on account of revised emission standards provides as under:

“29. Additional Capitalization on account of Revised Emission Standards:

- (1) A generating company requiring to incur additional capital expenditure in the existing generating station for compliance of the revised emissions standards shall share its proposal with the beneficiaries and file a petition for undertaking such additional capitalization.*
- (2) The proposal under clause (1) above shall contain details of proposed technology as specified by the Central Electricity Authority, scope of the work, phasing of expenditure, schedule of completion, estimated completion cost including foreign exchange component, if any, detailed computation of indicative impact on tariff to the beneficiaries, and any other information considered to be relevant by the generating company.*
- (3) Where the generating company makes an application for approval of additional capital expenditure on account of implementation of revised emission standards, the Commission may grant approval after due consideration of the reasonableness of the cost estimates, financing plan, schedule of completion, interest during construction, use of efficient technology, cost-benefit analysis, and such other factors as may be considered relevant by the Commission.*



(4) After completion of the implementation of revised emission standards, the generating company shall file a petition for determination of tariff. Any expenditure incurred or projected to be incurred and admitted by the Commission after prudence check based on reasonableness of the cost and impact on operational parameters shall form the basis of determination of tariff.”

32. In the present petition, the Petitioner has claimed additional expenditure of Rs.891.50 lakh towards partial capitalization of works related to ESP in 2018-19 under Regulation 14(3)(ii) of the 2014 Tariff Regulations (i.e. Change in law). It is also noticed that the Petitioner in Petition No. 438/GT/2020 (petition related to tariff determination for 2019-24 period in respect of the generating station) has claimed additional capital expenditure of Rs.3500.00 lakh in 2019-20 and Rs.515.00 lakh in 2020-21 towards R&M of ESP of the generating station under ‘Change in law’. It is further noticed that the Petitioner has filed Petition No. 496/MP/2020 for in-principle approval of the additional expenditure towards installation of various Emission Control Systems (i.e.Rs.55.66 crore for installation of ESP and Rs.365.59 crore for FGD) in respect of this generating station, in compliance to the MOEF&CC notification dated 7.12.2015.

33. The question which arises for consideration in the present petition is whether the additional capitalization towards ESP claimed under Regulation 14(3)(ii) of the 2014 Tariff Regulations is admissible under ‘change in law’. The Commission in its order dated 20.7.2018 in Petition No.98/MP/2017 had held that the MOEF&CC notification dated 7.12.2015 mandating implementation of ECS is a change in law event. However, the Commission in the said order had observed the following:

“48. Therefore, a mechanism needs to be devised for addressing the issues like identification of suitable technology for each plant for implementation of ECS, its impact on operational parameters and on tariff, and the recovery of additional capital and operational cost. The Commission in this regard directs the CEA to prepare guidelines specifying; (a) Suitable technology with model specification for each plant, with regard to implementation of new norms;”

34. Some of the generating stations whose tariff is being determined by this Commission, including the generating stations of the Petitioner, though designed for



SPM level of 150 mg/Nm³ have submitted that they would be able to meet the new SPM norm of 50 mg/Nm³ (in respect of the generating stations commissioned after 2003). It is observed from the PG test report (of ESP) that an efficiency of 99.949% had been achieved as against the guaranteed efficiency of 99.928%. During the PG test, the inlet dust concentration was 60.7 mg/Nm³. Accordingly, with the achieved efficiency of 99.949%, the outlet concentration of SPM works out to 31 mg/Nm³. As such, though the ESP was designed for a maximum outlet SPM of 150 mg/Nm³, it was operating well below the then existing norm of 150 mg/Nm³ and even below the new norm of 100 mg/Nm³. The Petitioner has not justified its claim for additional capital expenditure on R&M of ESP by furnishing relevant documents indicating that the actual SPM emission levels before R&M of ESP was more than 100 mg/Nm³. It is noticed that the works of the various ECS schemes as claimed by the Petitioner in Petition No.496/MP/2020, has not yet been executed and same is expected to be implemented during the 2019-24 tariff period only. In the above background, the part additional capitalization of Rs.891.50 lakh claimed towards ESP in 2018-19 is not allowed. We, however, grant liberty to the Petitioner to justify its requirement for R&M of ESP especially when the SPM emission level of 31 mg/Nm³ was achieved during the PG test against the new norm of 100 mg/Nm³, by furnishing the technical approval of the Central Electricity Authority (CEA). We observe that major portion of claim with regard to compliance with MOEF&CC Notification dated 7.12.2015 is claimed by the Petitioner in Petition No. 496/MP/2020 and, therefore, the Petitioner should pursue its claim related to this item in that Petition so that a comprehensive view may be taken by the Commission.

De-capitalization of spares (part of capital cost)

35. The Petitioner has claimed de-capitalization of spares amounting to Rs.16.00 lakh in 2014-15, Rs.10.68 lakh in 2015-16, Rs.3.09 lakh in 2016-17, Rs.145.31 lakh

in 2017-18 and Rs.59.02 lakh in 2018-19. The Petitioner has submitted that spares which form part of the capital cost have become unserviceable and, hence, these spares have been de-capitalized in terms of Regulation 14(4) of the 2014 Tariff Regulations. In view of this, the de-capitalization of spares as above, which form part of the capital cost, is allowed for the purpose of tariff.

Additional capital expenditure allowed for 2014-19

36. Based on the above discussions, the actual additional capital expenditure allowed for the purpose of tariff is as under:-

(Rs in lakh)							
Sl. No.	Head of work / Equipment	Regulation	2014-15	2015-16	2016-17	2017-18	2018-19
1	Down Stream Slope Protection & Balance of Peripheral Drain	14(3)(iv)	2.43	0.00	0.00	0.00	0.00
2	Inert Gas Fire Protection System for Stage-II	14(3)(ii)	199.78	3.99	0.00	0.00	0.00
	De-capitalisation in (2) above		(-) 39.45	0.00	0.00	0.00	0.00
3	11 kV double ckt line for AWRS of Arkha Ash Dyke	14(3)(ii)	0.00	0.00	0.00	90.73	0.00
4	Real Time Data transmission to PCB	14(3)(ii)	0.00	0.00	0.16	0.00	0.00
5	De-capitalisation of Spares forming part of capital cost	14(4)	(-)16.00	(-)10.68	(-)3.09	(-)145.31	(-)59.02
6	Total additional capital expenditure allowed		146.76	(-)6.69	(-)2.93	(-)54.58	(-)59.02

Reconciliation of Additional Capital Expenditure

37. The reconciliation of the actual additional capital expenditure for the 2014-19 tariff period with books of accounts as submitted by the Petitioner is as under:

(Rs in lakh)						
Sl No		2014-15	2015-16	2016-17	2017-18	2018-19
1	Closing Gross Block as per IGAAP Audited Balance Sheet as on 31.3.2016	0.00	0.00	351053.45	0.00	0.00
2	Capital spares capitalized	0.00	0.00	351.67	0.00	0.00
3	Opening Gross Block after IND AS adjustment	343553.14	350012.34	351405.12	357528.87	634431.87



SI No		2014-15	2015-16	2016-17	2017-18	2018-19
	1 st April (row 1+2)					
4	Add: Additions as per Note-2	0.00	0.00	5104.83	274727.62	10652.15
5	Add: Additions as per Note-2 out of adjustment column	0.00	0.00	3566.74	4179.83	8254.76
6	Less: De-capitalisation as per Note-2 out of adjustment column	0.00	0.00	233.09	135.39	273.20
7	Total Addition as per Ind-AS Balance Sheet (4 + 5 -6)	0.00	0.00	8438.47	278772.06	18633.71
IND-AS Adjustments						
8	Add: Vendor discounting out of assets in the year	0.00	0.00	12.43	1072.62	0.00
9	Less: Unwinding expenses Capitalised	0.00	0.00	0.00	1506.16	0.00
10	Less: IND-AS Adjustment of de-capitalisation out of row 6 (mitigating the impact of carrying cost exemption to arrive)	0.00	0.00	667.31	575.37	692.05
11	Less: Total addition in capital OH asset class (including adjustments also)	0.00	0.00	1659.85	1139.65	2708.03
12	Add: De-capitalisation of capital Overhauling during the year	0.00	0.00	0.00	0.00	0.00
13	Add/Less: Any other IND AS adjustment having impact on Property, Plant & Equipment's	0.00	0.00	0.00	279.51	1.54
14	Sub-total IND-AS adjustment (8-9-10-11+12+13)	0.00	0.00	(-) 2314.73	(-)1869.05	(-)3401.62
15	Closing Gross Block as per IGAAP (row 3 + 7 + 14)	350012.34	351053.45	357528.87	634431.87	649663.97
16	Addition as per IGAAP (row 15 - 3)	6459.20	1041.11	6123.74	276903.01	15232.09
17	Addition as per IGAAP corresponding to Unchahar-I	2193.98	401.08	3805.18	4472.18	1588.85
18	Addition as per IGAAP corresponding to Unchahar-III including 5 Km scheme	2309.47	(-)395.72	744.55	730.62	41.81
19	Addition as per IGAAP corresponding to Unchahar-IV	759.58	536.16	1209.61	271258.34	11717.96
20	Addition as per IGAAP corresponding to Unchahar Solar	322.93	174.00	29.64	20.20	15.13



SI No		2014-15	2015-16	2016-17	2017-18	2018-19
22	Addition as per IGAAP corresponding to Unchahar-II (2016-20)	873.24	325.59	334.76	421.67	1868.34
23	Exclusions (Items not allowable/not claimed) (accrual basis)	647.23	264.82	345.82	562.74	1025.73
24	Net additional capital expenditure claimed (accrual basis) (row 22 - 23)	226.01	60.77	(-)11.06	(-)141.07	842.62
25	Less: Un-discharged liabilities included in above	39.80	4.54	7.75	0.00	0.00
26	Net additional capital expenditure claimed (on cash basis) (row 24 - 25)	186.21	56.23	(-)18.81	(-)141.07	842.62
27	Add: Discharge of liabilities of items allowed for previous periods	4.59	7.33	2.66	12.29	8.24
28	Total Additional Capital Expenditure claimed (on cash basis)	190.80	63.56	(-)16.15	(-)128.78	850.86

