

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 292/GT/2020

Coram:

**Shri I. S. Jha, Member
Shri Arun Goyal, Member
Shri Pravas Kumar Singh, Member**

Date of Order: 22nd February, 2023

In the matter of

Petition for truing up of annual fixed charges in respect of the Simhadri Super Thermal power Station Stage-I (1000 MW) for the period 2014-19.

And

In the matter of

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

.....Petitioner

Vs

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

...Respondents



Parties Present:

Shri Venkatesh, Advocate, NTPC
 Shri Anant Singh, Advocate, NTPC
 Shri Rishabh Sehgal, Advocate, NTPC
 Shri Isnain Muzamil, Advocate, NTPC
 Shri A.S. Pandey, NTPC
 Shri Harshit Sharma, NTPC

ORDER

This petition has been filed by the Petitioner, NTPC Limited for truing-up of tariff for the period 2014-19 in respect of Simhadri Super Thermal power Station Stage-I (2 x 500 MW) (in short 'the generating station') in accordance with Regulation 8 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (in short 'the 2014 Tariff Regulations').

2. The generating station with a capacity of 1000 MW comprises of two units of 500 MW each. Unit-I of the generating station was declared under commercial operation on 1.9.2002 and Unit-II on 1.3.2003. The Commission vide its order dated 27.6.2016 in Petition No. 270/GT/2014, had approved the capital cost and the annual fixed charges of the generating station for the period 2014-19 as under:

Capital Cost allowed*(Rs. in lakh)*

		2014-15	2015-16	2016-17	2017-18	2018-19
A	Opening Capital Cost	353306.58	358943.58	362283.58	363689.58	364813.58
B	Admitted Projected additional capital expenditure	5637.00	3340.00	1406.00	1124.00	2783.00
C	Closing Capital Cost (A+B)	358943.58	362283.58	363689.58	364813.58	367596.58
D	Average Capital Cost (A+C)/2	356125.08	360613.58	362986.58	364251.58	366205.08

Annual fixed charges allowed*(Rs. in lakh)*

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	17917.66	11003.48	11186.54	11293.27	11475.15
Interest on Loan	3858.50	3501.45	3203.57	2876.94	2561.00



Return on Equity	20950.84	21317.67	21457.95	21532.73	21648.21
Interest on Working Capital	8664.12	8578.90	8638.40	8868.04	8944.70
O&M Expenses	16526.32	17562.64	18660.27	19829.28	21069.74
Compensation Allowance	200.00	200.00	200.00	200.00	500.00
Total	68117.43	62164.12	63346.72	64600.23	66198.78

Present Petition

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

“(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 has filed the present petition for truing-up of tariff for the period 2014-19, and has claimed the following capital cost and annual fixed charges:

Capital Cost claimed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	353306.58	356117.47	356667.81	359456.51	364548.15
Add: Additions during the period	2839.34	550.41	2633.18	5209.61	713.00
Less: De-capitalization during the period	53.35	13.07	56.30	269.33	195.26
Add: Discharges during the period	24.90	13.00	211.82**	151.36**	150.12**
Closing Capital Cost	356117.47	356667.81	359456.51	364548.15	365216.01
Average Capital Cost	354712.03	356392.64	358062.16	362002.33	364882.08

***Amounts indicated as per Form-18 submitted vide affidavit dated 1.6.2022*

Annual Fixed Charges claimed

(Rs in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	17846.63	10710.85	10833.16	11156.73	11441.32
Interest on Loan	3845.31	3447.83	3144.53	2887.33	2592.60
Return on Equity	20868.32	21068.75	21167.10	21399.68	21626.73
Interest on Working Capital	11981.47	11909.33	12053.06	12426.70	12715.36
O&M Expenses	16905.00	18185.25	19116.42	20452.78	21819.31
Compensation Allowance (if applicable)	200.00	200.00	200.00	200.00	500.00
Sub-total	71646.71	65522.00	66514.28	68523.22	70695.33
Additional O&M Expenses					



	2014-15	2015-16	2016-17	2017-18	2018-19
Impact of Pay Revision	0.00	52.00	1687.07	2216.07	2881.28
Impact of GST	0.00	0.00	0.00	177.62	256.57
Ash Transportation Expenditure	0.00	0.00	0.00	0.00	2453.69
Total Annual fixed Charges claimed	71646.71	65574.00	68201.35	70916.91	76286.87

5. The Petitioner has filed certain additional information vide affidavits dated 18.3.2021, 28.6.2021, 16.7.2021, 1.6.2022 and 27.7.2022. The Petition was heard on 28.7.2022 and the Commission vide Record of Proceedings (ROP) had directed the Petitioner to submit certain additional information. In response, the Petitioner vide affidavit dated 8.8.2022, has filed the additional information, after serving copies to the Respondents. None of the Respondents have filed their replies nor were they represented during the hearing on 28.7.2022. Based on the submissions and the documents available on record, we proceed for truing-up the tariff of the generating station for the period 2014-19, after prudence check, as stated in the subsequent paragraphs.

Capital Cost

6. Clause (1) of Regulation 9 of the 2014 Tariff Regulations provides that the capital cost as determined by the Commission after prudence check in accordance with this regulation shall form the basis of determination of tariff for existing and new projects. Clause 3 of Regulation 9 of the 2014 Tariff Regulations provides as follows:

“9. Capital Cost:

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

(a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014.

(b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and

(c) expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15.

xxx...”

7. As stated above, the Commission vide its order dated 27.6.2016 in Petition No. 270/GT/2014 had approved the annual fixed charges of the generating station for the



period 2014-19, considering the opening capital cost of Rs. 353306.58 lakh (on cash basis) and the same has been considered as the opening capital cost, as on 1.4.2014, in accordance with Regulation 9(3) of the 2014 Tariff Regulations.

Additional Capital Expenditure

8. Regulations 14 of the 2014 Tariff Regulations provides as follows:

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

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

(ii) Works deferred for execution;

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



- (ii) Change in law or compliance of any existing law;
 - (iii) Any expenses to be incurred on account of need for higher security and safety of the plant as advised or directed by appropriate Government Agencies of statutory authorities responsible for national security/internal security;
 - (iv) Deferred works relating to ash pond or ash handling system in the original scope of work;
 - (v) Any liability for works executed prior to the cut-off date, after prudence check of the details of such un-discharged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.;
 - (vi) Any liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;
 - (vii) Any additional capital expenditure which has become necessary for efficient operation of generating station other than coal/lignite based stations or transmission system as the case may be. The claim shall be substantiated with the technical justification duly supported by the documentary evidence like test results carried out by an independent agency in case of deterioration of assets, report of an independent agency in case of damage caused by natural calamities, obsolescence of technology, up-gradation of capacity for the technical reason such as increase in fault level;
- xxx “

Projected additional capital expenditure allowed vide order dated 27.6.2016 in Petition No. 270/GT/2014

9. The details of the projected additional capital expenditure allowed vide order dated 27.6.2016 in Petition No. 270/GT/2014 is summarized below:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Raising Ash dyke	2383.00	2300.00	1406.00	1124.00	2783.00
Permanent Dust suppression system for Lagoons 1& 2	400.00	536.00	0.00	0.00	0.00
Dry Ash evacuation system	2854.00	504.00	0.00	0.00	0.00
Total additional capital expenditure	5637.00	3340.00	1406.00	1124.00	2783.00

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

(Rs. in lakh)

Sl. No.	Head of Work /Equipment	Regulation	2014-15	2015-16	2016-17	2017-18	2018-19	Total
A	Admitted claims							
1	Raising of Ash dyke	14(3) (iv)	2342.15	454.29	745.49	4985.77	348.86	8876.56
2	Permanent dust suppression system for Lagoon 1 & 2	14 (3) (ii)	497.19	0.00	0.00	0.00	0.00	497.19
3	Dry Ash Evacuation System (DAES)	14(3) (ii)	0.00	0.00	1715.66	0.00	245.22	1960.88
	Sub Total (A)		2839.34	454.29	2461.15	4985.77	594.08	11334.63
B	New Claims							
1	Continuous emission Monitoring system	14(3)(ii)	0.00	68.96	0.00	0.00	0.00	68.96



Sl. No.	Head of Work /Equipment	Regulation	2014-15	2015-16	2016-17	2017-18	2018-19	Total
2	Effluent Quality Monitoring System (EQMS)	14(3)(ii)	0.00	27.18	0.71	0.00	0.00	27.88
3	Free hold land	14(3)(ii)	0.00	0.00	171.33	0.00	0.00	171.33
4	LED lighting	14(3)(ii)	0.00	0.00	0.00	223.84	118.92	342.76
	Sub Total (B)		0.00	96.14	172.04	223.84	118.92	610.93
	Total Additional Capital Expenditure (C=A+B)		2839.34	550.43	2633.19	5209.61	713.00	11945.56
C	Decapitalisation							
1	De-capitalization of MS pipes	14(4)	31.82	0.00	0.00	0.00	0.00	31.82
2	De-capitalization of spares (part of capital cost)	14(4)	21.53	13.07	56.30	269.34	195.26	555.50
	Sub Total (D)		53.35	13.07	56.30	269.34	195.26	587.32
D	Liability Discharged							
1	Discharge of Liabilities	14 (3) (vi)	24.90	13.00	211.82	151.36	150.12	551.21
	Sub Total (D)		24.90	13.00	211.82	151.36	150.12	551.21
	Net Additional capital expenditure claimed (including discharges of liabilities)		2810.89	550.36	2788.71	5091.63	667.86	11909.45

A. Additional capital expenditure towards allowed works

Raising of Ash dyke

11. The Petitioner has claimed total additional capital expenditure of Rs. 8876.56 lakh during 2014-19 (Rs. 2342.15 lakh in 2014-15, Rs. 454.29 lakh in 2015-16, Rs. 745.49 lakh in 2016-17, Rs. 4985.77 lakh in 2017-18 and Rs. 348.86 lakh in 2018-19) towards Raising of ash dyke, under Regulation 14(3)(iv) of the 2014 Tariff Regulations. In justification for the same, the Petitioner has submitted that the Commission vide order dated 27.6.2016 in Petition No. 270/GT/2014 had already allowed expenditure towards ash dyke/ash handling for the 2014-19 tariff period. The Petitioner has submitted that these works were claimed by the Petitioner in phased manner as the requirement of the quantum of works depend upon the actual generation/ ash quantum etc., and the same was allowed.



