

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 288/GT/2014

Coram:

Shri A.S. Bakshi, Member

Dr. M. K. Iyer, Member

Date of Order : 12.04.2017

In the matter of

Approval of tariff of Badarpur Thermal Power Station, Stage-I (705 MW) for the period from 1.4.2014 to 31.3.2019

And in the matter of

NTPC Ltd
NTPC Bhawan,
Core-7, SCOPE Complex,
7, Institutional Area, Lodhi Road,
New Delhi-110003)

.....Petitioner

Vs

1. Tata Power Delhi Distribution Ltd.,
Grid Sub-station Hudson Road,
Kingsway Camp, Delhi-110009
2. BSES-Rajdhani Power Ltd.
BSES Bhawan, Nehru Place,
New Delhi - 110019
3. BSES-Yamuna Power Ltd.,
Shakti Kiran Building, Karkardooma,
Delhi- 110072
4. New Delhi Municipal Council,
Palika Kendra, Sansad Marg,
New Delhi-110001
5. Military Engineering Services,
Delhi Cantonment,
New Delhi -110010

...Respondents

Parties present:

For Petitioner: Shri Ajay Dua, NTPC
Shri Nishant Gupta, NTPC
Shri E. P. Rao, NTPC
Shri P. Chaturvedi, NTPC



Shri Bhupinder Kumar, NTPC
Shri T. Vinodh Kumar, NTPC
Shri Rajeev Choudhary, NTPC

For Respondents: Shri R. B. Sharma, Advocate, BRPL
Shri Abhishek Srivastava, BYPL
Shri Kanishk Khetrapal, BRPL
Shri Nishant Grover, BYPL
Smt Megha Bajpai, BRPL
Shri Sanjay Srivastava, BRPL

ORDER

This petition has been filed by the petitioner, NTPC for approval of tariff of Badarpur Thermal Power Station, Stage-I (705 MW) (hereinafter referred to as “the generating station”) for the period 2014-19 in accordance with the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”).

2. The generating station with a capacity of 705 MW comprises of three units of 95 MW each and two units of 210 MW each. The ownership of the generating station was transferred to the petitioner on 31.5.2006 vide notification dated 31.5.2006 of the MoP, Gol. The present capacity on the dates of commission of the various units of the generating station are as under:

Units	Capacity (MW)	Date of Commissioning
1	95	26.7.1973
2	95	5.8.1974
3	95	29.3.1975
4	210	2.12.1978
5	210	25.12.1981

3. The Commission vide order dated 23.5.2012 in Petition No. 332/2009 approved the tariff of the generating station for the period 2009-14. Subsequently, the Commission vide order dated 16.12.2013 in Petition No. 18/GT/2013 had revised the tariff of the generating station for the period 2009-14, after truing up exercise of the actual additional capital expenditure incurred for the years 2009-10, 2010-11 and 2011-12 and projected additional capital expenditure for the years 2012-13 and 2013-14. Against the order dated 16.12.2013, the petitioner has filed Appeal No. 47 of 2014 before the Appellate Tribunal of Electricity (Tribunal) on various issues, and the Tribunal by its judgment dated 22.3.2016 had dismissed the said appeal.



4. Thereafter, the Commission vide order dated 30.7.2016 in Petition No. 302/GT/2014 had revised the annual fixed charges of the generating station for the period 2009-14 after truing-up of tariff for the period 2009-14 in terms of Regulation 6 (1) of the 2009 Tariff Regulations. Aggrieved by the said order, the petitioner had filed Review Petition No. 48/RP/2016 for revision of Cumulative Depreciation recovered as on 1.4.2009 as ₹27868.00 lakh instead of ₹27946.48 lakh considered in order dated 30.7.2016. The Commission by its order dated 20.10.2016 allowed the prayer of the petitioner and observed as under:-