Exclusions

38. It is observed from the above table that the actual additional capital expenditure claimed by the Petitioner is at variance with the additional capital expenditure as per books of accounts. This is on account of exclusion of certain expenditure and exclusion of liabilities in the additional capital expenditure considered for the purpose of tariff. The summary of exclusions (on cash basis) from the Auditor's certificate claimed for the 2014-19 tariff period under different heads for the purpose of tariff, is as under:

(Rs in lakh)						
Sl. No.	Head of Work / Equipment	Additional capital expenditure claimed under exclusions				
		2014-15	2015-16	2016-17	2017-18	2018-19
B1	Disallowed items					
1	R&M OF HMI system of Pro-control P13/42 DDC MIS for Stage-II	396.38	0.00	0.00	0.00	0.00
1a	De- capitalization R&M of HMI system of Pro-control P13/42 DDC MIS for Stage-II	(-)123.76	0.00	0.00	0.00	0.00
2	Retrofitting of Voltas make 6.6 kV SF6 circuit breaker with Vacuum circuit breaker of same ratings	70.09	96.66	0.00	0.00	0.00



2a	De-capitalization of retrofitting of Voltas make 6.6 kV SF6 circuit breaker with Vacuum circuit breaker of same ratings	(-)19.71	(-)20.15	0.00	0.00	0.00
3	200 TR Steam Driven double effect vapour absorption M/C for S-II AC Plant	53.71	0.00	0.00	0.00	0.00
4	6.6 K V overhead line for pump house	0.00	0.00	0.00	11.43	0.00
5	Pump House over peripheral drain	0.00	0.00	0.00	2.42	0.00
6	R&M of Human machine inter-face	0.00	0.00	0.00	1.60	0.00
7	Inter-connection of CHP stage-I and stage-II	0.00	0.00	0.00	0.00	278.03
	Sub Total (B1)	376.71	76.51	0.00	15.45	278.03
B2	Capital spares	310.78	402.73	461.55	545.44	716.31
B3	De-capitalization of Buildings-part of capital cost					
1	Semi-covered sheds in stores	(-)23.55	0.00	0.00	0.00	0.00
2	Construction of 2 semi-covered shed	(-) 30.97	0.00	0.00	0.00	0.00
	Total of De-capitalization of Buildings- part of capital cost	(-) 54.52	0.00	0.00	0.00	0.00
B 4	De-capitalization of MBOA(part of capital cost)	(-)0.02	(-)53.52	(-)5.09	(-)0.05	(-)2.31
B 5	De- capitalization of MBOA (not part of capital cost)	(-)27.30	(-)59.35	(-) 2.54	0.00	0.00
B 6	De-capitalization capital spares(not part of capital cost)	(-)83.07	(-)97.44	(-)107.79	0.00	0.00
B 7	Cost Adjustment					
1	Ambient Air Quality Monitoring System	0.00	-5.98	0.00	0.00	0.00
2	Dry uncharged battery	0.00	0.00	(-) 0.30	0.00	0.00
3	MPP- CONTRON & Instrumentation-(Unit-3) stage-II	0.00	0.00	0.00	0.00	(-) 0.10
B 8	Not claimed items					
1	Overhauling (Ind-AS adjustment only, cash basis zero impact)	0.00	0.00	0.00	0.00	0.00
	Total Exclusions claimed on cash basis	522.58	262.96	345.82	560.85	991.93
	Un-discharged liabilities pertaining to exclusions	124.65	1.86	0.00	1.89	33.80
	Total Exclusions claimed on accrual basis (As per row 23 of table at para 37 above)	647.23	264.82	345.82	562.74	1025.73

Disallowed Items

39. The Petitioner has sought exclusion of capitalization of Rs.396.38 lakh with corresponding de-capitalization of Rs.123.76 lakh in 2014-15 for R&M of HMI system of pro-control P13/42 DDC MIS for stage-II, capitalization of Rs.70.09 lakh in 2014-15 and Rs.96.66 lakh in 2015-16 with corresponding de-capitalization of Rs.19.71 lakh in 2014-15 and Rs.20.15 in 2015-16 for replacement/ retrofitting of Voltas make 6.6 kV SF6 circuit breaker with vacuum circuit breaker of same ratings, capitalization of Rs.53.71 lakh in 2014-15 for 200 TR Steam Driven double effect vapour absorption M/C for S-II AC Plant, capitalization of Rs.11.43 lakh in 2017-18 for 6.6 kV overhead line for pump house, capitalization of Rs.2.42 lakh in 2017-18 for Pump House over peripheral drain, capitalization of Rs.1.60 lakh in 2017-18 for R&M of Human Machine inter-face and capitalization of Rs.278.03 lakh in 2018-19 for Inter-connection of CHP stage-I and stage-II. In justification of the same, the Petitioner has submitted that these works are being claimed under exclusion as these expenditures were disallowed by the Commission in its earlier orders. In view of the fact that positive entries corresponding to the disallowed assets were not allowed to be a part of the capital cost for the purpose of tariff, the exclusion (of positive entries) as claimed and effected by the Petitioner is in order and, hence, allowed. However, with regard to the exclusion of negative entries corresponding to the de-capitalized assets as sought by the Petitioner, the same is not allowed as the Petitioner has not established that these de-capitalized assets were not a part of the capital cost for the purpose of tariff. As per the 2014 Tariff Regulations, any asset which is a part of capital base for the purpose of tariff has to be de-capitalized on becoming unserviceable. Accordingly, the exclusion claimed by the Petitioner for additional capitalization is allowed but the exclusion claimed for de-capitalization of Rs 123.76 lakh in 2014-15 for R&M of HMI system of pro-control P13/42 DDC MIS for the generating station and de-capitalization of Rs 19.71 lakh in 2014-15 and Rs.20.15 in



2015-16 for replacement/ retrofitting of Voltas make 6.6 kV SF6 circuit breaker is not allowed.

Capitalization of Spares

40. The Petitioner has procured capital spares amounting to Rs.310.78 lakh in 2014-15, Rs.402.73 lakh in 2015-16, Rs.461.55 lakh in 2016-17, Rs.545.44 lakh in 2017-18 and Rs.716.31 lakh in 2018-19. The Petitioner has submitted that as capital spares capitalized after the cut-off date are not allowed in terms of the 2014 Tariff Regulations, the same has been kept under exclusions. Since 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 the O&M expenses as and when consumed, the Petitioner has excluded the said amount. Accordingly, the exclusion of the said amounts under this head is in order and is allowed.

De-capitalization of Miscellaneous Bought out Assets (MBOA) forming part of the capital cost

41. The Petitioner has claimed exclusion of de-capitalized MBOA of Rs.0.02 lakh in 2014-15, Rs.53.52 lakh in 2015-16, Rs.5.09 lakh in 2016-17, Rs.0.05 lakh in 2017-18 and Rs.2.31 lakh in 2018-19 which form part of the capital cost. It is observed from the submissions of the Petitioner that MBOA items of Rs 0.02 lakh in 2014-15, Rs 53.52 lakh in 2015-16, Rs 5.09 lakh in 2016-17 and Rs 0.05 lakh in 2017-18 were part of the capital cost allowed in tariff and these MBOA items on becoming unserviceable have been taken out of the capital cost. Since these assets form part of the capital cost, exclusion for de-capitalization of these MBOA items for the said amounts is not allowed. For MBOA items of Rs 2.31 lakh during 2018-19, the Petitioner has mentioned in Form 9Bi that the asset was capitalized in year 2008-09. However, it is observed from the records that the Petitioner had not claimed any additional capital expenditure during 2004-09 tariff period. As such, considering the



fact that de-capitalized MBOA was not a part of capital cost for the purpose of tariff, the exclusion of de-capitalization of Rs 2.31 lakh in 2018-19 as claimed by the Petitioner is in order and, hence, allowed.

De-capitalization of Miscellaneous Bought out Assets (MBOA) not forming part of the capital cost

42. The Petitioner has claimed exclusion of de-capitalized MBOA amounting to Rs.27.30 lakh in 2014-15, Rs.59.35 lakh in 2015-16 and Rs.2.54 lakh in 2016-17 which do not form part of the capital cost. It is observed from the submissions of the Petitioner that these MBOA items have not been allowed in tariff and do not form part of the capital cost. Since these assets do not form part of the capital cost, the exclusion for de-capitalization of these MBOA items for the said amounts are allowed.

De-capitalization of spares not forming part of capital cost

43. The Petitioner has excluded de-capitalized spares amounting to Rs.83.07 lakh in 2014-15, Rs.83.07 lakh in 2015-16 and Rs.107.79 lakh in 2016-17 for the purpose of tariff. In justification of the same, the Petitioner has submitted that the capitalization of spares beyond the cut-off date is not permissible in terms of the 2014 Tariff Regulations and accordingly, the capitalization of spares have been claimed as exclusion in the present petition. Since capitalization of spares after the cut-off date is not permissible and, therefore, do not form part of the capital cost for the purpose of tariff, the exclusion of de-capitalization of the spares as claimed by the Petitioner, is in order and allowed.

De-capitalization of Buildings portion of capital cost

44. The Petitioner has claimed exclusion of de-capitalization of buildings (forming part of capital cost) amounting to Rs.54.52 lakh in 2014-15 in the books of accounts. It is observed from the submissions of the Petitioner that these items were part of the



capital cost allowed in tariff and these items on becoming unserviceable needs to be taken out of the capital cost. Accordingly, the exclusion of de-capitalization of these items are not allowed.