12. It is noticed that the Commission vide its order dated 27.6.2016 in Petition No. 270/GT/2014 had approved the additional capital expenditure of Rs. 9996 lakh towards the raising of ash dyke for the 2014-19 tariff period. In the said order, the Petitioner was also directed to submit the (i) detail break-up of the activities along with the cost incurred for each work under the raising of Ash dyke works, (ii) the estimated expenditure envisaged for Ash handling system/ Ash Dyke raising, within the original scope of work, (iii) the actual expenditure incurred as on COD of the generating station and from COD to 2018-19, at the time of truing up of tariff. In response, the Petitioner has submitted that its Board had approved an amount of Rs.244.92 crore, (excluding IDC etc.) for Ash area/ Ash handling related works, on the basis of price of 4th quarter of 2002. In terms of this, the actual additional capital expenditure incurred for Ash handling/ Ash related works till 31.3.2019, as furnished by the Petitioner is as under:

(Rs. in lakh)

Details of Ash Pond/Ash handling related expenditure			
Description of work	Amount capitalized	Regulation	Tariff Period
Ash disposal area development	752		Till station COD i.e. 1.3.2003
Civil works of ash dyke raising, Earth covering on filled up dry ash of ash dyke	1472.99	18(1)(ii)	1.3.2003 to 31.3.2004
Ash pond and ash handling related works	126.2	18(1)(ii)	2004-06
Ash pond and ash handling related works	1482.6	18(2)(v)	2006-09
Ash pond raising and other related works	6865.7	9(2)(iii)	2009-14
Ash pond raising and other related works	8876.5	14(3)(iv)	2014-19
Total	19576		

13. It is observed that the ash related works are within the original scope of work and these works are continuous in nature, during the entire operational lifetime of the generating station. Moreover, the additional capital expenditure of Rs. 8876.56 lakh claimed by the Petitioner, is lesser than the additional capital expenditure of Rs. 9996



lakh already admitted by the Commission vide order dated 27.6.2016, for the period 2014-19. In this background, the additional capital expenditure claimed by the Petitioner is allowed under Regulation 14(3)(iv) of the 2014 Tariff Regulations.

Permanent dust suppression system for Lagoon 1 & 2

14. The Petitioner has claimed additional capital expenditure of Rs. 497.19 lakh in 2014-15 for Permanent dust suppression system for Lagoon 1&2 under Regulation 14(3)(ii) of the 2014 Tariff Regulations. In justification for the same, the Petitioner has submitted that the Commission vide its order dated 27.6.2016 in Petition No. 270/GT/2014 had already allowed an expenditure of Rs. 936 lakh for the said work during the period 2014-16 and therefore the claim may be allowed.

15. It is noticed that the Commission vide its order dated 27.6.2016 in Petition No. 270/GT/2014 had approved the additional capital expenditure of Rs. 936 lakh for the said work. In the said order, the Petitioner was also directed to (i) submit the details of works undertaken along with cost break-up for permanent dust suppression system and (ii) the actual data of dust emission compared to norms after installation of dust suppression system, at the time of truing up. However, it is observed that the Petitioner has not furnished the aforesaid information as directed in the said order. Considering the fact that the projected additional capital expenditure was allowed based on norms & guidelines specified by the Andhra Pradesh Pollution Control Board vide its letter dated 3.10.2013 and keeping in view that the actual additional capital expenditure claimed by the Petitioner is lesser than the projected capital expenditure allowed earlier, the claim of the Petitioner is allowed under Regulation 14(3)(ii) of the 2014 Tariff Regulations.

Dry ash evacuation system (DAES)



16. The Petitioner has claimed additional capital expenditure of Rs. 1715.66 lakh in 2016-17 and Rs. 245.22 lakh in 2018-19 for Dry Ash Evacuation System (DAES) under Regulation 14(3)(ii) of the 2014 Tariff Regulations. In justification for the same, the Petitioner has submitted that the Commission vide its order dated 27.6.2016 in Petition No. 270/GT/2014 had allowed an amount of Rs. 2854.00 lakh in 2014-15 and Rs. 504.00 lakh in 2015-16 for the said work. The Petitioner has also submitted that as all the units were running continuously, the part work was capitalised during 2016-17 and 2018-19, while the balance work shall be capitalised during the next tariff period. Accordingly, the Petitioner has prayed that the claim may be allowed.

17. It is observed that the Commission vide its order dated 27.6.2016 in Petition No. 270/GT/2014 had approved the additional capital expenditure of Rs. 3358.00 lakh for the said work. As the actual additional capital expenditure claimed by the Petitioner is lesser than the projected capital expenditure allowed earlier, the claim of the Petitioner is allowed under Regulation 14(3)(ii) of the 2014 Tariff Regulations.

B. New Claims

Continuous Emission Monitoring system

18. The Petitioner has claimed actual additional capital expenditure of Rs. 68.96 lakh towards Continuous Emission Monitoring System (CEMS) in 2015-16, under Regulation 14(3)(ii) of the 2014 Tariff Regulations. In justification of the same, the Petitioner has submitted that 'continuous monitoring of stack emission' is a statutory requirement to comply with the directions issued by Central Pollution Control Board on 5.2.2014, in terms of Section 18(1)(b) of the Air (Prevention & Control of Pollution) Act, 1981. The Petitioner has annexed the copy of the CPCB letter dated 5.2.2014 and has submitted



that CEMS has been installed for continuous online monitoring of emission parameters, such as SO_x, NO_x, CO, CO₂, Flue gas exit temp etc.

19. It is observed that the CPCB directions vide letter dated 5.2.2014, mandates the installation of CEMS. Also, the Commission vide its order dated 24.2.2017 in Petition No. 342/GT/2014 had allowed the claim of the Petitioner for additional capital expenditure towards CEMS in respect of Vindhyachal STPS, Stage-III, for the period 2014-16, as stated below:

“We have examined the matter. It is noticed that in Petition No. 148/GT/2013, the petitioner had claimed an expenditure of Rs. 32.00 lakh in 2013-14 for this work and the same was allowed on projection basis vide order dated 15.5.2014 under Regulation 9(2)(ii) of the 2009 Tariff Regulations on the ground that the same is a statutory requirement as per guidelines issued by MoEF, GOI dated 6.4.2011. However, based on the submissions of the petitioner in Petition No. 343/GT/2014 (truing-up of 2009-14) that the expenditure towards CEMS has been awarded and will be capitalized during the period 2014-19, the Commission vide order dated 6.2.2017 had granted liberty to the petitioner to claim the expenditure during 2014-19 with the observation that the same will be considered in accordance with the 2014 Tariff Regulations. The petitioner, in this petition has claimed the expenditure on CEMS under Regulation 14 (3) (ii) of the 2014 Tariff Regulations on the ground that the same is a statutory requirement in terms of the MoEF, GOI guidelines dated 6.4.2011. On perusal of the said guidelines dated 6.4.2011, it is observed that the petitioner in terms of the said guidelines is required to comply with certain additional conditions which includes the continuous monitoring of stack emissions as well as ambient air quality and to take corrective measures from time to time to ensure that the levels are within permissible limits. In view of the above, we are inclined to allow the claim of the petitioner for Rs. 34.37 lakh in 2014-15 and Rs. 2.38 lakh in 2015-16 under Regulation 14 (3) (ii) of the 2014 Tariff Regulations.”

20. In line with the above decision and keeping in view that the additional capital expenditure incurred is in respect of the asset/work, which is required for continuous monitoring of stack emissions as well as ambient air quality, we allow the actual additional capital expenditure claimed by the Petitioner under Regulation 14(3)(ii) of the 2014 Tariff Regulations.

Effluent Quality Monitoring System

21. The Petitioner has claimed actual additional capital expenditure of Rs. 27.88 lakh during 2015-17 (i.e. Rs. 27.18 lakh in 2015-16 and Rs. 0.71 lakh in 2016-17) towards



Effluent Quality Monitoring System (EQMS) under Regulation 14(3)(ii) of the 2014 Tariff Regulations. In justification of the same, the Petitioner has submitted that the additional capital expenditure is incurred in compliance to the CPCB order dated 5.2.2014.

22. It is observed that the CPCB order dated 5.2.2014 mandates the installation of EQMS. Also, the Commission vide its order dated 21.5.2022 in Petition No. 190/GT/2020 had allowed the Petitioner's claim for additional capital expenditure towards EQMS in respect of NCTPS, Stage-II, as stated below:

"35. The matter has been considered. The Petitioner has claimed the actual additional capital expenditure of Rs.25.84 lakh (on cash basis) towards EQMS based on the Central Pollution Control Board (CPCB) order dated 5.2.2014, wherein, all State Pollution Control Board (SPCB) and Pollution Control Committees (PCC) have been mandated to manage common hazardous waste & biomedical waste and to comply with norms. It is observed that the said order dated 5.2.2014 also empowers the SPCB and PCC to stipulate standards for discharge of environmental pollutants, for various categories of industries and common effluent treatment plants, common hazardous waste and biomedical waste incinerators, which are more stringent than those notified by the Central Government under the Environment Protection Act, 1986. Since the additional capital expenditure incurred is for compliance to the directions/ orders of CPCB/SPCB, the claim of the Petitioner is allowed under Regulation 14(3)(ii) of the 2014 Tariff Regulations. Also, the corresponding un-discharge liability of Rs.7.34 lakh in 2015-16 shall be considered at the time of actual discharge of liability."

23. In line with the above decision and keeping in view that the additional capital expenditure incurred is in respect of the asset/work which are mandatorily required, we allow the actual additional capital expenditure claimed by the Petitioner under Regulation 14(3)(ii) of the 2014 Tariff Regulations.

Free hold land

24. The Petitioner has claimed actual additional capital expenditure of Rs. 171.33 lakh in 2016-17 towards 'Free hold land' under Regulation 14(3)(ii) of the 2014 Tariff Regulations. In justification of the same, the Petitioner has submitted that enhanced compensation was paid towards the Land acquired for the project, as per judgment & decree of Hon'ble High Court of Andhra Pradesh, and the communication received from



District Collector, Visakhapatnam and the Revenue Officer. The Petitioner has accordingly prayed for allowing the expenditure, since the same was paid as per directions of the Hon'ble High Court. Since the claim of the Petitioner for additional capital expenditure of Rs. 171.33 lakh in 2016-17, on cash basis, is towards the payment of land compensation, based on the directions of the Hon'ble High Court, the same is allowed.

LED Lighting

25. The Petitioner has claimed total actual additional capital expenditure of Rs. 223.84 lakh in 2017-18 and Rs. 162.49 lakh in 2018-19 (i.e Rs. 118.92 lakh on cash basis and Rs. 43.57 lakh as un-discharged liability) towards LED electrification under Regulation 14(3)(ii) of the 2014 Tariff Regulations. The Petitioner has submitted that the additional capital expenditure has been incurred in compliance to the Ministry of Power (MOP), GoI letter dated 2.8.2017, which mandated the Petitioner to replace all old bulbs with LED bulbs in all buildings of the Petitioner, including compound/street lighting occupied by the Petitioner. Accordingly, the Petitioner has prayed that the additional capital expenditure may be allowed under change in law.

26. It is noticed that the additional capital expenditure incurred towards LED electrification is in terms of the MOP, GOI letter dated 2.8.2017, which has recommended the replacement of existing old bulbs with LED bulbs, thereby resulting in the reduction of about 50% to 90% in energy consumption by LED lighting. In our view, the MOP, GoI letter is recommendatory in nature and cannot be construed as a 'change in law event or for compliance to an existing law'. Moreover, the benefits of replacement of existing lighting system with LED lighting system, accrues to the Petitioner. Further, it is observed that the generating station has been allowed an



amount of Rs. 1300.00 lakh as 'Compensation Allowance' during the period 2014-19. Accordingly, the Petitioner to meet the said expenditure from the 'compensation allowance' allowed to the generating station. In view of this, the additional capital expenditure claimed under this head, is not allowed.

C. Decapitalisation

Decapitalization of MS pipes

27. The Petitioner has claimed Rs. 31.82 lakh towards decapitalisation of MS Pipes in 2014-15 under Regulation 14(4) of the 2014 Tariff Regulations. In justification of the same, the Petitioner has submitted that these assets were decapitalized as these became unserviceable. Regulation 14(4) of the 2014 Tariff Regulations provides that the original value of de-capitalised assets shall be deducted from the capital cost allowed to the generating station. Accordingly, the de-capitalisation of these assets as claimed by the Petitioner is allowed.