“5. The matter has been examined. It is observed that the Commission while working out the cumulative depreciation recovered as on 1.4.2009 (as ₹27946.48 lakh) in order dated 30.7.2016 had inadvertently not considered the Commission’s order dated 27.11.2014 (in Review Petition No.3/2011), wherein the cumulative depreciation recovered as on 1.4.2009 was worked out and allowed as ₹27868.00 lakh. The non consideration of this amount (₹27868.00 lakh) in Commission’s order dated 30.7.2016 is an error apparent on the face of the record and the same is required to be corrected. Accordingly, the prayer of the petitioner for review of order dated 30.7.2016 is accepted and in exercise of the power under Regulation 103A of the CERC (Conduct of Business) Regulations, 1999 as amended, the cumulative depreciation recovered as on 1.4.2009 is revised as ₹27868.00 lakh in order dated 30.7.2016. Consequent upon this, the cumulative depreciation recovered as on 31.3.2014 also stands revised as ₹40228.72 lakh in order dated 30.7.2016. It is noticed that the revision of these amounts of cumulative depreciation recovered as on 1.4.2009 and 31.3.2014 respectively would not impact the annual fixed charges allowed for the generating station for the period 2009-14 in order 30.7.2016. However, the impact if any, for the period 2014-19, would be considered at the time of determination of tariff of the generating station for the period 2014-19 in terms of the provisions of the 2014 Tariff Regulations.”

5. Accordingly, the annual fixed charges allowed vide order dated 30.7.2016 is summarized below:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	2395.80	2420.54	2507.21	2635.57	2662.41
Interest on Loan	6.81	0.00	0.00	0.00	0.00
Return on Equity	3947.49	3431.93	3204.99	3032.11	2619.32
Interest on Working Capital	5455.27	5480.60	5525.35	5550.94	5581.38
O & M Expenses	22101.75	22736.25	23384.85	24054.60	24738.45
Cost of secondary fuel oil	1906.79	1906.79	1912.02	1906.79	1906.79



Regulations 2014, while the petition no 302/MP/2015 filed by respondent BRPL regarding termination of PPA is a subject matter not related to the determination of tariff.

Capital Cost as on 1.4.2014

9. Clause 3 of Regulation 9 of the 2014 Tariff Regulations provides as under:

“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 tried 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.”

10. The annual fixed charges claimed by the petitioner are based on opening capital cost of ₹50172.13 lakh as on 1.4.2014 as admitted by the Commission vide order dated 30.7.2016 in Petition No. 302/GT/2014. Accordingly, the closing capital cost of ₹50172.13 lakh as on 31.3.2014 as approved by the Commission in order dated 30.7.2016 in Petition No. 302/GT/2014 has been considered as the opening capital cost as on 1.4.2014 for determination of tariff for the period 2014-19.

Additional Capital Expenditure

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

12. Further, Regulation 15 of the 2014 Tariff Regulations, provides as under:

“15. Renovation and Modernisation: (1) The generating company or the transmission licensee, as the case may be, for meeting the expenditure on renovation and modernization (R&M) for the purpose of extension of life beyond the originally recognised useful life for the purpose of tariff of the generating station or a unit thereof or the transmission system or an element thereof, shall make an application before the Commission for approval of the proposal with a Detailed Project Report giving complete scope, justification, cost-benefit analysis, estimated life extension from a reference date, financial package, phasing of expenditure, schedule of completion, reference price level, estimated completion cost including foreign exchange component, if any, and any other information considered to be relevant by the generating company or the transmission licensee.



(2) Where the generating company or the transmission licensee, as the case may be, makes an application for approval of its proposal for renovation and modernisation, the approval shall be granted after due consideration of reasonableness of the cost estimates, financing plan, schedule of completion, interest during construction, use of efficient technology, cost-benefit analysis, and such other factors as may be considered relevant by the Commission.