Cost Adjustments and Items not claimed/ Ind-AS Adjustment (Overhauling)

45. The Petitioner has sought the cost adjustment of (-) Rs.5.98 lakh in 2015-16 towards Ambient Air Quality Monitoring System (-) Rs.0.30 lakh in 2016-17 towards 'dry uncharged battery (cell), 1400 AH' and (-) Rs.0.10 lakh in 2018-19 for 'MPP-control & instrumentation-Unit 3-Stage-II in books of accounts with justification as 'Accounting adjustment'. Since the Petitioner has not furnished any justification/ details for these accounting/ cost adjustments, the claim of the Petitioner under this head is not allowed for the purpose of tariff.

46. With regard to the expenditure on overhauling, the reconciliation statement as submitted by the Petitioner indicates an expenditure of Rs. 716.08 lakh in 2016-17 and Rs. 541.63 lakh in 2017-18, with corresponding negative entries of same amounts as IND-AS adjustment. As such, after adjustment, the net claim against overhauling reduces to zero as per IGAPP. Considering the fact that the expenditure on overhauling is a part of normative expenditure, the accounting adjustment leading to zero expenditure is in order and does not impact the claim made by the Petitioner.

47. Based on the above discussions, the total additional capital expenditure (cash basis) allowed is summarized as under, after considering the additions allowed, exclusions not allowed, the cost adjustment not allowed and discharges of liabilities: details of exclusion not allowed:

<i>(Rs in lakh)</i>						
Sl. No	Head of work/ Equipment	2014-15	2015-16	2016-17	2017-18	2018-19
1	R&M of HMI system of pro-control P13/42 DDC MIS for stage-II	(-) 123.76	-	-	-	-



2	De-capitalization retrofitting of Voltas make 6.6 kV SF6 circuit breaker with Vacuum circuit breaker of same ratings	(-) 19.71	(-) 20.15	-	-	-
3	De-capitalization of MBOA (part of capital cost)	(-)0.02	(-) 53.52	(-) 5.09	(-) 0.05	-
4	Total of De-capitalization of Buildings portion of capital cost	(-) 54.52	-	-	-	-
	Total	(-) 198.01	(-) 73.67	(-) 5.09	(-) 0.05	0.00

48. The total additional capital expenditure (cash basis) allowed is summarized as under:

<i>(Rs in lakh)</i>						
Sl. No	Head of work / Equipment	2014-15	2015-16	2016-17	2017-18	2018-19
1	Down Stream Slope Protection & Balance of Peripheral drain	2.43	0.00	0.00	0.00	0.00
2	Inert Gas Fire Protection System for Stage-II	199.78	3.99	0.00	0.00	0.00
	De-capitalisation in the above	(-)39.45	0.00	0.00	0.00	0.00
3	11 kV double ckt line for AWRS of Arkha Ash Dyke.	0.00	0.00	0.00	90.73	0.00
4	Real time data Transmission to PCB	0.00	0.00	0.16	0.00	0.00
5	De-capitalisation of Spares – part of capital cost	(-)16.00	(-) 10.68	(-) 3.09	(-)145.31	(-) 59.02
6	Total additional capital expenditure allowed	146.76	(-) 6.69	(-) 2.93	(-) 54.58	(-) 59.02
7	Add: Exclusions not allowed from the table above	(-) 198.01	(-) 73.67	(-) 5.09	(-) 0.05	0.00
8.	Add: Accounting/cost adjustments not allowed under exclusions	0.00	(-) 5.98	(-) 0.30	0.00	(-) 0.10
9.	Add: Discharges of liabilities	4.59	7.33	2.66	12.29	8.24
8.	Net additional capital expenditure allowed	(-) 46.65	(-) 79.02	(-) 5.66	(-) 42.34	(-)50.88

Capital cost for 2014-19

49. Accordingly, the capital cost approved for the 2014-19 tariff period is as under:

<i>(Rs in lakh)</i>					
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	130591.02	130544.37	130465.35	130459.69	130417.35
Add: Admitted Additional capital expenditure	(-) 46.65	(-) 79.02	(-) 5.66	(-) 42.34	(-) 50.88
Closing Capital Cost	130544.37	130465.35	130459.69	130417.35	130366.47
Average Capital Cost	130567.69	130504.86	130462.52	130438.52	130391.91



Debt–Equity Ratio

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

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

Provided that:

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

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

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

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

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

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

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

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

51. The gross normative loan and equity amounting to Rs.91413.71 lakh and Rs.39177.31 lakh as considered in order dated 31.3.2017 in Petition No. 289/GT/2014 has been retained for the purpose of tariff. Further, the additional capital expenditure admitted as above has been allocated in debt-equity ratio of 70:30.

Return on Equity

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

“(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 ^{af}ter 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.

53. 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 :

(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.”

54. Accordingly, return on equity has been worked out as shown below:

	(Rs in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Notional Equity- Opening	39177.31	39163.31	39139.61	39137.91	39125.21
Addition of Equity due to additional capital expenditure	(-) 14.00	(-) 23.70	(-) 1.70	(-) 12.70	(-) 15.26
Normative Equity - Closing	39163.31	39139.61	39137.91	39125.21	39109.94
Average Normative Equity	39170.31	39151.46	39138.76	39131.56	39117.58
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Effective Tax Rate for respective years	20.961%	21.342%	21.342%	21.342%	21.549%
Rate of Return on Equity (Pre Tax)	19.610%	19.705%	19.705%	19.705%	19.758%
Return on Equity (Pre Tax)- (annualized)	7681.30	7714.80	7712.29	7710.87	7728.85

Interest on loan

55. 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-capitalisation of such asset.

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

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

56. Interest on loan has been worked out as mentioned below:

- (i) Gross normative loan amounting to Rs.91413.71 lakh as considered in Commission's order dated 31.3.2017 in Petition No. 289/GT/2014 has been retained as on 1.4.2014;
- (ii) Cumulative repayment amounting to Rs.91413.71 lakh as considered in Commission's order dated 31.3.2017 in Petition No. 289/GT/2014, has been retained as on 1.4.2014.
- (iii) Accordingly, the net normative opening loan as on 1.4.2014 is 'nil'.
- (iv) Addition to normative loan on account of additional capital expenditure approved above has been considered.
- (v) Depreciation allowed has been considered as repayment of normative loan during the respective year of the 2014-19 tariff period. Further, repayments

have been adjusted for de-capitalisation of assets considered for the purpose of tariff.

- (vi) In line with the provisions of the regulations stated above, the weighted average rate of interest has been calculated by applying the actual loan portfolio existing as on 1.4.2014, along with subsequent additions during the 2014-19 tariff period, if any, for the generating station. In case of loans carrying floating rate of interest, the details of rate of interest, as provided by the Petitioner, has been considered for the purpose of tariff.

57. Necessary calculation for interest on loan is as under:

	(Rs in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Gross opening loan	91413.71	91381.05	91325.74	91321.78	91292.14
Cumulative repayment of loan upto previous year / period	91413.71	91381.05	91325.74	91321.78	91292.14
Net Opening loan	0.00	0.00	0.00	0.00	0.00
Addition due to Additional capitalisation	(-) 32.66	(-) 55.31	(-) 3.96	(-) 29.64	(-) 35.62
Repayment of loan during the period	120.74	(-) 3.16	0.91	72.11	5.70
Less: Repayment adjustment on account of de-capitalisation	153.65	52.15	4.88	101.75	41.31
Add: Repayment adjustment on account of discharges / reversals corresponding to un-discharged liabilities deducted as on 1.4.2009	0.25	0.00	0.00	0.00	0.00
Repayment of loan during the year	(-) 32.66	(-) 55.31	(-) 3.96	(-) 29.64	(-) 35.62
Net Closing loan	0.00	0.00	0.00	0.00	0.00
Average loan	0.00	0.00	0.00	0.00	0.00
Weighted Average Rate of Interest on loan	10.2575%	9.6213%	9.0660%	8.0290%	8.0138%
Interest on loan	0.00	0.00	0.00	0.00	0.00

Depreciation

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

(8) In case of de-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 de-capitalized asset during its useful services."

59. Cumulative depreciation amounting to Rs.78490.19 lakh as on 1.4.2014, as considered in order dated 31.3.2017 in Petition No. 289/GT/2014 has been retained for the purpose of tariff. Further, the value of freehold land included in the average capital cost has been adjusted while calculating the depreciable value for the purpose of tariff. Accordingly, the balance depreciable value (before providing

depreciation) for the year 2014-15 works out to Rs.38627.87 lakh. Since as on 1.4.2014, the used life of the generating station (i.e. 13.67 years) is more than 12 years from the effective station COD of 1.8.2000, depreciation has been calculated by spreading over of the balance depreciable value for respective years. Necessary calculations in support of depreciation are as shown below:

	(Rs. in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Average capital cost (A)	130567.69	130504.86	130462.52	130438.52	130391.91
Value of freehold land included above (B)	436.51	436.51	436.51	436.51	436.51
Average Capital cost, net of freehold land (C)=(A-B)	130131.18	130068.35	130026.01	130002.01	129955.40
Aggregated depreciable value (D) = (C*90%)	117118.06	117061.51	117023.41	117001.81	116959.86
Remaining aggregate depreciable value at the beginning of the year (E) = (D- Cumulative depreciation (shown at (M), at the end of previous year)	38627.87	35316.44	31912.77	28476.82	25121.49
Weighted average rate of Depreciation (WAROD) (%) (F) = (I/A)	2.61	2.62	2.62	2.62	2.63
No. of completed years at the beginning of the year (G)	13.67	14.67	15.67	16.67	17.67
Balance useful life at the beginning of the year (H)	11.33	10.33	9.33	8.33	7.33
Combined depreciation during the year (I)= (E/H)	3408.34	3417.72	3419.23	3417.22	3425.66
Cumulative depreciation at the end of the year (before adjustment for de-capitalisation & un-discharged liabilities) (J) = (I + Cumulative depreciation (shown at M), at the end of previous year*)	81898.53	85162.79	88529.87	91942.21	95264.03
Add: Cumulative depreciation adjustment on account of un-discharged liabilities deducted as on 1.4.2009 (K)	0.19	0.00	0.00	0.00	0.00
Less: Cumulative depreciation adjustment on account of de-capitalization (L)	153.65	52.15	4.88	103.84	41.96
Cumulative depreciation at the end of the year (M)= (J+K-L)	81745.07	85110.64	88524.99	91838.37	95222.06

*Note: The Cumulative Depreciation at the end of 2013-14 is Rs. 78,490.19 lakh.