Decapitalization of spares (part of capital cost)

28. The Petitioner has claimed total decapitalisation of Rs. 555.50 lakh (i.e., Rs. 21.53 lakh in 2014-15, Rs. 13.07 lakh in 2015-16, Rs. 56.30 lakh in 2016-17, Rs. 269.34 lakh in 2017-18 and Rs. 195.26 lakh in 2018-19) under Regulation 14(4) of the 2014 Tariff Regulations. In justification of the same, the Petitioner has submitted that these assets were decapitalized as these became unserviceable. Regulation 14(4) of the 2014 Tariff Regulations provides that the original value of de-capitalised assets shall be deducted from the capital cost allowed to the generating station. Accordingly, the de-capitalisation of these assets as claimed by the Petitioner is allowed.



Discharges and Un-discharged liabilities

29. The discharge of liabilities allowed as part of the additional capital expenditure, corresponding to allowed assets, are as under:

(Rs. in lakh)

		2014-15	2015-16	2016-17	2017-18	2018-19
A	Opening Un-discharged liabilities as on 1.4.2014	5642.07	5745.87	5856.13	5757.67	5674.93
B	Discharges during the period out of liabilities as on 1.4.2009	8.12	0.00	200.00	27.60	68.09
C	Reversals during the period out of liabilities as on 1.4.2009	0.00	0.00	0.00	0.00	4502.51
D	Addition during the period	128.71	123.26	225.46	68.62	718.10**
E	Discharges during the period	16.79	13.00	11.82	123.76	82.04
F	Reversal of liabilities out of liabilities added during the period	0.00	0.00	112.10	0.00	0.00
G	Discharges of liabilities during the period (B+E)	24.90	13.00	211.82	151.36	150.12
H	Reversal of liability during the period (C+F)	0.00	0.00	112.10	0.00	4501.51
I	Total (Discharges + Reversal) (G+H)	24.90	13.00	323.92	151.36	4651.63
J	Closing Un-discharged liabilities (A+D-I)	5745.87	5856.13	5757.67	5674.93	1741.41

**Un-discharged liability for amount of Rs. 43.57 lakh claimed towards LED lightning during the year 2018-19 has been excluded

30. In terms of the above, the balance un-discharged liabilities corresponding to admitted capital cost, as on 31.3.2019, works out as Rs. 1741.41 lakh.

D. Exclusions

31. The admissibility of exclusions claimed by the Petitioner are discussed below:

(a) Item not claimed

32. The Petitioner has claimed exclusion of Rs. 42.57 lakh in 2014-15, Rs. 44.41 lakh in 2015-16, Rs. 710.06 lakh in 2016-17, Rs. 67.80 lakh in 2017-18 and Rs. 305.48 lakh in 2018-19 towards items not allowed by the Commission under the head 'Items not claimed'. It is observed from the submissions of the Petitioner that these items do not



form part of the capital cost of the generating station. Since these assets do not form part of the capital cost, the exclusion of these items for the said amount is allowed.

(b) Capitalization of Spares

33. The Petitioner has procured capital spares amounting to Rs. 625.37 lakh in 2014-15, Rs. 966.39 lakh in 2015-16, Rs. 861.94 lakh in 2016-17, Rs. 2406.43 lakh in 2017-18 and Rs. 1876.54 lakh in 2018-19. In justification, the Petitioner has submitted that as capital spares capitalized after the cut-off date are not allowed in terms of the 2014 Tariff Regulations, the same has been kept under exclusions. Since capitalization of spares over and above initial spares, procured after the cut-off date of the generating station, are not allowed for the purpose of tariff, as they form part of O&M expenses as and when consumed, the Petitioner has excluded the said amount. Accordingly, the exclusion claimed by the Petitioner under this head is in order and is allowed.

(c) Capitalisation of MBOA Items

34. The Petitioner has procured Miscellaneous Bought out Assets (MBOAs) amounting to Rs. 44.37 lakh in 2014-15. In justification of the same, the Petitioner has submitted that as capitalization of MBOA procured after the cut-off date of the generating station is not allowed for the purpose of tariff, the Petitioner has excluded the said amount. The exclusion claimed by the Petitioner under this head is in order and is allowed.

(d) Decapitalization of Capital Spares (not part of capital cost)

35. The Petitioner has excluded de-capitalized spares amounting to (-) Rs. 159.37 lakh in 2014-15 and (-) Rs. 348.50 lakh in 2015-16, (-) Rs. 291.66 lakh in 2016-17, (-) Rs. 195.14 lakh in 2017-18 and (-) Rs. 353.66 lakh in 2018-19, for the purpose of tariff. In justification of the same, the Petitioner has submitted that the items do not pertain to



the capital cost allowed by the Commission and accordingly, the capitalization of spares has been claimed as exclusion. The Petitioner has certified that these spares were not allowed by the Commission in its order dated 18.1.2010 in Petition No. 149/2009, Order dated 12.11.2014 in Petition No. 250/GT/2013 and Order dated 2.11.2015 in Petition No. 304/GT/2014. It appears from the above, that the decapitalized spares claimed under exclusion (as not part of capital cost), forms part of the spares disallowed in the aforesaid orders. Since the capitalization of above-mentioned spares was not allowed, they do not form part of the capital cost of the generating station, for the purpose of tariff. Hence, the exclusion of de-capitalization of the spares as claimed by the Petitioner, is in order and allowed.

(e) De-capitalization of MBOA forming part of the capital cost

36. The Petitioner has claimed de-capitalized MBOA amounting to (-) Rs. 276.27 lakh in 2014-15, (-) Rs. 2.04 lakh in 2015-16, (-) Rs. 309.30 lakh in 2016-17 (-) Rs. 28.94 lakh in 2017-18 and (-) Rs. 5.45 lakh in 2018-19. The decapitalization of MBOA includes Furniture & Fixtures, Other office equipment's and Hospital equipment's which were capitalized prior to the cut-off date of the generating station i.e., 31.3.2014. Hence, the decapitalized amount pertains to MBOA, which form part of the capital cost of the generating station, for the purpose of the tariff. As such, in terms of Regulation 14(4) of the 2014 Tariff Regulations, the decapitalized amount needs to be deducted for arriving at the capital cost for the purpose of tariff. The exclusion claimed by the Petitioner on account of decapitalization of MBOA, has to be treated in accordance to Regulation 14(4) of the 2014 Tariff Regulations. Accordingly, the exclusion claimed is not allowed.

(f) De-capitalization of MBOA not forming part of the capital cost

37. The Petitioner has claimed exclusion of de-capitalized MBOAs amounting to (-) Rs. 68.65 lakh in 2014-15, (-) Rs. 14.18 lakh in 2015-16, (-) Rs. 65.29 lakh in 2016-17 and



(-) Rs. 20.22 lakh in 2018-19, on the ground that the same do not form part of the allowed capital cost. On scrutiny of Form-9Bi, it is observed that the Petitioner, in respect of assets capitalised before 2014-15, has mentioned the order in which particular asset was disallowed, and for assets capitalised after 2014-15, the Petitioner has mentioned that capitalization of these MBOAs, beyond the cut-off date, was not admissible as per the 2014 Tariff Regulations and therefore, the de-capitalization of these items have been claimed under exclusion. As, the assets claimed under exclusion, do not form part of the capital cost of the generating station the exclusion for the same is allowed for the purpose of tariff.

(g) De-capitalization of Plant & Machinery related items forming part of the capital cost

38. The Petitioner has claimed de-capitalized Plant & Machinery related items amounting to (-) Rs. 6.47 lakh in 2015-16, (-) Rs. 54.18 lakh in 2017-18 and (-) Rs. 60.47 lakh in 2018-19. In justification of the same, the Petitioner has submitted that capitalization of these items as replacements, are not being allowed for the generating station and therefore, the corresponding decapitalisation, has been claimed under exclusion. It is observed that the Petitioner has not provided the details of the assets which are being replaced. Therefore, in the absence of any details it has become difficult to ascertain as to whether the replaced assets form part of the capital cost or not. Hence, the decapitalisation of Plant & Machinery related items, as claimed by the Petitioner under exclusion, is not allowed.

(h) De-capitalization of Plant & Machinery related items not forming part of the capital cost

39. The Petitioner has claimed de-capitalized Plant & Machinery related items amounting to (-) Rs. 0.74 lakh in 2015-16. However, the Petitioner has not provided any



justification for the said claim. Therefore, in the absence of any details it has become difficult to ascertain as to whether the decapitalised assets form part of the capital cost or not. Hence, the decapitalisation of Plant & Machinery related items as claimed by the Petitioner, under exclusion, are not allowed.

(i) Loan ERV

40. The Petitioner has excluded amounts of (-) Rs. 27663.84 lakh in 2014-15, Rs. 28204.52 lakh in 2015-16, (-) Rs. 2365.28 lakh in 2016-17, Rs. 10407.76 lakh in 2017-18 and Rs. 4681.28 lakh in 2018-19 on account of Loan ERV. The Petitioner has submitted that it is entitled to directly claim ERV on foreign currency loans as per the 2014 Tariff Regulations and therefore, has kept the ERV under exclusion. As the Petitioner is required to bill the said amount directly on the beneficiaries, the exclusion of loan ERV is allowed.

(j) Inter-Unit Transfer

41. The Petitioner has excluded amounts of (-) Rs. 0.74 lakh in 2014-15, (-) Rs. 2.92 lakh in 2015-16, (-) Rs. 9.62 lakh in 2017-18 and Rs. 31.18 lakh in 2018-19 on account of Inter-Unit Transfer. In justification of the same, the Petitioner has submitted that items under inter unit transfer, were not considered by the Commission for tariff purpose, and hence kept under exclusion. We are of the considered view that both positive and negative entries arising out of inter unit-transfers of temporary nature shall be ignored for the purpose of tariff. In view of above, the exclusion of inter-unit transfer as claimed by the Petitioner is allowed.

(k) Reversal of Liability

42. The Petitioner has claimed reversal of liability for (-) Rs. 112.10 lakh in 2016-17, (-) Rs. 0.44 lakh in 2017-18 and (-) Rs. 4518.86 lakh in 2018-19 as un-discharged



liability (zero on net basis). The Petitioner has submitted that as the tariff allowed is on cash basis, the reversal of liabilities, has been kept under exclusion. We agree with the submissions of the Petitioner that reversal of liabilities shall not impact the capital cost considered for the purpose of tariff, as determined on cash basis. Accordingly, the exclusion claimed by the Petitioner is in order and allowed.

(I) Ind AS Adjustment

43. The Petitioner has claimed an adjustment of Rs. 2051.77 lakh in 2016-17, Rs. 1631.18 lakh in 2017-18 and Rs. 12.92 lakh in 2018-19 towards Ind AS Adjustment (Overhauling) under exclusion. Further, the Petitioner has also claimed adjustment of (-) Rs. 1148.47 lakh in 2017-18 and (-) Rs. 1262.15 lakh in 2018-19 as Ind AS adjustments. Considering the fact that the accounting adjustment leading to zero expenditure does not impact the claim made by the Petitioner, the exclusion claimed by the Petitioner is allowed.