(3) In case of gas/ liquid fuel based open/ combined cycle thermal generating station, any expenditure which has become necessary for renovation of gas turbines/steam turbine after 25 years of operation from its COD and an expenditure necessary due to obsolesce or non-availability of spares for efficient operation of the stations shall be allowed:

Provided that any expenditure included in the R&M on consumables and cost of components and spares which is generally covered in the O&M expenses during the major overhaul of gas turbine shall be suitably deducted after due prudence from the R&M expenditure to be allowed.

(4) Any expenditure incurred or projected to be incurred and admitted by the Commission after prudence check based on the estimates of renovation and modernization expenditure and life extension, and after deducting the accumulated depreciation already recovered from the original project cost, shall form the basis for determination of tariff.”

13. The additional capital expenditure allowed vide order dated 30.07.2016 in Petition No. 302/GT/2014 for the period 2009-14 is as under:-

	2012-13	2013-14
Amount allowed on other than R&M schemes	925.78	520.23
Exclusions pertaining to de-capitalization not allowed	(6.04)	(458.13)
Net Additional Capital Expenditure allowed	919.75	62.10
Liabilities discharged during the year	10.46	21.24
Total additional capitalization allowed including liabilities	930.21	83.35

14. The petitioner vide affidavit dated 27.6.2016 has submitted that its expenditure on works which were earlier claimed for the period 2014-19 have been deferred beyond the period 2014-19. Accordingly, the revised additional capital expenditure claimed by the petitioner vide affidavit dated 29.8.2016 is summarized as under:-

(₹ in lakh)							
Sl. No	Name of the scheme	2014-15	2015-16	2016-17	2017-18	2018-19	Total
A	Commission's approved scheme						
1	CEA approved part of R&M package						
1.1	Augmentation of ESP	3615.00	3218.00				6833.00



SI. No	Name of the scheme	2014-15	2015-16	2016-17	2017-18	2018-19	Total
1.2	Strengthening of Conveyor structure in CHP Area	547.28					547.28
2	Plant work						
2.1	Closed cycle cooling water system including RO/STP, hot water duct & CT cell refurbishment	413.55	1361.00	125.00			1899.55
2.2	Installation of flow measuring device (water meter)	3.83		25.80			29.63
2.3	Procurement of fire tender (2. nos)	73.62					73.62
3	Plant civil Package						
3.1	2nd raising of Ash dyke phase V along with associated pipes and pump	1322.93					1322.93
3.2	Workshop building			55.32			55.32
3.3	Renovation of stores: construction of additional store building			165.00			165.00
3.4	Canteen renovation						0.00
3.5	Nallah Coverage						0.00
3.6	New service building (record room & other misc. civil works)						0.00
4	Township Civil Package						
4.1	Renovation of quarters BTPS township	742.54	6.00				748.54
4.2	Renovation & extension of BTPS dispensary	123.21					123.21
4.3	Drainage & sewage system up-gradation of township of BTPS including rain water harvesting			50.00			50.00
4.4	Renovation of services complex housing bank, post office etc.	53.69	3.00				56.69
5	Other works in progress						
5.1	Implementation of Energy audit recommendations (Energy efficient lamps & fittings)	13.65		41.00			54.65
6	Other scheme						
6.1	Dry ash extraction system (DAES package)				77.50	77.50	155.00