O&M Expenses

60. The O&M expenses claimed by the Petitioner in Form-3A of the petition are as under:-

	(Rs.in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Normative O&M Expenses under Regulation 29(1) of the 2014 Tariff Regulations	10038.00	10668.00	11340.00	12054.00	12814.20
O&M expenses under Regulation 29(2) of the 2014 Tariff Regulations					
Water Charges	217.60	233.85	217.96	250.43	160.61
Capital Spares consumed	99.07	108.12	110.88	145.31	59.02
Total O&M expenses claimed (Regulation 29(1) & Regulation 29 (2) of the 2014 Tariff Regulations	10354.67	11009.97	11668.85	12449.74	13033.84
Impact of Pay revision	0.00	20.78	1176.34	1410.90	1669.63
Impact of GST	0.00	0.00	0.00	91.77	157.66
Ash Transportation Expenditure	0.00	0.00	0.00	0.00	2537.22
Total O&M expenses claimed	10354.67	11030.75	12845.19	13952.41	17398.35

61. The normative O&M expenses claimed by Petitioner are the same as allowed by the Commission in its order dated 31.3.2017 in Petition No. 289/GT/2014 in terms of Regulation 29(1)(a) of the 2014 Tariff Regulations. Hence, the claim of the Petitioner for normative O&M expenses has been allowed.

62. Regulation 29(2) of the 2014 Tariff Regulations provides as under:

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

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

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.”

63. Based on the actual water charges of Rs.223.58 lakh in 2013-14, the Commission vide its order dated 31.3.2017 in Petition No. 289/GT/2014 had allowed water charges amounting to Rs.223.58 lakh during each year of the 2014 tariff

period. The Petitioner in the present petition has claimed water charges based on the actual charges paid to the State Government as under:

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

64. In this regard, the Commission vide ROP of the hearing dated 13.8.2020 had directed the Petitioner to submit additional information on the following:

"It is noticed that an amount of Rs.160.26 lakh as 'Maintenance Charges' (in Form 3B) has been included in the actual water charges claimed during the tariff period 2014-19. In this regard, the Petitioner shall clarify whether the 'maintenance charges' have been paid to the State Government/agency or has been incurred by the Petitioner for the maintenance of water system. In case 'maintenance charges' have been incurred by the Petitioner, then an Auditor certificate may be submitted to the effect that these charges were booked under the head "Water charges" during the period from 2008-09 to 2012-13. The Petitioner shall furnish the details of the 'maintenance charges' and also furnish an 'Auditor certificate' in respect of the actual expenditure claimed along with the computation of the year-wise claim for water charges"

65. In response, the Petitioner vide its affidavit dated 2.11.2020 has submitted that 'maintenance charges' have been paid to the UP Irrigation Department (UPID) for maintenance of the canal from which the generating station receives the consumptive water and accordingly the same has been claimed under the head 'water charges'. The Petitioner has also furnished the Auditors certificate, in respect of the actual expenditure claimed for the 2014-19 tariff period along with the computation of the year-wise claim for water charges. After scrutiny of the information submitted, the audited actual water charges claimed by the Petitioner as above are allowed.

Capital Spares

66. As per Regulation 29(2) of the 2014 Tariff Regulations, capital spares are admissible separately. The Petitioner has claimed total actual expenditure of Rs.552.40 lakh towards capital spares (i.e. Rs.99.07 lakh in 2014-15, Rs.108.12 lakh in 2015-16, Rs.110.88 lakh in 2016-17, Rs.145.31 lakh in 2017-18 and Rs.59.02 lakh in 2018-19). The Petitioner has submitted that in order to meet the customers'

demand and to maintain high machine availability at all times by the generating station, the units/ equipment are taken under overhaul/ maintenance and inspected regularly for wear and tear. It has stated that during such works, spares parts of equipment which had been damaged/ unserviceable are replaced/ consumed so that the machines continue to perform at expected efficiency, on a sustained basis.

67. The Commission vide ROP of the hearing dated 13.8.2020 had directed the Petitioner to furnish the audited statement with respect to the consumption of capital spares, as per Form-17. In response, the Petitioner has submitted the summary of consumption of capital spares as per Form-17, as under:

(Rs in lakh)

Year	Capital Spares (part of capital cost) (A)	Capital Spares (not part of capital cost) (B)	Total Capital Spares consumed (A) + (B)
2014-15	16.00	83.07	99.07
2015-16	10.68	97.44	108.12
2016-17	3.09	107.79	110.88
2017-18	145.31	0.00	145.31
2018-19	59.02	0.00	59.02

68. We have examined the list of the capital spares consumed by the Petitioner. It is evident from the audited statement that capital spares claimed comprise of two categories i.e. (i) spares which form part of the capital cost and (ii) spares which do not form part of the capital cost of the project. In respect of capital spares which form part of the capital cost of the project, the Petitioner has been recovering tariff since their procurement and, therefore, the same cannot be allowed as part of additional O&M expenses. Accordingly, only those capital spares, which do not form part of the capital cost of the project are being considered in the present petition. 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. Based on this, the details of the allowed capital spares considered for 2014-19 tariff period is summarized as under:

	<i>(Rs in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Total capital spares claimed by Petitioner	83.07	97.44	107.79	-	-
Value of spares below Rs 1(one) lakh disallowed on individual basis	0.86	0.88	6.53	-	-
Net total value of capital spares considered	82.21	96.56	101.26	-	-

69. Also, considering the fact that the original value of capital spares taken out of service is neither available nor has been furnished for the 2014-19 tariff period, we are of the view that salvage value of the capital spares taken out of service is required to be deducted from the cost of actual capital spares consumed during the 2014-19 tariff period. Accordingly, the salvage value of 10% has been deducted from the cost of capital spares allowed during the 2014-19 tariff period, as above. Accordingly, the net capital spares allowed is summarized as under:

	<i>(Rs. In lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Net total value of capital spares considered	82.21	96.56	101.26	-	-
Less: Salvage value @ 10%	8.22	9.66	10.13	-	-
Net cost of Capital spares allowed	73.99	86.90	91.13	-	-

70. Based on the above, the total annualized O&M expenses allowed for the 2014-19 tariff period in respect of the generating station, is summarized as under:

	<i>(Rs in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M expenses allowed under Regulation 29(1)	10038.00	10668.00	11340.00	12054.00	12814.20
O&M expenses under Regulation 29(2)					



Water Charges	217.60	233.85	217.96	250.43	160.61
Capital Spares allowed	73.99	86.90	91.13	0.00	0.00
Total O&M expenses allowed	10329.59	10988.752	11649.09	12304.43	12974.81

Additional O&M expenses on account of payment of GST

71. The Petitioner has claimed additional O&M expenses of Rs.91.77 lakh in 2017-18 and Rs.157.66 lakh in 2018-19 on account of payment of GST. The Respondent, UPPCL has submitted that the Petitioner has not furnished any details as to how the said amount has been claimed and, therefore, it may be directed to submit the same. The Respondent, BRPL has submitted that any proposal which has a bearing on the O&M expense norms can be accepted only if the Petitioner proves that the said norms are inadequate to meet the additional expenditure on account of GST. It has stated that without proving the inadequacy of the O&M norms, any change in these norms would be unreasonable. In response, the Petitioner has reiterated the submissions made in the petition.

72. The matter has been considered. It is observed that the Commission while specifying the O&M expense norms for the 2014-19 tariff period had considered taxes to form part of the O&M expense calculations and accordingly, had factored the same in the said norms. This is evident from paragraph 49.6 of SOR (Statement of Objects and Reasons) issued with the 2014 Tariff Regulations, which is extracted hereunder:

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

73. Further, the escalation rates considered in the O&M expense norms under the 2014 Tariff Regulations is only after accounting for the variations during the past five years of the 2014-19 tariff period, which in our view, takes care of any variation in taxes also. It is pertinent to mention that in case of reduction of taxes or duties, no

reimbursement is ordered. In this background, we find no reason to grant additional O&M expenses towards payment of GST.

Additional O&M expenses on account of impact of Pay revision

74. The Petitioner has submitted that the Commission while specifying the 2014 Tariff Regulations applicable for the 2014-19 tariff period, had taken note in SOR to the said regulations that any increase in the employee expenses, on account of pay revision shall be considered appropriately, on case to case basis, balancing the interest of generating stations and consumers. The Petitioner has, therefore, claimed additional O&M expenses of Rs.20.78 lakh in 2015-16, Rs.1176.34 lakh in 2016-17, Rs.1410.90 lakh in 2017-18 and Rs.1669.63 lakh in 2018-19 towards impact of wage revision of employees of CISF and Kendriya Vidyalya staff from 1.1.2016 and the employees of the Petitioner posted at the generating station, with effect from 1.1.2017.