44. Accordingly, the summary of exclusions allowed/ not allowed is summarized below:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Exclusions claimed (A)	(-) 27497.02	28587.02	(-) 1629.06	12511.13	6347.69
Exclusions allowed (B)	(-) 27220.76	28596.28	(-) 1319.77	12594.25	6413.61
Exclusion not Allowed (A-B)	(-) 276.27	(-) 9.26	(-) 309.30	(-) 83.11	(-) 65.91

45. Based on the above discussion, the additional capital expenditure claimed and allowed for the 2014-19 tariff period is summarised as follows:

(Rs. in lakh)

Sl. No.	Head of Work /Equipment		2014-15	2015-16	2016-17	2017-18	2018-19	Total
A	Additional Capital Expenditure allowed in order dated 27.6.2016 in Petition No. 270/GT/2014							
1	Raising of ash dyke	Allowed in 270/GT/2014	2383.00	2300.00	1406.00	1124.00	2783.00	9996.00
		Claimed	2342.15	454.29	745.49	4985.77	348.86	8876.56
		Allowed	2342.15	454.29	745.49	4985.77	348.86	8876.56



Sl. No.	Head of Work /Equipment		2014-15	2015-16	2016-17	2017-18	2018-19	Total
2	Permanent dust suppression system for Lagoon 1 & 2	Allowed in 270/GT/2014	400.00	536.00	0.00	0.00	0.00	936.00
		Claimed	497.19	0.00	0.00	0.00	0.00	497.19
		Allowed	497.19	0.00	0.00	0.00	0.00	497.19
3	Dry ash evacuation system (DAES)	Allowed in 270/GT/2014	2854.00	504.00	0.00	0.00	0.00	3358.00
		Claimed	0.00	0.00	1715.66	0.00	245.22	1960.88
		Allowed	0.00	0.00	1715.66	0.00	245.22	1960.88
	Sub Total (A)	Allowed in 270/GT/2014	5637.00	3340.00	1406.00	1124.00	2783.00	14290.00
		Claimed	2839.34	454.29	2461.15	4985.77	594.08	11334.63
		Allowed	2839.34	454.29	2461.15	4985.77	594.08	11334.63
B	New Claim							
1	Continuous emission Monitoring system	Claimed	0.00	68.96	0.00	0.00	0.00	68.96
		Allowed	0.00	68.96	0.00	0.00	0.00	68.96
2	Effluent Quality Monitoring System (EQMS)	Claimed	0.00	27.18	0.71	0.00	0.00	27.88
		Allowed	0.00	27.18	0.71	0.00	0.00	27.88
3	Free hold land	Claimed	0.00	0.00	171.33	0.00	0.00	171.33
		Allowed	0.00	0.00	171.33	0.00	0.00	171.33
4	LED lighting	Claimed	0.00	0.00	0.00	223.84	118.92	342.76
		Allowed	0.00	0.00	0.00	0.00	0.00	0.00
	Sub Total (B)	Claimed	0.00	96.14	172.04	223.84	118.92	610.93
		Allowed	0.00	96.14	172.04	0.00	0.00	268.17
	Total Additional Capital Expenditure (C=A+B)	Claimed	2839.34	550.43	2633.19	5209.61	713.00	11945.56
		Allowed	2839.34	550.43	2633.19	4985.77	594.08	11602.80
C	Decapitalisation							
1	Decap of MS pipes	Claimed	31.82	0.00	0.00	0.00	0.00	31.82
		Allowed	31.82	0.00	0.00	0.00	0.00	31.82
2	Decap of spares (part of capital cost)	Claimed	21.53	13.07	56.30	269.34	195.26	555.50
		Allowed	21.53	13.07	56.30	269.34	195.26	555.50
	Sub Total (D)	Claimed	53.35	13.07	56.30	269.34	195.26	587.32
		Allowed	53.35	13.07	56.30	269.34	195.26	587.32
E	Liabilities Discharged							
1	Add. Discharge of Liabilities pertaining to allowed works for prior period	Claimed	24.90	13.00	211.82	151.36	150.12	551.21
		Allowed	24.90	13.00	211.82	151.36	150.12	551.21
	Total Additional Capital Expenditure	Allowed on Projection Basis	2839.34	550.43	2633.19	5209.61	713.00	11945.56
		Claimed	2810.89	550.36	2788.71	5091.63	667.86	11909.45
		Allowed	2810.89	550.36	2788.71	4867.79	548.94	11566.69
2	Exclusion not allowed		(-)276.27	(-)9.26	(-)309.30	(-)83.11	(-)65.91	(-)743.85
	Net Additional Capitalization allowed excluding Exclusions	Allowed on Projection Basis	2839.34	550.43	2633.19	5209.61	713.00	11945.56
		Claimed	2810.89	550.36	2788.71	5091.63	667.86	11909.45
		Allowed	2534.63	541.10	2479.42	4784.67	483.02	10822.83

Capital cost allowed for the period 2014-19



46. Accordingly, the capital cost approved for the period 2014-19 is summarized below:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	353306.58	355841.21	356382.31	358861.72	363646.40
Add: Admitted Additional capital expenditure	2534.63	541.10	2479.42	4784.67	483.03
Closing Capital Cost	355841.21	356382.31	358861.72	363646.40	364129.42
Average Capital Cost	354573.89	356111.76	357622.01	361254.06	363887.91

Debt-Equity Ratio

47. Regulation 19 of the 2014 Tariff Regulations provides as follows:

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

Provided that

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

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

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

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

(2) The generating company or the transmission licensee shall submit the resolution of the Board of the company or approval from Cabinet Committee on Economic Affairs (CCEA) regarding infusion of fund from internal resources in support of the 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 the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2014, the Commission shall approve the debt: equity ratio based on actual information provided by the generating company or the transmission licensee as the case may be.

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 as may be admitted by the Commission as additional capital expenditure for determination of tariff,



and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.

48. The Commission vide its order dated 27.6.2016 in Petition No. 270/GT/2014 had considered the gross normative loan of Rs. 247314.61 lakh and equity amounting to Rs. 105991.98 lakh, as on 31.3.2014. Accordingly, the gross normative loan amounting to Rs. 247314.61 lakh and equity of Rs. 105991.98 lakh, has been considered as on 1.4.2014, for the purpose of tariff. Further, the additional capital expenditure admitted as above, has been allocated in the debt-equity ratio of 70:30. The details of debt and equity considered for the purpose of tariff are as follows:

(Rs. in lakh)

	Capital cost as on 1.4.2014		Capital cost as on 31.3.2019	
	Amount	(%)	Amount	(%)
Debt (A)	247314.61	70.00%	254890.59	70.00%
Equity (B)	105991.98	30.00%	109238.82	30.00%
Total (C) = (A) + (B)	353306.58	100.00%	364129.42	100.00%

Return on Equity

49. Regulation 24 of the 2014 Tariff Regulations provides as follows:

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

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

Provided that:

- (i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:*
- (ii) the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:*
- (iii) additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:*
- (iv) the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode*



Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:

- (v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:
- (vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometer.”

50. Regulation 25 of the 2014 Tariff Regulations provides as follows:

“25. Tax on Return on Equity:

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

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

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

Illustration.

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

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

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

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

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

(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.”*



51. The Petitioner has claimed Return on Equity (ROE) for the period 2014-19, after grossing up the base rate of ROE of 15.50% with MAT rates for each year, as per Regulation 25 of the 2014 Tariff regulations. ROE has been trued-up on the basis of the MAT rate applicable in the respective years and is allowed as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Normative Equity-Opening	105991.98	106752.36	106914.69	107658.52	109093.92
Add: Addition of Equity due to additional capital expenditure	760.39	162.33	743.83	1435.40	144.91
Normative Equity-Closing	106752.36	106914.69	107658.52	109093.92	109238.83
Average Normative Equity	106372.17	106833.53	107286.61	108376.22	109166.37
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)	20859.58	21051.55	21140.83	21355.53	21569.09

Interest on Loan

52. Regulation 26 of the 2014 Tariff Regulations provides as follows:

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

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

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

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

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



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

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

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

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

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

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

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

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

- (a) Gross normative loan amounting to Rs. 247314.61 lakh as considered in order dated 27.6.2016 in Petition No. 270/GT/2014, as on 1.4.2014, has been retained as on 1.4.2014;
- (b) Cumulative repayment amounting to Rs. 117343.44 lakh as considered in order dated 27.6.2016 in Petition No. 270/GT/2014, as on 1.4.2014, has been retained as on 1.4.2014;
- (c) Accordingly, the net normative opening loan as on 1.4.2014 is Rs. 129971.17 lakh;
- (d) Addition to normative loan on account of additional capital expenditure approved above has been considered;
- (e) Depreciation allowed has been considered as repayment of normative loan during the respective year of the 2014-19 tariff period. Further, proportionate adjustment has been made to the repayments corresponding to discharges considered during the respective years on account of cumulative repayment adjusted as on 1.4.2009. Also, repayments have been adjusted for de-capitalization of assets considered for the purpose of tariff;



(f) The Petitioner has claimed WAROI of 3.1506% in 2014-15, 3.1640% in 2015-16, 3.1642% in 2016-17, 3.1645% in 2017-18 and 3.1648% in 2018-19. 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 period 2014-19, if any, for the generating station. In case of loans carrying floating rate of interest, the details of rate of interest, as furnished by the Petitioner, has been considered for the purpose of tariff.

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

	<i>(Rs in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Gross opening loan (A)	247314.61	249088.84	249467.61	251203.20	254552.48
Cumulative repayment of loan upto previous year (B)	117343.44	135039.37	145732.03	156367.34	167296.04
Net Loan Opening (C) = (A) - (B)	129971.17	114049.47	103735.59	94835.86	87256.44
Addition due to additional capital expenditure (D)	1774.24	378.77	1735.59	3349.27	338.12
Repayment of loan during the period (E)	17839.43	10704.12	10815.00	11128.77	11394.34
Less: Repayment adjustment on account of de-capitalization (F)	144.22	11.47	197.46	202.53	158.19
Add: Repayment adjustment on account of discharges corresponding to un-discharged liabilities deducted as on 1.4.2009 (G)	0.72	0.00	17.77	2.45	406.09
Net Repayment of during the year (H) = (E) - (F) + (G)	17695.93	10692.65	10635.32	10928.69	11642.24
Net Loan Closing (I) = (C) + (D) - (H)	114049.47	103735.59	94835.86	87256.44	75952.32
Average Loan (J) = (C+I)/2	122010.32	108892.53	99285.72	91046.15	81604.38
Weighted Average Rate of Interest of loan (K)	3.1506%	3.1640%	3.1642%	3.1645%	3.1648%
Interest on Loan (L) = (J)*(K)	3844.06	3445.36	3141.60	2881.16	2582.62

Depreciation

55. Regulation 27 of the 2014 Tariff Regulations provides as follows:



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

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

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

(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset: Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:

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

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

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

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

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

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

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

(8) In case of de-capitalization of assets in respect of generating station or unit



thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services.”