75. In this regard, the Commission vide ROP of the hearing dated 13.8.2020 had directed the Petitioner to furnish the following information:

- 1. Detailed break-up of the actual O&M incurred during 2014-19 tariff period (including any arrears paid after 31.3.2019 towards wage revision) in the format which was issued by Commission to all the generating stations for furnishing the actual O&M expenditure data for the period from 2008-09 to 2012-13;*
- 2. A Comparative table indicating the actual O&M expenditure incurred versus the normative O&M allowed to the generating station;*

76. The Petitioner vide its affidavit dated 2.11.2020 has submitted that the commercial capacity of the generating station was 1050 MW (2x210 + 2x210 + 210 MW) upto 29.9.2017 and later increased to 1550 MW with effect from 30.9.2017, after the COD of Stage-IV (1x500 MW). Accordingly, the Petitioner has submitted the following:

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

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

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

77. The Respondent, UPPCL has submitted that the Petitioner has not placed on record any details to substantiate its claim that the O&M expense norms notified under the 2014 Tariff Regulations are inadequate or insufficient after factoring in pay revision. It has stated that the Petitioner has claimed the incremental impact of pay revision amounting to Rs.42.77 crore and not the 'balance amount' which may only be considered for reimbursement in terms of SOR to the 2014 Tariff Regulations. The Respondent, BRPL has submitted that the impact of pay revision is to be entirely borne by CPSE, in terms of the said memorandum of DPE dated 3.8.2017.

78. The Petitioner in its rejoinder has submitted that the Commission while framing the 2014 Tariff Regulations had not factored the impact of such increase in the employee cost and, therefore, the Commission in exercise of its power under Regulation 54 (power to relax) and Regulation 55 (power to remove difficulty) of the 2014 Tariff Regulations may allow the same.

79. We have examined the submissions and the documents available on record. As stated, the Petitioner has claimed total amount of Rs.4277.63 lakh (Rs. 20.78 lakh in 2015-16, Rs. 1176.34 lakh in 2016-17, Rs. 1410.90 lakh in 2017-18 and Rs. 1669.63 lakh in 2018-19) as impact of wage revision of employees of CISF and Kendriya Vidyalaya Staff from 1.1.2016 and for employees of the Petitioner posted at the generating station with effect from 1.1.2017. However, it is noticed that the said claim of the Petitioner includes the impact on account of the payment of additional PRP/ ex-gratia to its employees, consequent upon wage revision. As such, as per consistent methodology adopted by the Commission of excluding PRP/ ex-gratia from actual O&M expenditure of past data for finalization of O&M norms for various

tariff settings, the additional PRP/ ex-gratia, paid as a result of wage revision impact has been excluded from the wage revision impact claimed by the Petitioner, in the present case. Accordingly, the claim of the Petitioner in respect of wage revision impact stands reduced to Rs.3767.08 lakh with the following year-wise break up:

	(Rs in lakh)			
	2015-16	2016-17	2017-18	2018-19
Wage revision impact claimed (excluding PRP/ex-gratia)	20.78	1176.33	1306.43	1263.54

80. With respect to recovery of wage revision impact by a generator, the Statement of Objects and Reasons (SOR) to the 2014 Tariff Regulations stipulates as under:

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

*33.2 The draft Regulations provided for a normative percentage of employee cost to total O&M expenses for generating stations and transmission system with an intention to provide a ceiling limit so that the same should not lead to any exorbitant increase in the O&M expenses resulting in spike in tariff. The Commission shall examine the increase in employee expenses on case to case basis and shall consider the same if found appropriate, to ensure that overall impact at the macro level is sustainable and thoroughly justified. Accordingly, clause 29(4) proposed in the draft Regulations has been deleted. **The impact of wage revision shall only be given after seeing impact of one full year and if it is found that O&M norms provided under Regulations are inadequate/insufficient to cover all justifiable O&M expenses for the particular year including employee expenses, then balance amount may be considered for reimbursement.***"

81. The methodology indicated in SOR quoted above suggests a comparison of the normative O&M expenses with the actual O&M expenses, on a year to year basis. However, in this respect the following facts need consideration:

- 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;
- Certain cyclic expenditure may occur with a gap of one year or two years and as such adopting a longer duration i.e. five years for framing of norms also captures such expenditure which is not incurred on year to year basis;



- c) When generating companies find that their actual expenditure has gone beyond the normative O&M in a particular year put departmental restrictions and try to bring the expenditure for the next year below the norms.

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

83. In addition to the additional information sought vide ROP dated 13.8.2020, the Commission vide ROP of the hearing dated 13.4.2021, directed the Petitioner to submit the following:

- a) Breakup of actual O&M expenditure for the tariff period 2014-19 under various subheads (as per Annexure-A enclosed) after including the pay revision impact (employees, CISF and KV), wage revision impact (minimum wages). (To be provided in both MS Excel and PDF format);
- b) Break-up of actual O&M expenses including pay revision impact for Corporate Centre/other offices & breakup of claimed wage revision impact on employee cost, expenses on corporate centre and on salaries of CISF & KV employee of the generating station (as per Annexure-B & Annexure-C enclosed) for the 2014-19 tariff period along with the allocation of the total O&M expenses to the various generating stations under construction, operational stations and any other offices along with basis of allocating such expenditure.(to be provided in both MS Excel and PDF format);

84. In response, the Petitioner vide affidavits dated 2.11.2020 and 31.5.2021 has furnished the above details in respect of all the stages of the generating station. The Petitioner has also submitted the following:

- a) A comparative table indicating the actual O&M expenses incurred at this generating station versus the normative O&M expenses allowed during the tariff period 2014-19 for the whole i.e. for all stages of the generating station;

- b) The actual impact of pay revision certified by Auditor, after comparing the salaries/wages prior to and after revision of pay for the generating station i.e. 420 MW;
- c) Detailed break-up of the actual O&M expenses for the generating station as well as corporate center and its allocation to various generating stations;

85. The Petitioner has furnished the detailed breakup of the actual O&M expenses incurred during the 2014-19 tariff period for combined stages i.e. Stage-I, II, III and IV of the generating station. It is noticed that the total O&M expenses incurred is more than the normative O&M expenses recovered during each year of the 2014-19 tariff period. The impact of wage revision/ pay revision could not be factored by the Commission while framing the O&M expense norms under the 2014-19 Tariff Regulations since the pay/ wage revision came into effect from 1.1.2016 (CISF & KV employees) and 1.1.2017 (employees of the Petitioner) respectively. As such, in terms of SOR to the 2014 Tariff Regulations, the following approach has been adopted for arriving at the allowable impact of pay revision:

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

extent of under recovery or wage revision impact (excluding PRP and Ex-gratia), whichever is lower, is required to be allowed as wage revision impact for the period 2015-19.

86. The details as furnished by the Petitioner for actual O&M expenses incurred for Stage-I, II and III (1050 MW) for the period from 1.4.2014 to 29.9.2017 and for Stages-I to IV (1550 MW) for the period from 30.9.2017 to 31.3.2019, and the wage revision impact (excluding PRP and ex-gratia) for the generating station (Stage-II 420 MW) are as under:

<i>(Rs in lakh)</i>		
Year	Actual O&M expenses for FGSTPS (excluding water charges & capital spares) (A)	Wage revision impact claimed for Stage-II 420 MW (excluding PRP/Ex-gratia)
2014-15	31183.16	0.00
2015-16	34983.11	20.78
2016-17	35960.37	1176.33
2017-18	42561.06	1306.43
2018-19	64281.02	1263.54
Total		3767.08

87. As a first step, the expenditure against sub-heads of O&M expenses as indicated in paragraph 85 above have been excluded from the actual O&M expenses incurred to arrive at the actual O&M expenses (normalized) for the combined stages of the generating station (Stages-I to III till 29.9.2017 for 1050 MW and Stages-I to IV from 30.9.2017 to 31.3.2019 for 1550 MW). Accordingly, the comparison of the normative O&M expenses versus the actual O&M expenses (normalized) along with the wage revision impact claimed by the Petitioner for the generating station (FGSTPS Stage-II 420 MW) for the 2015-19 tariff period is as follows:

<i>(Rs. in lakh)</i>						
Sl. No		2015-16	2016-17	2017-18	2018-19	Total for 2015-19
1.	Actual O&M expenditure (normalized) for generating station (combined for stages-I to IV) (a) 1050 MW upto 29.9.2017 and 1550 MW from 30.9.2017 to 31.3.2019	31116.36	33636.72	37474.70	50575.83	152803.61
2.	Actual O&M expenses (normalized) for Stage-II (420 MW) <i>pro-rated</i> based on capacity (b)	12446.54	13454.69	12100.84	13704.42	51706.48



2	Normative O&M expenses for Stage-II as per Regulation 29(1) of Tariff Regulation (c)	10668.00	11340.00	12054.00	12814.00	46876.00
3	Under recovery (d) =(b)-(c)	1778.54	2114.69	46.84	890.42	4830.48
4.	Wage revision impact claimed (excluding PRP/ex-gratia)	20.78	1176.33	1306.43	1263.54	3767.08

88. It is observed that for the wage revision impact during the period 2015-19, the normative O&M expenses is less than the actual O&M expenses (normalized) and under-recovery is to the tune of Rs.4830.48 lakh. As such, in terms of methodology described above, the wage revision impact (excluding PRP/incentive) of Rs.3767.08 lakh is allowable for this generating station [Stage-II (420 MW)]. Accordingly, we, in exercise of the Power to relax under Regulation 54 of the 2014 Tariff Regulations, relax Regulation 29(1) of the 2014 Tariff Regulations and allow the reimbursement of the wage revision impact for this generating station, as additional O&M charges for the period 2015-19. The arrear payments on account of the wage revision impact is payable by the beneficiaries in twelve equal monthly installments. Keeping in view the consumer interest, we, as a special case, direct that no interest shall be charged by the Petitioner on the arrear payments on the wage revision impact allowed in this order. This arrangement, in our view, will balance the interest of both, the Petitioner and the Respondents. Also, considering the fact that the impact of wage revision is being allowed in exercise of the power to relax, these expenses are not made part of the O&M expenses and consequent annual fixed charges being determined in this order under the 2014 Tariff Regulations.