56. Cumulative depreciation amounting to Rs. 160349.22 lakh as on 1.4.2014, as considered in order dated 27.6.2016 in Petition No. 270/GT/2014, has been retained for the purpose of tariff. Since, as on 1.4.2014, the elapsed life of the generating station is 11.33 years, which is less than 12 years from the effective station COD of 30.11.2002. Therefore, depreciation is calculated by considering the weighted average rate of depreciation (WAROD) for the year 2014-15, as **Annexure-I** to this order, and by spreading over the remaining depreciable value, for the balance useful life for the period 2015-19. Accordingly, depreciation is worked out and allowed as under:

		<i>(Rs. in lakh)</i>				
		2014-15	2015-16	2016-17	2017-18	2018-19
A	Average Capital Cost	354573.89	356111.76	357622.01	361254.06	363887.91
B	Value of freehold land included in 'A'	7632.09	7632.09	7717.76	7803.42	7803.42
C	Aggregate Depreciable Value = [(A-B) *90%]	312247.62	313631.70	314913.83	318105.58	320476.04
D	Remaining aggregate depreciable value at the beginning of the year [(C) - (Cumulative Depreciation (shown at K) at the end of the previous year)]	151898.40	135585.55	126175.03	118706.92	110145.30
E	Balance useful life at the beginning of the year	13.67	12.67	11.67	10.67	9.67
F	Weighted average rate of depreciation	5.0312%	-	-	-	-
G	Depreciation during the year [(A)*(F) for the year 2014-15 and (D)/(E) for the year 2015-19]	17839.43	10704.12	10815.00	11128.77	11394.34
H	Cumulative depreciation at the end of the year (before adjustment for de-capitalization) [(G) + (Cumulative Depreciation (shown at	178188.65	188750.27	199553.80	210527.43	221725.08



		2014-15	2015-16	2016-17	2017-18	2018-19
	K) at the end of the previous year)]					
I	Add: Cumulative depreciation adjustment on account of discharges out of un-discharged liabilities deducted as on 1.4.2009	1.72	0.00	42.31	5.84	966.76
J	Less: Depreciation adjustment on account of de-capitalization	144.22	11.47	197.46	202.53	158.19
K	Cumulative depreciation at the end of the year = (H) + (I) – (J)	178046.15	188738.80	199398.66	210330.74	222533.65

Operation & Maintenance Expenses

57. Regulation 29(1)(a) of the 2014 Tariff Regulations provides as follows:

“Normative Operation and Maintenance expenses of thermal generating stations shall be as follows:

(a) Coal based and lignite fired (including those based on Circulating Fluidised Bed Combustion (CFBC) technology) generating stations, other than the generating stations/units referred to in clauses (b) and (d):

Year	200/210/250 MW Sets	300/330/350 MW Sets	500 MW Sets	600 MW Sets and above
FY 2014-15	23.90	19.95	16.00	14.40
FY 2015-16	25.40	21.21	17.01	15.31
FY 2016-17	27.00	22.54	18.08	16.27
FY 2017-18	28.70	23.96	19.22	17.30
FY 2018-19	30.51	25.47	20.43	18.38

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

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

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

(Rs. in lakh)



	2014-15	2015-16	2016-17	2017-18	2018-19
O&M expenses (normative) under Regulation 29 (1) of the 2014 Tariff Regulations (A)	16000.00	17010.00	18080.00	19220.00	20430.00
O&M expenses under Regulation 29(2) of the 2014 Tariff Regulations					
Water Charges (B)	724.09	813.68	688.47	768.31	840.39
Capital Spares consumed (C)	180.91	361.57	347.95	464.47	548.92
Total O&M expenses claimed (Regulation 29(1) & Regulation 29 (2) of the 2014 Tariff Regulations (D) = (A+B+C)	16905.00	18185.25	19116.42	20452.78	21819.31
Impact of Pay revision (E)	-	52.00	1687.07	2216.07	2881.28
Impact of GST (F)	-	-	-	177.62	256.57
Ash Transportation Expenditure (G)	-	-	-	-	2453.69
Total O&M expenses claimed (H) = (D+E+F+G)	16905.00	18237.25	20803.49	22846.47	27410.85

59. The normative O&M expenses claimed by Petitioner are in terms of Regulation 29(1)(a) of the 2014 Tariff Regulations and has also been allowed in order dated 27.6.2016 in Petition No. 270/GT/2014. Hence, the claim of the Petitioner for normative O&M expenses is allowed as under:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
16000.00	17010.00	18080.00	19220.00	20430.00

Water Charges

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

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

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

61. The Petitioner vide affidavit dated 28.6.2021 has furnished Audited Form 3(B), in respect of the actual water charges incurred for the 2014-19 tariff period along with the computation of the year-wise claim as shown below:



	Units	2014-15	2015-16	2016-17	2017-18	2018-19
Type of Cooling Tower	-	NDCT				
Type of Cooling Water System	-	Closed Cycle				
Water Allocation(\$)/Contracted	TMC	0.41				
Actual water Drawal (sweet water)	KL	10659712.00	11155099.00	7749540.00	9514756.00	9242551.00
Rate of Water Charges	Rs /KL	13.01	13.66	14.34	15.06	15.81
Actual water Drawal (sea water)*	KL		84218384.00	80527420.00	83180957.00	90931407.00
Rate of Water Charges (sea water)	Rs /KL		0.05	0.05	0.05	0.05
Special charges as per agreement ^^	Rs Lakh		105.66	163.89	100.45	80.37
Total Water Charges Paid for Simhadri-I & II Combined	Rs. Lakhs	1386.83	1629.44	1369.90	1562.60	1587.09
Total water Charges Paid for Simhadri-I	Rs. Lakhs	724.09	813.68	688.47	768.31	840.39
Total water Charges Paid for Simhadri-II	Rs. Lakhs	662.74	815.77	681.43	794.29	746.70

*Contracted quantity for Simhadri-I & II Combined, *Port Officer, Kakinada raised a demand for payment of sea water charges w.e.f. FY 2009-10 onwards. NTPC has taken up with Govt. of Andhra Pradesh for waiver of sea water charges upto FY 2014-15. However, expenditure for FY 2015-16 and FY 2016-17 was accounted in FY 2016-17 and thereafter the same was accounted every year. Demand raised by Port was based on design capacity of the Station whereas the expenditure is booked based on actual drawl. The difference between the amount demanded and the amount accounted has been kept as contingent liability. ^^ Dead Storage pumping charges: Sweet water is being supplied from Yeleru reservoir through canal by gravity flow. Due deficit rainfall in Yeleru reservoir catchment area, level was below gravity level flow. Pumping power charges were paid additional to normal water charges.*

62. The Petitioner had been allowed water charges as claimed in Petition No. 293/GT/2020 (w.r.t. Simhadri STPS, Stage-II in Petition No 293/GT/2020). The claim of the Petitioner in the present petition, for this generating station is in line with the claim in Petition No. 293/GT/2020 which was allowed. Accordingly, the audited actual water charges claimed by the Petitioner for this generating station, is allowed on prudence check:

(Rs. in lakh)



2014-15	2015-16	2016-17	2017-18	2018-19
724.09	813.68	688.47	768.31	840.39

Capital Spares

63. The second proviso to Regulation 29(2) of the 2014 Tariff Regulations provides as follows:

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

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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.”

64. As per Regulation 29(2) of the 2014 Tariff Regulations, capital spares are admissible separately. The Petitioner has claimed total capital spares for Rs. 1903.84 lakh during the period 2014-19 (i.e., Rs. 180.91 lakh in 2014-15, Rs. 361.57 lakh in 2015-16, Rs. 347.96 lakh in 2016-17, Rs. 464.48 lakh in 2017-18 and Rs. 548.93 lakh in 2018-19). The Petitioner has submitted that in order to meet the customers demand and to maintain high machine availability at all times by the generating station, the units/equipment's are taken under overhaul/maintenance and inspected regularly for wear and tear. It has stated that during such works, spares parts of equipment's which had been damaged/ unserviceable are replaced/consumed so that the machines continue to perform at expected efficiency, on a sustained basis. Therefore, the Petitioner has prayed that capital spares replaced/consumed by the generating station during the 2014-19 tariff period may be allowed.

65. The Petitioner vide affidavit dated 28.6.2021 has submitted Audited Form-17 in support of the capital spares consumed. The details of the capital spares submitted by the Petitioner, in Form 9Bi, is as under:

(Rs. in lakh)



Year	Capital Spares		
	Part of capital cost	Not part of capital cost	Total Consumed
	(A)	(B)	(A+B)
2014-15	21.54	159.37	180.91
2015-16	13.07	348.50	361.57
2016-17	56.30	291.65	347.96
2017-18	269.33	195.14	464.48
2018-19	195.26	353.66	548.93

66. We have examined the list of the capital spares consumed by the Petitioner. It is evident from the audited statement and Form 9Bi of the respective years, that capital spares claimed comprise of two categories i.e. (i) spares which form part of the capital cost and (ii) spares which do not form part of the capital cost of the project. In respect of capital spares which form part of the capital cost of the project, the Petitioner has been recovering tariff since their procurement and, therefore, the same cannot be allowed as part of additional O&M expenses. Accordingly, only those capital spares, which do not form part of the capital cost of the project, are being considered.

67. 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 the 2014-19 tariff period is summarized as follows:

(Rs. in lakh)

		2014-15	2015-16	2016-17	2017-18	2018-19
A	Capital spares claimed (not part of capital cost)	159.37	348.50	291.65	195.14	353.66
B	Value of capital spares disallowed (Less than Rs 1 lakh on individual basis)	10.31	11.08	5.59	7.87	0.00



		2014-15	2015-16	2016-17	2017-18	2018-19
C	Total value of capital spares considered (A-B-C)	149.06	337.43	286.06	187.27	353.66

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

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Net total value of capital spares considered (A)	149.06	337.43	286.06	187.27	353.66
Salvage value @ 10% (B)	14.91	33.74	28.61	18.73	35.37
Net value of capital spares allowed (C) = (A)-(B)	134.16	303.69	257.46	168.54	318.30

Impact of Goods and Service Tax (GST)

69. The Petitioner has claimed amount of Rs. 177.62 lakh in 2017-18 and Rs. 256.57 lakh in 2018-19 on account of impact of GST. 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 para 49.6 of the SOR to the 2014 Tariff Regulations, which is extracted as follows:

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



70. Further, the escalation rates considered in the O&M expense norms under the 2014 Tariff Regulations is only after accounting for the variations during the past five years of the 2014-19 tariff period, which in our view, takes care of any variation in taxes also. It is pertinent to mention that in case of reduction of taxes or duties; no reimbursement is ordered. In this background, we find no reason to grant additional O&M expenses towards payment of GST.

Impact of wage revision

71. The Petitioner has claimed total amount of Rs. 6836.42 lakh (Rs. 52.00 lakh in 2015-16, Rs. 1687.07 lakh in 2016-17, Rs. 2216.07 lakh in 2017-18 and Rs. 2881.28 lakh in 2018-19) towards the Impact of wage revision of employees of CISF and Kendriya Vidyalaya Staff from 1.1.2016 and employees of the Petitioner posted at the generating station with effect from 1.1.2017. However, it is noticed that the said claim of the Petitioner includes the impact on account of the payment of additional PRP/ ex-gratia to its employee’s consequent upon wage revision. As such, as per consistent methodology adopted by the Commission, 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. Accordingly, the claim of the Petitioner in respect of wage revision impact stands reduced to Rs. 5847.14 lakh, with the following year-wise break-up:

	<i>(Rs. in lakh)</i>				
	2015-16	2016-17	2017-18	2018-19	Total
Wage revision impact claimed excluding PRP/ exgratia	52.00	1687.07	2006.49	2101.57	5847.14

72. The Petitioner vide affidavit dated 28.6.2021 has submitted the following:

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

73. The Petitioner vide its affidavit dated 28.6.2021 has also furnished the comparative table indicating the actual O&M expenses incurred vis-a-vis the normative O&M expenses recovered in tariff, in respect of the generating station (all stages combined) (2000 MW) and for this generating station (1000 MW) for the period 2014-19 as under:

(Rs. in lakh)

S.No.		2014-15	2015-16	2016-17	2017-18	2018-19
1	Actual O&M expenditure for Simhadri STPS excluding water charges (2000 MW)	36536.43	38599.83	39622.77	44667.97	57718.98
2	Total Normative O&M recovery excluding water charges in tariff for Simhadri STPS (2000 MW)	30400	32319	34352	36518	38817
3	Under-recovery of O&M Charges in Simhadri STPS excluding water charges (2000 MW)	(-) 6136.43	(-) 6280.83	(-) 5270.77	(-) 8149.97	(-) 18901.9

74. The Petitioner has also submitted the actual O&M expenses (prorated) to MW ratio, in comparison to the normative O&M expenses allowed, as under:

(Rs. in lakh)

S.No.		2014-15	2015-16	2016-17	2017-18	2018-19
1	Actual O&M expenditure for Simhadri STPS Stage- I excluding water charges (Pro rata in the ratio of installed capacity)	18268.21	19299.91	19811.39	22333.98	28859.49
2	Normative O&M of Simhadri Stage -I allowed by Hon'ble Commission vide its order dated 27.6.2016 in	16000	17010	18080	19220	20430



S.No.		2014-15	2015-16	2016-17	2017-18	2018-19
	petition 270/GT/2014					
3	Difference (Normative - Actual) / Under Recovery for Simhadri STPS Stage- I (2 - 1)	(-) 2268.21	(-) 2289.91	(-) 1731.39	(-) 3113.98	(-) 8429.49

75. The Petitioner has also submitted that the O&M expense norms under the 2014 Tariff Regulations, were decided based on the actual O&M expenses incurred for the period from 2008-09 to 2012-13. It has however submitted that the 3rd Pay Revision Committee for CPSU's was not in existence and/ or incorporated while the 2014 Tariff Regulations were being framed by the Commission. The Petitioner has further submitted that the implementation of recommendations of 7th Pay Commission and Office Memorandum of Department of Public Enterprises (DPE) were communicated in 2016/2017, whereas the 2014 Tariff Regulations were notified much prior to 3.8.2017. Accordingly, the Petitioner has submitted that the impact thereof, ought to be made pass through in terms of Regulation 54 and 55 of the 2014 Tariff Regulations.

76. We have examined the matter. The Commission, while specifying the O&M expense norms under the 2014 Tariff Regulations, had considered the actual O&M expense data for the period from 2008-09 to 2012-13. However, considering the submissions of the stakeholders, the Commission in the Statement of Objects and Reasons (SOR) to the 2014 Tariff Regulations, had observed that the increase in employees cost due to impact of pay revision impact will be examined on a case to case basis balancing the interest of generating stations and the consumers. The relevant extract of SOR is extracted as follows:

"29.26 Some of the generating stations have suggested that the impact of pay revision should be allowed on the basis of actual share of pay revision instead of normative 40% and one generating company suggested that the same should be considered as 60%. In the draft Regulations, the Commission had provided for a normative percentage of employee cost to total O&M expenses for



*different type of generating stations with an intention to provide a ceiling limit so that it does not lead to any exorbitant increase in the O&M expenses resulting in spike in tariff. The Commission would however, like to review the same considering the macroeconomics involved as these norms are also applicable for private generating stations. In order to ensure that such increase in employee expenses on account of pay revision in case of central generating stations and private generating stations are considered appropriately, **the Commission is of the view that it shall be examined on case to case basis, balancing the interest of generating stations and consumers.***

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*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.***

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

However, in this respect, the following facts need consideration:

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

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



79. The Petitioner has furnished the detailed break-up of the actual O&M expenses incurred during the 2014-19 tariff period for combined stages i.e. Stage-I and II of the generating station (2000 MW). It is noticed that the total O&M expenses incurred is more than the normative O&M expenses recovered during each year of the period 2014-19. The impact of the wage revision could not be factored by the Commission while framing the O&M expenses norms under the 2014-19 Tariff Regulations, since the pay/ wage revision came into effect from 1.1.2016 (CISF & KV employees) and 1.1.2017 (employees of the Petitioner) respectively. As such, in terms of relevant provisions of SOR of the 2014 Tariff Regulations, the approach followed for arriving at the allowable impact of pay revision is given in the subsequent paragraphs.

80. First step is to compare the normative O&M expenses with the actual O&M expenses for the period from 2015-16 to 2018-19, commensurate to the period for which wage revision impact has been claimed. For like to like comparison, the components of O&M expenses like productivity linked incentive, water charges, filing fees, ex-gratia, loss of provisions, prior period expenses, community development, store expenses, ash utilization expenses, RLDC fee & charges and others (without breakup/ details) which were not considered while framing the O&M expenses norms for the 2014-19 tariff period, have been excluded from the yearly actual O&M expenses of the generating station as well as corporate centre. Having brought the normative O&M expenses and actual O&M expenses at same level, if normative O&M expenses for the period 2015-19 are higher than actual O&M expenses (normalized) for the same period, the impact of wage revision (excluding PRP and ex-gratia) as claimed for the period is not admissible/ allowed as the impact of pay revision gets accommodated within the normative O&M expenses. However, if the normative O&M expenses for the period



2015-19 are less than the actual O&M expenses (normalized) for the same period, the wage revision impact (excluding PRP and ex-gratia) to the extent of under recovery or wage revision impact (excluding PRP and ex-gratia), whichever is lower, is required to be allowed as wage revision impact for the period 2015-19.

81. In this regard, the details as furnished by the Petitioner for actual O&M expenses for Stage-I and II of the generating station (2000 MW) and wage revision impact (excluding PRP and ex-gratia) for Stage-I (1000 MW) of the generating station are as follows:

(Rs. in lakh)

	2015-16	2016-17	2017-18	2018-19	Total for 2015-19
Actual O&M expenditure (normalized) for the generating station (Combined for stage-I and II) (A)	33377.38	36180.21	38894.06	43446.64	151898.29
Actual O&M expenditure (normalized) for Stage-I of the generating station prorated based on capacity (B)	16688.69	18090.11	19447.03	21723.32	75949.14
Normative O&M Expenses for Stage-I of the generating station (C)	17010.00	18080.00	19220.00	20430.00	74740.00
Under-recovery (D) = (C)-(B)	321.31	(-) 10.11	(-) 227.03	(-) 1293.32	(-) 1209.14
Wage revision impact claimed excluding PRP/ex-gratia (E)	52.00	1687.07	2006.49	2101.57	5847.14

82. As stated, for like to like comparison of the actual O&M expenses and normative O&M expenses, has been excluded from the actual O&M expenses to arrive at the actual O&M expenses (normalized) for the Stage-I of the generating station (1000 MW). Accordingly, the following table portrays the comparison of normative O&M expenses versus the actual O&M expenses (normalized) along with wage revision impact claimed by the Petitioner for the generating station (Stage-I 1000 MW) for period 2015-19 (on



combined basis) commensurate with the wage revision claim being spread over these four years:

(Rs. in lakh)

Sl. No		2015-16	2016-17	2017-18	2018-19	Total for 2015-19
1	Actual O&M expenditure (normalized) for Simhadri (Combined for stage-I and II)	33377.38	36180.21	38894.06	43446.64	151898.29
2	Actual O&M expenditure (normalized) for Simhadri - Stage I prorated based on capacity (b)	16688.69	18090.11	19447.03	21723.32	75949.14
3	Normative O&M Expenses for Simhadri - Stage I (c)	17010.00	18080.00	19220.00	20430.00	74740.00
4	Wage revision impact claimed excluding PRP/ex-gratia	52.00	1687.07	2006.49	2101.57	5847.14
5	Under-recovery (c)-(b)	321.31	(-) 10.11	(-) 227.03	(-) 1293.32	(-) 1209.14

83. It is observed that for the period 2015-16 to 2018-19, the normative O&M expenses is lesser than the actual O&M expenses (normalized) incurred and under-recovery is to the tune of Rs.1209.14 lakh, which also includes under-recovery due to wage revision impact. As such, in terms of methodology discussed above, the wage revision impact (excluding PRP/ incentive) of Rs.1209.14 lakh is allowed to be recovered for the generating station. Accordingly, we, in exercise of the Power 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 amounting to Rs.1209.14 lakh, as additional O&M expenses for the period 2015-19. The arrear payments on account of the wage revision impact is payable by the beneficiaries in twelve equal monthly instalments starting from the next bill after issue of this order. Keeping in view the consumer interest, we as a special case, direct that no interest shall be charged by the Petitioner on the arrear payments on the wage revision impact allowed in this order. This arrangement, in our view, will balance the interest of both the Petitioner and the Respondents. Also, considering the fact that the impact of wage



revision is being allowed in exercise of the power to relax, the expenses allowed are not made part of the O&M expenses and the consequent annual fixed charges determined in this order.

Fly Ash Transportation expenses

84. The Petitioner has claimed an amount of Rs. 2453.69 lakh on account of Ash Transportation expenses in 2018-19 as additional O&M expenses. The Petitioner has submitted that the Ministry of Environment, Forest & Climate Change (MOEF&CC) notification dated 25.1.2016, under the statutory provisions of Environment (Protection) Act 1986, provides for transportation cost of Fly ash generated at power stations to be borne by such generating companies. The Petitioner has 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. The Petitioner vide its affidavit dated 28.6.2021 has submitted the following details:

- (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.*

85. The Petitioner has submitted the details along with the computation of the claimed cost towards Ash Transportation. The Petitioner has also submitted that a Memorandum of Understanding (MoU) was entered into between NTPC and National Highways Authority of India (NHAI) on 29.6.2018 and 19.2.2019 for bearing the cost of transportation of ash from Simhadri generating station, for utilization in the construction



of roads in Vishakhapatnam, in compliance to the MOEF&CC notification dated 3.11.2009, as amended on 25.1.2016. The Petitioner has also enclosed copy of the prevailing Schedule of Rates (SoR) of the State of Andhra 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 were 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. It has claimed the same amount as additional O&M expenses on account of transportation of fly ash in terms of the MOEF&CC notification dated 25.1.2016. The Petitioner has stated 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)

	2018-19
Revenue from Sale of Fly Ash/Fly Ash Products (A)	173.68
Expenditure on Ash Transportation (B)	5081.07
Ash Transportation expense charged to P&L (C)=(B-A)	4907.39
Net additional O & M expenses claimed for Stage-II (C/2)	2453.69

86. The Petitioner has further 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. However, it is observed that the Petitioner vide affidavit dated 27.7.2022, has revised its claim for fly ash transportation charges to Rs. 2540.54 lakh in 2018-19, and has submitted the revised auditor certificate in support of the same. The Petitioner in the said affidavit has submitted the following information:



SI NO	Quantity of ash (CuM)	Distance from NTPC (Km.)	Chainage (km)		Rate per Km /CuM	APSOR unit rate (Rs. /CuM)	Total Amount without GST (Rs. in lakh)	Total amount with GST @12% (Rs.in lakh)
1	118528	61.15	679+730	680+790	10.95	669.76	793.85	889.11
2	71005	62.75	678+180	679+040	10.92	685.28	486.58	544.97
3	42106	70.97	669+930	670+780	10.78	765.01	322.12	360.77
4	107405	72.56	668+180	669+050	10.76	780.43	838.22	938.81
5	98965	87.13	653+370	654+300	10.58	921.76	912.22	1021.69
6	64513	91.34	649+200	650+030	10.54	962.6	621.00	695.52
7	52055	103.54	636+730	637+650	10.44	1080.94	562.68	630.20
	554576							5081.07

87. 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 Andhra Pradesh along with details, including Auditor certified accounts.