Ash Transportation Expenses

89. The Petitioner has claimed additional O&M expenses for Rs.2537.22 lakh in 2018-19 towards Ash Transportation expenses. The Petitioner has submitted that MOEF&CC Notification dated 25.1.2016, issued in exercise of the powers under the Environment Protection Act, 1986 and the Environment Protection Rules, provides for sharing of transportation cost by coal and lignite based thermal power plants, with



fly ash users for transportation of fly ash beyond 100 km and upto 300 km from generating station. The Petitioner has also stated that it had filed Petition No. 172/MP/2016 before this Commission, seeking reimbursement of the additional expenses incurred towards Fly Ash transportation, directly from the beneficiaries as the same are statutory expenses. Accordingly, the Petitioner has sought reimbursement of the additional expenditure incurred towards fly ash transportation, as detailed below:

	(Rs in lakh)
	2018-19
Expenditure towards Fly ash transportation (a)	4127.10
Revenue earned from sale of Fly ash (b)	1589.88
Net additional O&M expenses claimed (a-b)	2537.22

90. The Commission vide ROP of the hearing dated 13.8.2020 directed the Petitioner to furnish the following information:

- (i) Award of fly ash transportation contract through a transparent competitive bidding procedure. Alternatively, the schedule rates of the respective State Governments, as applicable for transportation of fly ash;
- (ii) Details of the actual additional expenditure incurred on Ash transportation after 25.1.2016, duly certified by auditors;
- (iii) Details of the Revenue generated from sale of fly ash/ fly ash products and the expenditure incurred towards Ash utilization up to 25.1.2016 and from 25.1.2016 to till date, separately;
- (iv) Revenue generated from fly Ash sales maintained in a separate account as per the MoEF notification;
- (v) Accordingly, the Petitioner shall confirm that it has complied with the above conditions and submitted the details thereof along with the computation of the claimed cost towards Ash Transportation. The additional information submitted shall also include the name of the transporters, the distance of the end user (in km), the awarded rate in ₹/ton per kilometer etc., and any other details as considered relevant to the said claim in terms of the MOEFCC Notification dated 25.1.2016;

91. The Petitioner has submitted that a Memorandum of Understanding (MoU) was entered into between NTPC and National Highways Authority of India (NHAI) on 9.10.2017 for bearing the cost of transportation of ash from Unchahar generating station for utilization in the construction of road embankment at four-laning of Sultanpur to Varanasi section of NH-56 and four-laning of Ghaghra bridge to



Varanasi section of NH-233 in the State of Uttar Pradesh, in compliance to the MOEF&CC notification dated 3.11.2009, as amended on 25.1.2016. The Petitioner has also enclosed a copy of the prevailing Schedule of Rates (SoR) of the State of Uttar Pradesh in support of its claim for rate for transportation of fly ash. The Petitioner has further submitted that it had already furnished the ash transportation expenses that was charged to P&L account, over and above the amount accumulated in ash fund through sale of ash, for the generating station, duly certified by Auditor and has claimed the same as additional O&M expense on account of transportation of ash in terms of the MOEF&CC notification dated 25.1.2016. The Petitioner has submitted that the net expenses charged to P&L account has been arrived at by deducting the revenue earned from sale of fly ash/fly ash products after 25.1.2016 as tabulated below:

	(Rs in lakh)
Revenue from Sale of Fly Ash/Fly ash products (A)	5867.38
Expenditure on Ash transportation (B)	15230.95
Ash Transportation expenses charged to P&L (B-A)	9363.57

Note: All figures above are corresponding to 1550 MW (Stage-I, II,III,IV) whereas the claim above is for 420 on pro-rata basis)

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

93. The Respondent, UPPCL has submitted that the Petitioner has not provided the details of the procedure for award of Fly Ash Transportation contract. It has stated that only the expenditure, net of revenue, and not the actual expenditure incurred by the Petitioner, has been certified by the Auditor. The Respondent has further submitted that the net expenditure of Rs.9363.56 lakh has been apportioned based on capacity, amongst all the four stages of the generating station. As such, such apportionment ignores factors like running days of unit, age of plant,



technological factors etc. It has requested that the Petitioner may be directed to provide details of unit-wise ash generation, so that the transportation cost can be more realistically worked out. The Respondent BRPL has submitted that the MOEF&CC notification dated 25.1.2016 provides that the cost of transportation of ash within the radius of 100 km from the generating station, shall have to be borne by the generating company, and upto 300 km, the same will have to be shared equally between the user and the generating station. Therefore, it has submitted that the burden cannot be shifted on to the beneficiaries. In response, the Petitioner has submitted that it has already furnished the details in regard to the expenditure incurred in transportation, duly certified by Auditors. The Petitioner has also submitted that 8.66 lakh m³ fly ash has been transported to a distance beyond 100 km and less than 300 km from generating station during 2018-19. It has reiterated that the contract for ash transportation was awarded to NHAI through MOU, at per scheduled rates of the Government of Uttar Pradesh.

94. The matter has been examined. As regards the reimbursement of ash transportation expenses, the Commission in its order dated 5.11.2018 in Petition No.172/MP/2016, while directing compliance of certain conditions by the Petitioner, had granted liberty to the Petitioner to approach the Commission at the time of truing-up exercise for the 2014-19 tariff period along with all details/ information, duly certified by auditor. In compliance to the above, the Petitioner has furnished the details of the distance to which fly ash has been transported from the generating station, schedule rates applicable for transportation of fly ash, as notified by the Government of Uttar Pradesh along with details, including Auditor certified accounts. These documents have been examined and on prudence check, the reimbursement of Rs.2537.22 lakh as claimed by the Petitioner for the year 2018-19 towards fly ash transportation expenses is allowed to be recovered in 6 (six) equal monthly

installments during the year 2021-22. Considering the fact that the reimbursement of the ash transportation expenses is being allowed based on the MOEF&CC notification, these expenses are not made part of the O&M expenses and the consequent annual fixed charges being determined in this order under the 2014 Tariff Regulations.

Interest on Working Capital

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

“28. Interest on Working Capital:

(1) The working capital shall cover:

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

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

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

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

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

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

(vi) Operation and maintenance expenses for one month.

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

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

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

Fuel Cost and Energy Charges in Working Capital

96. Regulation 28(2) of the 2014 Tariff Regulations provides that the computation of cost of fuel as a part of IWC is to be based on the landed price and gross calorific value of the fuel as per actuals, for the three months preceding the first month for which the tariff is to be determined.

97. Regulation 30(6) of the 2014 Tariff Regulations provides as under:

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

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

(a) For coal based and lignite fired stations

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

(b) xxxxx

Where,

AUX = Normative auxiliary energy consumption in percentage.

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

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

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

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

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

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

LC = Normative limestone consumption in kg per kWh.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

101. In Petition No. 289/GT/2014 filed by the Petitioner for determination of tariff of this generating station for the 2014-19 tariff period, the Petitioner had not furnished the GCV of coal on 'as billed' and on 'as received' basis for the preceding 3 months i.e. January 2014, February 2014 and March 2014 that were required for determination of IWC. Therefore, the Commission in its order dated 31.3.2017 allowed the Interest on Working Capital (IWC) without any fuel components and two months' energy charges in working capital. The Commission had observed the following:

"80. In the absence of GCV of coal on "as billed" as well as on 'as received' basis for the preceding 3 months i.e. January, 2014, February, 2014 and March, 2014, the computation of fuel component and 2 months Energy charges in working capital has not been considered for the period 2014-19.

81. In view of this, Interest on Working capital is allowed without any fuel components and 2 months Energy Charges in Working Capital. It is up to the Petitioner to get GCV "as billed" from the coal supplier and work out the IWC component

82. The Petitioner shall compute and claim the Energy Charges on month to month basis from the beneficiaries based on the formulae given under Regulation 30(6)(a) of the 2014 Tariff Regulations read with Commission's order dated 25.1.2016 in Petition No. 283/GT/2014."

102. The Petitioner, in this petition, has furnished average GCV of coal as 3788.33 kCal/kg on “as received” basis for the period from October 2016 to March 2019. Also, as per the order dated 25.1.2016 in Petition No. 283/GT/2014, the Petitioner, in Form-13 F, has considered the average GCV of coal on “as received basis” i.e. from wagon top, for the period from October 2016 to March 2019, for the purpose of computation of working capital for the 2014-19 tariff period. The Petitioner has further submitted that CEA vide letter dated 17.10.2017 has opined that a margin of 85-100 kCal/kg for pit-head station and a margin of 105-120 kCal/kg for non-pit head station is required to be considered as loss of GCV of coal on “as received” and on “as fired basis respectively. Accordingly, the Petitioner has considered a margin of 120 kCal/kg on average GCV of coal for the period from October 2016 to March 2019 for computation of working capital of the generating station. Accordingly, the cost of fuel component in the working capital of the generating station claimed by the Petitioner is as under:

	<i>(Rs in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal towards stock (30 days)	6591.70	6591.70	6591.70	6750.54	6750.54
Cost of Coal towards Generation (30 days)	6591.70	6591.70	6591.70	6750.54	6750.54
Cost of Secondary fuel oil 2 months	143.58	143.97	143.58	147.04	147.04

103. The Respondent BRPL has submitted that the Petitioner is not following the order dated 25.1.2016 in Petition No. 283/GT/2014 as regards measurement of GCV on wagon top and that owing to failure of the Petitioner in providing ‘as billed GCV’ or ‘as received GCV’, only provisional tariff (and not final tariff) was determined by the Commission vide order dated 31.3.2017 in Petition No. 289/GT/2014. BRPL has stated that if the Petitioner is interested in getting the final tariff determined for the generating station, it must file the data related to GCV of coal on ‘as received basis’ as per directions of the Commission in order dated 25.1.2016 in Petition No.283/GT/2014. The Respondent has stated that as the Petitioner itself is



responsible for the GCV of coal, the contention of the Petitioner is liable to be rejected by the Commission. In addition, the Respondent has submitted that the claim of the Petitioner for reduction of 120 kCal/kg on account of GCV loss during storage at plant end based on the CEA's recommendation is without any basis and is in contravention to provisions of the 2014 Tariff Regulations. It has further submitted that the consideration of loss of 120 kCal/kg as suggested by CEA in its report dated 17.10.2017 is subject matter in Petition No. 244/MP/2016 (filed by the Petitioner) and Petition No. 64/MP/2016 (filed by Respondent), which are pending adjudication. The Respondent BRPL has also stated that any truing-up on this aspect should be subject to outcome of the said appeals pending before APTEL.

104. In response, the Petitioner has clarified that as directed by the Commission vide its Order dated 28.8.2019 in Petition No.115/MP/2018, Order dated 28.8.2019 in Petition No.152/MP/2018 and Order dated 30.8.2019 in Petition No.155/MP/2018, month-wise GCV from October 2016 to March 2019 for the generating station has been furnished. The Petitioner has contended that since the Commission has not taken a final view as regards the fuel components and two months' energy charges for working capital while determining tariff for the 2014-19 tariff period, IWC in this petition has been computed by the Petitioner by taking the landed price of fuel for the months of January 2014, February 2014 and March 2014 and GCV of coal 'as received' from October 2016 to March 2019 and applying the bank rate as on 1.4.2014 to the entire tariff period assuming all other parameters as per Regulation 28(1)(a) of the 2014 Tariff Regulations, including maintenance spares, receivable, O&M expenses and cost of secondary fuel. Accordingly, the Interest on Working capital calculated by the Petitioner is as under:

<i>(Rs in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
4605.61	4654.10	4761.85	4919.98	5136.25

105. Clarification was sought from the Petitioner on the details of GCV on 'as received' basis for the months of January 2014 to March 2014, which was uploaded on the website of the Petitioner and shared with the beneficiaries. The Petitioner, vide affidavit dated 31.5.2021, has submitted that though the computation of energy charges moved from 'as fired' basis to 'as received' basis with effect from 1.4.2014 in terms of Regulation 30(6) of the 2014 Tariff Regulations, however, for calculation of IWC under Regulation 28(2) of the 2014 Tariff Regulations, GCV should be as per 'actuals' for the three months preceding the first month for which tariff is to be determined. It has further submitted that for the 2014-19 tariff period, Regulation 28(2) of the 2014 Tariff Regulations unequivocally provide that the actual cost and GCV of the preceding three months shall be considered and for these preceding three months (January 2014 to March 2014), by virtue of it falling under the 2009 Tariff Regulations, shall be computed on the basis of 'as fired' GCV. Referring to the judgment of the Hon'ble Supreme Court in PTC India v CERC (2010) 4 SCC 603 and the judgment of APTEL in NEEPCO v TERC (2006) APTEL 148, the Petitioner has submitted that the Commission is bound by the provisions of the tariff regulations and that purposive interpretation ought to be given to the 2014 Tariff Regulations and interest on working capital ought to be computed in terms of Regulation 28(2) of the 2014 Tariff Regulations on actual GCV i.e. 'as fired' GCV. The Petitioner has submitted that without prejudice to the above submissions, it has furnished the details of GCV on 'as received' basis for the months of January 2014 to March 2014, in compliance with the directions of the Commission, as under:

Sl. No.	Month	Weighted Average GCV of coal received (EM basis) (kcal/kg)	Total moisture (TM) (in %)	Equilibrated Moisture (EM) (In %)	Weighted Average GCV of coal received (TM basis) (kcal /kg)
		A	B	C	$D = A * (1 - B\%) / (1 - C\%)$
1	January, 2014	3975	8.71	4.72	3808.54
2	February, 2014	4056	12.08	4.39	3729.77



3	March, 2014	3975	8.12	3.91	3800.84
	Average				3779.72

106. The submissions have been considered. As stated in paragraph 102 above, the Petitioner, in Form-13 F, has considered the average GCV of coal on “as received basis” i.e. from wagon top for the 30 months period from October 2016 to March 2019 and a margin (loss) of 120 kCal/kg for the purpose of computation of working capital for the 2014-19 tariff period. The Respondent BRPL has objected to considering such a margin of 120 kCal/kg.

107. Regulation 28(2) of the 2014 Tariff Regulations provides that the computation of cost of fuel as a part of IWC is to be based on the landed price and gross calorific value of the fuel as per actuals, for the three months preceding the first month for which the tariff is to be determined. Thus, calculation of IWC for 2014-19 period is to be based on such values for months of January 2014, February 2014 and March 2014. The Petitioner had not furnished these values at the time of determination of tariff for 2014-19 tariff period in Petition No. 289/GT/2014. In the instant truing up petition, the Petitioner has proposed that instead of GCV for January 2014, February 2014 and March 2014, the Commission may consider the average value of 30 months from October 2016 to March 2019 since measurement of ‘as received’ GCV has been done in accordance with directions of the Commission vide order dated 25.1.2016 in Petition No. 283/GT/2014. In our view, proposal of the Petitioner to consider the retrospective application of 30 months (October 2016 to March 2019) average of ‘as received’ GCV data in place of ‘as received’ GCV of January 2014 to March 2014, is not acceptable as the average GCV for 30 months may not be commensurate to the GCV of coal for January 2014 to March 2014, which are required to be considered for calculating IWC in terms of Regulation 28(2) of the 2014 Tariff Regulations. This is because due to efflux of time (gap of 30 month), the quality of coal extracted from linked mines would have undergone considerable



changes. Also, a margin(loss) of GCV of 120 kCal/kg cannot be considered as there is no provisions of the same in the 2014 Tariff Regulations.

108. It is observed that though the Petitioner has furnished the details of 'as received' GCV for the three months of January 2014 to March 2014 as given in the table under paragraph 105 above, it has submitted that GCV of fuel is to be considered 'on actuals' for January 2014 to March 2014 and as such GCV is required to be considered on 'as fired' basis. The Petitioner has contended that since the period of January 2014 to March 2014 falls in the 2009-14 tariff period, for measurement of GCV of coal, Regulation 18(2) read with Regulation 21(6) of the 2009 Tariff Regulations was applicable, which mandates that generating company shall measure the GCV on 'as fired' basis (and not on 'as received' basis). This submission of the Petitioner is also not acceptable in view of provisions of Regulation 21(6) of the 2009 Tariff Regulations that was amended on 31.12.2012, by addition of the following provisos:

"The following provisos shall be added under Clause (6) of Regulation 21 of the Principal Regulations as under, namely:

Provided that generating company shall provide to the beneficiaries of the generating station the details of parameters of GCV and price of fuel i.e. domestic coal, imported coal, e-auction coal, lignite, natural gas, RLNG, liquid fuel etc., as per the form 15 of the Part-I of Appendix I to these regulations:

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

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

Thus, in terms of the above amendment to the 2009 Tariff Regulations, the details regarding the weighted average GCV of the fuels on 'as received' basis was also required to be provided by the Petitioner along with bills of the respective month.

Also, bills, details of parameters of GCV and price of fuel were to be displayed by the Petitioner on its website on monthly basis.

109. As per SOR to the 2014 Tariff Regulations, we note that the main consideration of the Commission, while moving from 'as fired' GCV to 'as received' GCV for the purpose of energy charges under Regulation 30(6) of the 2014 Tariff Regulations for the 2014-19 tariff period, was to ensure that GCV losses which might occur within the generating station after receipt of coal are not passed on to the beneficiaries on account of improper handling and storage of coal by the generating companies. As such, for the purpose of calculating energy charges, the Commission moved from 'as fired' GCV to 'as received' GCV under Regulation 30(6) of the 2014 Tariff Regulations, without allowing any margin between the two measurements of GCV. Thus, 'as received' GCV was made applicable for the purpose of calculating working capital requirements, based on the actual GCV of coal for the preceding three months (January 2014 to March 2014) of the first month (April 2014) for which tariff is to be determined, in terms of Regulation 28(2) of the 2014 Tariff Regulations. In case the submission of the Petitioner that 'as fired' is to be considered 'at actuals' for the preceding three months for purpose of IWC, then the same would mean allowing (and passing through) all storage losses, which would have occurred during the preceding three months (January 2014 to March 2014) for the 2014-19 tariff period. This, according to us, defeats the very purpose of moving from 'as fired' GCV to 'as received' GCV in the 2014 Tariff Regulations. In this background and keeping in view that in terms of amended Regulation 21(6) of the 2009 Tariff Regulations, the Petitioner was required to share details of the weighted average GCV of the fuel on 'as received' basis, we consider the fuel component and energy charges for two months, based on 'as received' GCV of the preceding three months (January 2014 to

March 2014), for the purpose of computation of IWC, in terms of Regulation 28(2) of the 2014 Tariff Regulations.

110. The Petitioner has calculated GCV of 3779.72 kCal/kg which represents the simple average of GCV of the preceding three months. The weighted average GCV for three months, based on the net coal quantities as per Form-15 of the petition and the monthly GCVs as submitted by the Petitioner in the table under paragraph 105 above, works out to 3782.05 kCal/kg. Accordingly, the cost for fuel components in working capital has been computed considering the fuel details (price and GCV) as per Form-15, and GCV of 3782.05 kCal/kg. All other operational norms such as Station Heat Rate, Auxiliary Energy Consumption and Secondary Fuel cost have been considered as per the 2014 Tariff Regulations for calculation of the fuel components in working capital.

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

	(Rs. in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal towards stock (30 days)	6393.80	6393.80	6393.80	6547.87	6547.87
Cost of Coal towards Generation (30 days)	6393.80	6393.80	6393.80	6547.87	6547.87
Total	12787.61	12787.61	12787.61	13095.74	13095.74
Cost of Secondary fuel oil 2 months	141.97	142.36	141.97	145.39	145.39

Month to Month Energy Charges

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

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

(a) For coal based and lignite fired stations

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

Where,

AUX = Normative auxiliary energy consumption in percentage.