88. The documents furnished by the Petitioner has been examined and on prudence check, the reimbursement of Rs. 2540.54 lakh (pro rata based on capacity) 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 instalments. Considering the fact that reimbursement of 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.



89. Based on the above discussions, the total annualized O&M expenses allowed in respect of the generating station is summarized below:

		(Rs. in lakh)				
		2014-15	2015-16	2016-17	2017-18	2018-19
Installed Capacity (MW) (A)		1000.00	1000.00	1000.00	1000.00	1000.00
O&M Expenses under Reg.29(1) in Rs lakh / MW (B)		16.00	17.01	18.08	19.22	20.43
Total O&M Expenses (in Rs lakh) (C) = (A)*(B)	Claimed	16000.00	17010.00	18080.00	19220.00	20430.00
	Allowed	16000.00	17010.00	18080.00	19220.00	20430.00
Water Charges (in Rs lakh) (D)	Claimed	724.09	813.68	688.47	768.31	840.39
	Allowed	724.09	813.68	688.47	768.31	840.39
Capital Spares Consumed (in Rs lakh) (E)	Claimed	180.91	361.57	347.95	464.47	548.92
	Allowed	134.16	303.69	257.46	168.54	318.30
Total O&M Expenses as allowed (including Water Charges and Capital Spares Consumed) (F) = (C+D+E)	Claimed	16905.00	18185.25	19116.42	20452.78	21819.31
	Allowed	16858.24	18127.36	19025.93	20156.85	21588.69
Additional O&M Expenditure						
Impact of GST (in Rs lakh) (H)	Claimed	0.00	0.00	0.00	177.62	256.57
	Allowed	0.00	0.00	0.00	0.00	0.00
Ash Transportation Expenditure (I)	Claimed	0.00	0.00	0.00	0.00	2540.54
	Allowed*	0.00	0.00	0.00	0.00	2540.54
Sub Total Additional O&M Expenses (J) = (H+I)	Claimed	0.00	0.00	0.00	177.62	2710.62
	Allowed	0.00	0.00	0.00	0.00	2540.54
Total O&M Expenses in Rs lakh (K) = (F+J)	Claimed	16905.00	18185.25	19116.42	20630.40	24529.57
	Allowed	16858.24	18127.36	19025.93	20156.85	24129.23
Impact of Wage Revision (in Rs lakh) (G)	Claimed	0.00	52.00	1687.07	2216.07	2881.28
	Allowed*			1209.14		

*To be recovered in six instalments.



Compensation Allowance

90. 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

91. The Petitioner has claimed total compensation allowance of Rs. 1300.00 lakh in terms of the above regulations and is also in line with those allowed vide order dated 27.6.2016 in Petition No. 270/GT/2014. Accordingly, the claim of the Petitioner for Rs. 1300.00 lakh as compensation allowance is allowed under Regulation 17(1) of the 2014 Tariff Regulations.

Operational Norms

Normative Annual Plant Availability Factor

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

Auxiliary Energy Consumption

93. The Petitioner has submitted Auxiliary Energy Consumption (AEC) of 5.25% as per Regulation 36(E)(a)(ii) of the 2014 Tariff Regulations. In justification of the same, the Petitioner has submitted that CEA in its “Recommendations on Operation Norms for Thermal Power Stations for tariff period 2014-19” has recommended the reduction of



AEC by 0.75% for 500 MW and higher size units, installed after 1.4.2009. Accordingly, the Petitioner has submitted that the AEC norms for the generating station got reduced to 5.25% from 6.0%. It has also stated that as per the recommendations, the actual average AEC indicated by CEA for the generating station for the period from 2011-12 to 2012-13 is 5.5% and the project could never achieve AEC of 5.25% as per norms. The actual AEC of the project, as furnished by the Petitioner, is as under:

2014-15	2015-16	2016-17	2017-18	2018-19
5.46	5.53	5.43	5.99	5.93

94. The Petitioner has submitted that as the plant is located in the coastal region, sea water, instead of river water, is used for condenser cooling, auxiliary equipment cooling and ash handling system. It has also submitted that as the specific gravity of sea water (1.025) is higher than that of river water (1.00), the Cycle of Concentration (COC) is to be maintained below 1.5 instead of 3.0 as required in sweet water and therefore, more blow down is required with sea water resulting in more pumping power than that required for sweet water. The Petitioner has further submitted that sea water has resulted in higher AEC and therefore, the Commission may relax the AEC norms for the generating station from 5.25 % to 5.38%.

95. The submissions have been considered. As per Detailed Operating Procedure (DoP) of IEGC dated 5.5.2017, on compensation mechanism for ISGS station, separate compensation, on account of degradation of SHR and increase in AEC due to part loading, is payable by the beneficiaries. As per data furnished by the Petitioner, it is observed that AEC has increased abruptly only during the years 2017-18 and 2018-19, which could also be due to lower loading factors in that period. Hence, the Petitioner's claim for additional AEC, above the normative AEC of 5.25%, cannot be accepted on the ground of utilisation of sea water. Moreover, the detailed calculation of AEC, after



compensation, has not been submitted by the Petitioner. Therefore, the prayer of the Petitioner to relax the provisions of AEC, in exercise of the power under Regulation 54 power to relax of the 2014 Tariff Regulations, is rejected. Accordingly, the AEC of 5.25% as approved by order dated 27.6.2016 in Petition No. 270/GT/2014, which is in accordance with the Regulation 36(E)(a) of the 2014 Tariff Regulations, is allowed.

Station Heat Rate

96. The Gross Station Heat Rate of 2375.00 Kcal/ kWh, in terms of Regulation 36 (C) of the 2014 Tariff Regulations is approved.

Specific Oil Consumption

97. The specific oil consumption of 0.5 ml/ kWh, in terms of Regulation 36 (C) of the 2014 Tariff Regulations is approved.

Interest on Working Capital

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

“28. Interest on Working Capital:

(1) The working capital shall cover:

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

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

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

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

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



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

(vi) Operation and maintenance expenses for one month.

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

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

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

Fuel Cost and Energy Charges in Working Capital

99. Regulation 28(2) of the 2014 Tariff Regulations provides that the computation of cost of fuel as a part of Interest on Working Capital (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. Regulation 30 (6) of the 2014 Tariff Regulations provides as follows:

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

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

(a) For coal based and lignite fired stations

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

(b) xxxxx

Where,

AUX = Normative auxiliary energy consumption in percentage.

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

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

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



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

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

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

LC = Normative limestone consumption in kg per kWh.

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

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

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

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

100. 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.

101. Regulation 30 (7) of the 2014 Tariff Regulations provides as follows:

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

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

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

102. The regulations for computation of energy charges was challenged by the Petitioner and other generating companies on the issue of 'as received' GCV specified in Regulation 30 of the 2014 Tariff Regulations, 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 follows:

“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.”

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

104. In Petition No. 270/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 GCV of coal on ‘as billed’ and on ‘as received’ basis for the preceding 3 months i.e. for January 2014, February 2014 and March 2014 that were required for determination of Interest on Working Capital (IWC). Therefore, the Commission vide order dated 27.6.2016 in Petition No.270/GT/2014 had considered GCV of coal on as ‘billed basis’



and provisionally allowed adjustment for total moisture while allowing the cost of coal towards generation & stock and two months' energy charges in the working capital.

105. The Petitioner, in this petition, has furnished the average GCV of coal as 3326.03 Kcal/kg on “as received” basis for the period from October, 2016 to March 2019. As per the Commission’s 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 period 2014-19. The Petitioner has further submitted that CEA vide its 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 based on (i) ‘as received’ GCV of coal for 30 months from October 2016 to March 2019 with adjustment of 120 kCal/kg towards storage loss, (ii) landed price of coal for preceding three months i.e. January 2014 to March 2014 and (iii) GCV and landed price of Secondary fuel oil procured for the preceding three months i.e. January 2014 to March 2014 for the generating station, the Petitioner has claimed the cost of fuel component in the working capital as follows:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal towards stock (30 days)	17726.67	17726.67	17726.67	18153.82	18153.82
Cost of Coal towards Generation (30 days)	17726.67	17726.67	17726.67	18153.82	18153.82
Cost of Secondary fuel oil 2 months	327.50	328.39	327.50	335.39	335.39



106. The Petitioner has claimed Energy Charge Rate (ECR) ex-bus of 315.919 paise/kWh for the generating station based on GCV and price of fuel (coal and secondary fuel oil) as indicated above.

107. In response to the clarification sought from the Petitioner on the details of GCV on 'as received' basis for the months of January, 2014 to March, 2014, which was uploaded in the website of the Petitioner and shared with the beneficiaries, the Petitioner vide affidavit dated 28.6.2021, has submitted that though the computation of energy charges moved from 'as fired' basis to 'as received' basis, with effect from 1.4.2014, in terms of Regulation 30(6) of the 2014 Tariff Regulations, however, for calculation of IWC under Regulation 28(2) of the 2014 Tariff Regulations, the GCV shall be as per 'actuals' for the three months preceding the first month for which tariff is to be determined. It has further submitted that for the period 2014-19, Regulation 28(2) of the 2014 Tariff Regulations unequivocally provide that the actual cost and GCV of the preceding three months shall be considered and for these preceding three months (January 2014 to March 2014), by virtue of it falling under the 2009 Tariff Regulations, shall be computed on the basis of 'as fired' GCV. Referring to the judgment of the Hon'ble Supreme Court in PTC India v CERC (2010) 4 SCC 603 and the judgment of APTEL in NEEPCO v TERC (2006) APTEL 148, the Petitioner has submitted that the Commission is bound by the provisions of the Tariff Regulations and that purposive interpretation ought to be given to the 2014 Tariff Regulations and interest on working capital ought to be computed in terms of Regulation 28 (2) of the 2014 Tariff Regulations, 2014 on actual GCV i.e., 'as fired' GCV. The Petitioner, without prejudice to the above submissions, has furnished the details of GCV on 'as received' basis for the months of January 2014 to March 2014, in compliance with the directions of the Commission, as follows:



Sl.No.	Month	Wt. Avg. GCV of coal received (EM basis) (kcal/kg)	Total moisture (TM) (in %)	Equilibrated moisture (EM) (in %)	Wt. Avg. GCV of coal received (TM basis) (kcal/kg)
		(A)	(B)	(C)	(D)= (A)*(1-B%)/(1-C%)
1	January 2014	3992	16.15	6.90	3595
2	February 2014	4189	17.34	6.91	3719
3	March 2014	4267	16.08	6.62	3835
	Average				3716

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 above, it has submitted that GCV of fuel is to be considered 'on actuals' for January, 2014 to March 2014 and as such, GCV is required to be considered on an 'as fired' basis. In other words, the Petitioner has contended that since the period of January 2014 to March 2014 falls in the period 2009-14 for measurement of GCV of coal, Regulation 18(2) read with Regulation 21(6) of the 2009 Tariff Regulations was applicable which mandates that generating company shall measure GCV on 'as fired' basis (and not on 'as received' basis). This submission of the Petitioner is also not acceptable in view of provisions of Regulation 21(6) of the 2009 Tariff Regulations, that was amended on 31.12.2012, by addition of the following provisos.