CVPF = Gross calorific value of primary fuel as received, in kCal per kg, per litre
or per standard cubic metre, as applicable.
CVSF = Calorific value of secondary fuel, in kCal per ml.
ECR = Energy charge rate, in Rupees per kWh sent out.
GHR = Gross station heat rate, in kCal per kWh.
LC = Normative limestone consumption in kg per kWh.
LPL = Weighted average landed price of limestone in Rupees per kg.
LPPF = Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable during the month.
SFC= Normative specific fuel oil consumption, in ml/ kWh
LPSFi= Weighted average landed price of secondary fuel in Rs/ ml during the month

Energy Charge Rate for computation for working capital

113. The allowable Energy Charge Rate (ECR), based on the operational norms as specified under in Regulation 36(A) of the 2014 Regulations and on weighted average of 'as received' GCV of 3782.05 kcal/kg is worked out as under:

	Unit	2014-19
Capacity	MW	420
Gross Station Heat Rate	Kcal/kWh	2450
Aux. Energy Consumption	%	9.00
Weighted average GCV of oil	Kcal/lit	9990
Average GCV of Coal for January to March 2014	Kcal/kg	3782.05
Weighted average price of oil	Rs/KL	55789.96
Weighted average price of Coal	Rs/MT	3940.46
Rate of Energy Charge ex-bus	Rs/kWh	2.830

114. Regulation 36(A) of the 2014 Tariff Regulations is reproduced below:

“36. The norms of operation as given hereunder shall apply to thermal generating stations:

(A) Normative Annual Plant Availability(NAPAF)

(a) All thermal generating stations, except those covered under clauses (b), (c), (d) & (e)-85%

Provided that in view of shortage of coal and uncertainty of assured coal supply on sustained basis experienced by the generating stations, the NAPAF for recovery of fixed charges shall be 83% till the same is reviewed.

The above provision shall be reviewed based on actual feedback after 3 years from 01.04.2014”

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

(a) ECR of Rs.2.830/kWh as calculated above (rounded off to three places as per Regulation 30(6) of the 2014 Regulations);

(b) Ex-bus energy (two months), corresponding to the installed capacity of 420 MW, normative availability of 83% for first three years and 85% for last two years, and Auxiliary Energy Consumption of 9% works out as:

- (i) 463.15 MU $\{420 \times 1000 \times 0.91 \times 8760 \times 0.83 \times 2 / (12 \times 10^6)\}$ for the years 2014-15 and 2016-17;
- (ii) 464.42 MU $\{420 \times 1000 \times 0.91 \times 8784 \times 0.83 \times 2 / (12 \times 10^6)\}$ for the year 2015-16 (leap year);
- (iii) 474.31 MU $\{420 \times 1000 \times 0.91 \times 8760 \times 0.85 \times 2 / (12 \times 10^6)\}$ for the years 2017-18 and 2018-19;

116. The Energy Charges of two months for computation of working capital has been worked out as under:

(Rs. in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
13107.14	13143.05	13107.14	13422.98	13422.98

117. Accordingly, the fuel component and energy charges for two months in working capital are allowed as under:

(Rs. in lakh)					
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal for 60 days (30 days for coal stock + 30 days for generation)	12787.61	12787.61	12787.61	13095.74	13095.74
Cost of Secondary fuel oil for 2 months	141.97	142.36	141.97	145.39	145.39
Energy Charges for 2 months	13107.14	13143.05	13107.14	13422.98	13422.98
Total	13249.11	13285.41	13249.11	13568.37	13568.37

Maintenance Spares for computation of working capital

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

(Rs. in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
2070.93	2206.15	2569.04	2790.48	3479.67

119. Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provides for maintenance spares @20% of the O&M expenses as specified under Regulation 29 of the 2014 Tariff Regulations. The O&M expenses allowed under Regulations 29(1) and 29(2) of the 2014 Tariff Regulations, including water charges and capital spares, is as follows:



(Rs.in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
10329.59	10988.75	11649.09	12304.43	12974.81

120. Accordingly, maintenance spares @20% of O&M expenses (including water charges and capital spares) allowed for the 2014-19 tariff period is as follows:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
2065.92	2197.75	2329.82	2460.89	2594.96

O&M expenses (1 month) for Computation of Working Capital

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

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
862.89	919.23	1070.43	1162.70	1449.86

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

Rs in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
860.80	915.73	970.76	1025.37	1081.23

123. The difference in the claimed O&M expenses for 1 month and maintenance spares (tables under paragraphs 118 and 121 of this order respectively) and the O&M expenses for 1 month and cost of maintenance spares allowed (tables under paragraphs 120 and 122 of this order) as above is due to the fact that, while the Petitioner's claim is based on the O&M expenses inclusive of the expenditure on ash transportation, GST and impact of wage revision, these components have not been included in our calculations towards working capital requirements.

Receivables

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

	(Rs.in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Variable Charges – for two months	13107.14	13143.05	13107.14	13422.98	13422.98
Fixed Charges – for two months	4318.72	4443.55	4559.44	4689.31	4812.49
Total	17425.86	17586.61	17666.59	18112.29	18235.47

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

	(Rs.in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal - 15 or 30 days (pit or non-pit head stations) for the purpose of stock	6393.80	6393.80	6393.80	6547.87	6547.87
Cost of Coal - 30 days for the purpose of generation	6393.80	6393.80	6393.80	6547.87	6547.87
Cost of secondary fuel oil - 2 months	141.97	142.36	141.97	145.39	145.39
Maintenance Spares - 20% of O&M	2065.92	2197.75	2329.82	2460.89	2594.96
Receivables - 2 months	17,425.86	17,586.61	17,666.59	18112.29	18235.47
O&M expenses - 1 month	860.80	915.73	970.76	1025.37	1081.23
Total Working Capital	33,282.16	33,630.06	33,896.74	34839.68	35152.80
Rate of Interest	13.5000%	13.5000%	13.5000%	13.5000%	13.5000%
Total Interest on Working capital	4,493.09	4,540.06	4,576.06	4,703.36	4,745.63

Compensation Allowance

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

“17. Compensation Allowance:

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

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

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

127. In terms of the above regulation, both the units of the generating station are in commercial operation for more than 10 years from their respective date of CODs and accordingly, the compensation allowance worked out as under:

1	Capacity in MW	210	210	
2	COD	1.1.2001	1.3.2000	
3	Useful life as on 1.4.2014	14.09	13.25	
4	Actual useful life after			
	(a) 10 years	1.3.2010	1.1.2011	
	(b) 15 years	1.3.2015	1.1.2016	
	(c) 20 years	1.3.2020	1.1.2021	
	(d) 25 years	1.3.2025	1.1.2026	
5	Compensation Allowance (unit-wise)			Total
	2014-15	42.00	42.00	84.00
	2015-16	105.00	42.00	147.00
	2016-17	105.00	105.00	210.00
	2017-18	105.00	105.00	210.00
	2018-19	105.00	105.00	210.00
	Total	462.00	399.00	861.00

128. Therefore, the total compensation allowance of Rs.861.00 lakh for Unit-I and Unit-II of the generating station during the 2014-19 tariff period is allowed.

Annual Fixed Charges

129. Based on the above discussion, the annual fixed charges approved for the 2014-19 tariff period in respect of the generating station is summarized as under:

	(Rs.in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	3408.34	3417.72	3419.23	3417.22	3425.66
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	7681.30	7714.80	7712.29	7710.87	7728.85
Interest on Working Capital	4493.09	4540.06	4576.06	4703.36	4745.63
O&M Expenses	10329.59	10988.75	11649.09	12304.43	12974.81
Sub-Total	25912.32	26661.32	27356.67	28135.88	28874.95
Compensation Allowance	84.00	147.00	210.00	210.00	210.00
Special Allowance	0.00	0.00	0.00	0.00	0.00
Total	25996.32	26808.32	27566.67	28345.88	29084.95

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

130. The Petitioner has also filed Petition No. 244/MP/2016 seeking appropriate reliefs claiming difficulty faced by it in implementing Regulation 30(6) of the 2014 Tariff Regulations and the directions issued by the Commission in its order dated



25.1.2016 in Petition No.283/GT/2014 and for consequential directions. The matter is presently pending adjudication of APTEL. In view of this, parameters of IWC and energy charges allowed in the present order are subject to final decision of APTEL.

131. The difference between the annual fixed charges recovered by the Petitioner in terms of order dated 31.3.2017 read with corrigendum dated 24.5.2017 in Petition No. 289/GT/2014 and the annual fixed charges determined by this order shall be adjusted in terms of the provisions of Regulation 8 of the 2014 Tariff Regulations.

Summary

132. The total expenses allowed during the 2014-19 tariff period (on truing-up) for the generating station are summarized as follows:

	(Rs. in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	130591.02	130544.37	130465.35	130459.69	130417.35
Add: Admitted Additional capital expenditure	(-) 46.65	(-) 79.02	(-) 5.66	(-) 42.34	(-) 50.88
Closing Capital Cost	130544.37	130465.35	130459.69	130417.35	130366.47
Depreciation	3408.34	3417.72	3419.23	3417.22	3425.66
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	7681.30	7714.80	7712.29	7710.87	7728.85
Interest on Working Capital	4493.09	4540.06	4576.06	4703.36	4745.63
O&M Expenses	10329.59	10988.75	11649.09	12304.43	12974.81
Compensation Allowance	84.00	147.00	210.00	210.00	210.00
Wage revision impact claimed (excluding PRP/ex-gratia)	-	20.78	1176.33	1306.43	1263.54
Additional expenditure towards fly ash transportation	-	-	-	-	2537.22

133. Petition No.300/GT/2020 is disposed of in terms of the above.

Sd/-
(Arun Goyal)
Member

Sd/-
(I.S.Jha)
Member

Sd/-
(P.K. Pujari)
Chairperson