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

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

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

Provided further that copies of the bills and details of parameters of GCV and price of fuel i.e. domestic coal, imported coal, e-auction coal, lignite, natural gas, RLNG, liquid fuel etc., details of blending ratio of the imported coal with domestic coal, proportion of



e-auction coal shall also be displayed on the website of the generating company. The details should be available on its website on monthly basis for a period of three months."

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

110. As per the SOR to the 2014 Tariff Regulations, we note that the main consideration of the Commission while moving from 'as fired' GCV to 'as received' GCV for the purpose of energy charges under Regulation 30(6) of the 2014 Tariff Regulations for the 2014-19 tariff period was to ensure that GCV losses which might occur within the generating station after receipt of coal are not passed on to the beneficiaries on account of improper handling and storage of coal by the generating companies. As regards the allowable (normative) storage loss within the generating station, CEA had observed that there is negligible difference between 'as received' GCV and 'as fired' GCV. As such, for the purpose of calculating energy charges, the Commission moved from 'as fired' GCV to 'as received' GCV under Regulation 30(6) of the 2014 Tariff Regulations without allowing any margin between the two measurements of GCV. Thus, 'as received' GCV was made applicable for the purpose of calculating working capital requirements based on the actual GCV of coal for the preceding three months of the first month for which tariff is to be determined in terms of Regulation 28(2) of 2014 Tariff Regulations. In case the submission of the Petitioner that 'as fired' is to be considered 'at actuals' for the preceding three months for purpose of IWC, the same would mean allowing (and passing through) all storage losses which would have occurred during the preceding three months (January 2014 to March 2014) for the 2014-19 tariff period.



This, according to us, defeats the very purpose of moving from 'as fired' GCV to 'as received' GCV in the 2014 Tariff Regulations. In this background and keeping in view that in terms of amended Regulation 21(6) of the 2009 Tariff Regulations, the Petitioner is required to share details of the weighted average GCV of the fuel on 'as received' basis, we consider the fuel component and energy charges 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.

111. The Petitioner, for the purpose of computing fuel cost, has claimed the GCV of 3326.033 kcal/kg, which represents the simple average of GCV for the period October, 2016 to March, 2019. However, the weighted average GCV for three months viz. January, 2014 to March, 2014, 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 above, works out to 3716.33 kcal/kg.

112. Accordingly, the cost for fuel components in working capital has been computed by considering the fuel details (price and GCV) as per Form-15 of the petition, except for 'as received' GCV of coal, which is considered as 3716.33 kCal/kg, as discussed above. All other operational norms such as Station Heat Rate Auxiliary Energy Consumption and Secondary Fuel Cost have been considered as per the 2014 Tariff Regulations, for calculation of fuel components in working capital.

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

(Rs. in lakh)



	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal for stock (30 days generation corresponding to NAPAF)	15268.93	15268.93	15268.93	15636.86	15636.86
Cost of Coal for generation (30 days corresponding to NAPAF)	15268.93	15268.93	15268.93	15636.86	15636.86
Cost of Secondary fuel oil (2 months generation corresponding to NAPAF)	328.75	329.65	328.75	336.67	336.67

114. The cost of coal towards stock and generation allowed for the period 2014-19 is more than the cost claimed by the Petitioner for the following reasons:

- a) The Petitioner has considered average GCV of coal for 30 months as 3326.03 kCal/kg (including adjustment of GCV of 120 kCal/kg) and weighted average price of coal as 4162.71 Rs/MT while the Commission has considered the same as weighted average GCV 3716.33 kCal/kg and 4006.32 Rs/MT respectively. Storage loss of 120 kCal/kg as considered by the Petitioner has not been considered as there is no such provision in 2014 Tariff Regulations.
- b) The Petitioner has considered the 'Normative Transit & Handling losses of 0.80% within the limit as prescribed in Regulation 30(8) of the 2014 Tariff Regulations.

Energy Charge Rate (ECR) for calculating working capital

115. 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"



116. The Petitioner has claimed Energy Charge Rate (ECR) ex-bus of 315.919 Paise/kWh for the generating station, based on the landed cost of coal, during preceding three months, GCV of coal [on 'as received' basis for average of 30 months] along with the storage loss of 120 kCal/kg} & GCV and price of Oil procured and burnt for the preceding three months of the period 2014-19, for the generating station. Since these claims of the Petitioner has not be allowed in the paras, as stated above, the allowable ECR, based on the operational norms as specified under the 2014 Tariff Regulations and on weighted average of 'as received' GCV is worked out as follows:

	Unit	2014-19
Capacity	MW	1000.00
Gross Station Heat Rate	kCal/kWh	2375.00
Aux. Energy Consumption	%	5.25%
Weighted average GCV of oil	kCal/lit	9793.00
Weighted average Average GCV of Coal for Jan to March 2014	kCal/kg	3716.33
Weighted average price of oil	Rs. /KL	54258.31
Weighted average price of Coal	Rs. /MT	4006.32
Rate of Energy Charge ex-bus	Rs. /kWh	2.7250

117. The Energy Charges for two months for computation of working capital based on ECR of Rs. 2.7250/kWh, has been worked out as under:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
187727.51	188241.83	187727.51	192251.07	192251.07

Working Capital for Maintenance Spares

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

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
3381.00	3647.45	4160.70	4569.29	5482.17



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

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
3371.65	3625.47	3805.19	4031.37	4317.74

Working Capital for Receivables

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

<i>(Rs.in lakh)</i>					
	2014-15	2015-16	2016-17	2017-18	2018-19
Variable Charges - for two months (A)	31287.92	31373.64	31287.92	32041.84	32041.84
Fixed Charges – for two months (B)	11668.71	10643.53	10782.94	11063.32	11347.58
Total (C) = (A+B)	42956.63	42017.17	42070.86	43105.16	43389.42

Working Capital for O & M Expenses (1 month)

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

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
1408.75	1519.77	1733.62	1903.87	2284.24

122. Regulation 28(a)(vi) of the 2014 Tariff Regulations provides for O&M expenses for one month for coal-based generating station as a part of working capital. The one-month O&M expenses, as allowed for is as under:

<i>(Rs. in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
1404.85	1510.61	1585.49	1679.74	1799.06

123. The difference between the O&M expenses for 1 month and maintenance spares claimed and the O&M expenses for 1 month and cost of maintenance spares allowed,



as above is on account of the fact that, while the Petitioner's claim is based on the O&M expenses inclusive of the expenses on impact of GST and wage revision, these components have not been included in our calculations towards working capital computations allowed.

Rate of interest on working capital

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

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Working capital for Coal for stock - 30 days of generation corresponding to NAPAF) (A)	15268.93	15268.93	15268.93	15636.86	15636.86
Working capital for Coal for generation - 30 days corresponding to NAPAF) (B)	15268.93	15268.93	15268.93	15636.86	15636.86
Working capital for Secondary Fuel Oil - 2 months generation corresponding to NAPAF) (C)	328.75	329.65	328.75	336.67	336.67
Working Capital for O&M expenses - 1 month (D)	1404.85	1510.61	1585.49	1679.74	1799.06
Working Capital for Maintenance Spares - 20% of O&M (E)	3371.65	3625.47	3805.19	4031.37	4317.74
Working Capital for Receivables - 2 months (F)	42956.63	42017.17	42070.86	43105.16	43389.42
Total Working Capital (G) = (A+B+C+D+E+F)	78599.75	78020.77	78328.16	80426.66	81116.61
Rate of Interest (H)	13.50%	13.50%	13.50%	13.50%	13.50%
Total Interest on Working capital (I) = (GxH)	10610.97	10532.80	10574.30	10857.60	10950.74

Annual Fixed Charges

125. Based on the above discussion, the annual fixed charges approved for the generating station for the period 2014-19 is summarized as follows:

	<i>(Rs. in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	17839.43	10704.12	10815.00	11128.77	11394.34
Interest on Loan	3844.06	3445.36	3141.60	2881.16	2582.62
Return on Equity	20859.58	21051.55	21140.83	21355.53	21569.09



	2014-15	2015-16	2016-17	2017-18	2018-19
Interest on Working Capital	10610.97	10532.80	10574.30	10857.60	10950.74
O&M Expenses	16858.24	18127.36	19025.93	20156.85	21588.69
Compensation Allowance	200.00	200.00	200.00	200.00	500.00
Total	70212.27	64061.19	64897.66	66579.92	68585.48

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

Summary

126. The total expenses in respect of the generating station allowed for the period 2014-19, after truing-up exercise, is summarized below:

	2014-15	2015-16	2016-17	2017-18	2018-19
Annual Fixed Charges	70212.27	64061.19	64897.66	66579.92	68585.48
Ash Transportation Expenditure	0.00	0.00	0.00	0.00	2540.54
Impact of wage revision	1209.14				

(Rs. in lakh)

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

128. Annexure-I enclosed herein form part of the order.

129. Petition No. 292/GT/2020 is disposed of in terms of the above.

Sd/-
(Pravas Kumar Singh)
Member

Sd/-
(Arun Goyal)
Member

Sd/-
(I.S. Jha)
Member



Annexure-I**Depreciation for the period 2014-15***(Rs. in lakh)*

Sl.No.	Name of the Assets	Gross Block as on 31.3.2014	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation amount For 2014-15 onwards
1	Land under full ownership	8035.61		
2	Land under lease	121.97	3.34%	4.07
3	Roads, bridges, culverts etc	3472.61	3.34%	115.99
4	Buildings	35405.51	3.34%	1182.54
5	Temporary erections	91.69	100%	91.69
6	Water supply, drainage & sewerage system	8562.27	5.28%	452.09
7	Plant & Machinery	310887.29	5.28%	16414.85
8	MGR track & signaling system	633.36	5.28%	33.44
9	Railway siding	9121.38	5.28%	481.61
10	Earth dam reservoir	8746.23	5.28%	461.80
11	Construction equipment	661.71	5.28%	34.94
12	Office furniture & furnishing	1514.24	6.33%	95.85
13	Office equipment	354.32	6.33%	22.43
14	Hospital equipment's	20.26	5.28%	1.07
15	IT equipment's	754.07	15.00%	113.11
16	Self-propelled vehicles (Vehicles including speed boats)	13.28	9.50%	1.26
17	Electrical installations	1737.19	6.33%	109.96
18	Communication equipment's	439.03	6.33%	27.79
19	Assets not owned by the company			0.00
a	Roads, bridges, culverts etc.,	487.46	3.34%	16.28
b	Water supply, drainage & sewerage system	64.60	5.28%	3.41
c	Railway siding	5015.77	5.28%	264.83
d	Electrical installations	129.70	6.33%	8.21
e	Unserviceable Assets			
	TOTAL	396269.56		19937.23
	Weighted Average Rate of Depreciation			5.0312