SI. No	Name of the scheme	2014-15	2015-16	2016-17	2017-18	2018-19	Total
6.2	Continuous emission monitoring system (online monitoring instruments in Chimney)		85.99	8.00			93.99
7	CEA approved part of main plant R&M package						
7.1	Main plant R&M package						0.00
7.2	Modification in HPH & LPH Drip system in Unit IV & V (2*210 MW)	57.00					57.00
7.3	Neutral grounding of HT system (Stage #2)			91.00			91.00
B	New Scheme						
8	Procurement of 1 nos. locomotive 1350 HP		948.00				948.00
9	Procurement of 5 nos of BEML BD-1 Dozers		896.00				896.00
10	Installation of CCTV system (12 nos.)		4.15		1.93	1.93	8.01
11	PAT	5.45					5.45
12	New Scheme of station						
12.1	Wet Ash handling system for additional passes of ESP unit 4 & 5						
12.2	Hydraulic operated aerial tower wagon platform			18.00			18.00
12.3	Excavator with rock breaker (2 nos.)						
12.4	Loaders 5 Ton (2 nos.)						
12.5	Track up-gradation of BTPS railway siding			60	120		180.00
12.6	Thermo gravimetric Analyser		20.40			9.00	29.40
12.7	Sulphur Analyser		18.04				18.04
12.8	Automatic bomb calorimeter		15.55				15.55
12.9	Passenger lift in TG hall				16.00	16.00	32.00
13.0	Installation of CCTV system (20 nos.)				32.00	32.00	64.00
13.1	Up-gradation of PA systems						0.00
13.2	Two plant air compressor of 40 cubic meter per minute				75.20		75.20
13.3	Strengthening of various structures in turbine and boiler areas of unit #4 & 5					80.00	80.00
14	Sustainable development						
14.1	Air Conditioning system based on screw Chiller				95.50	95.50	191.00



SI. No	Name of the scheme	2014-15	2015-16	2016-17	2017-18	2018-19	Total
14.2	New Scheme Stage-I			100.00	23.00	23.00	146.00
15	Total	6971.75	6576.13	739.12	441.13	334.93	15063.06

The above expenditure is claimed under Regulation 15 and Regulation 14(3)(ii) and (iii) of the 2014, Tariff Regulations.

15. In this regard the petitioner has submitted that due to uncertainty on the running of units of the generating station Delhi Pollution Control Committee (DPCC), few works have been put on hold and has accordingly been deferred for the period beyond 2014-19. The petitioner further submitted that it will take up deferred works as mentioned in affidavit dated 27.6.2016 once the issues which is subject matter of certain petitions before the Commission is decided. The respondent, BRPL has submitted that any decision on additional capitalization of the generating station beyond those approved vide order dated 12.5.2011 in Petition No. 324 of 2009 be postponed till such time the decision on the closure of the generating station owing to the pollution problems are taken by the DPCC. It has further submitted that the Commission may direct the petitioner to postpone an investment and that any further investment would be at the risk and responsibility of the petitioner. The respondent has also submitted that since the R&M works is yet to be awarded and timeline for completion is 36 months, it may not be possible for the petitioner to furnish the actual Heat Rate and MW output of Units Nos.4 and 5 of the generating station, prior to conducting the performance tests on these units during the period 2014-19.

16. In response the petitioner has submitted that DPCC vide orders dated 31.12.2015 and 21.03.2016 had the closure of units of the generating station and therefore, due to uncertainty in the running of units of the generating station, certain R&M works, would be taken up by petitioner. The petitioner has further submitted that other works, which are in compliance with the statutory norms/guidelines are required to be carried out irrespective of the life of the generating station. The petitioner has submitted that no Compensation Allowance or Special Allowance is permissible to the generating station and since the generating station is old, various works as detailed herein has been carried out in order to sustain the operation of the generating station. The petitioner has also



submitted that the R&M works of the generating station is allowed by the Commission vide order dated 12.5.2011 in Petition No. 324/2009.

17. We have examined the matter. It is noticed that DPCC vide letter dated 21.3.2016 had allowed the operation of the generating station in respect of only two units (2 x 210 MW) of the generating station i.e. Stage-II to operate which has been retrofitted with additional Electro Static Precipitator (ESP), subject to meeting the standard of particulate matter of 50 mg/Nm³ and has ordered the closure of other three units i.e. (3 x 95 MW) of the generating station. The relevant portion of the meeting is extracted as under:

M/s Badarpur Thermal Power Station has stated that it has retrofitted Pollution Control Devices in two of its five units of 210 MW which will meet the standards of Particulate Matter of 50mg/Nm³. He further stated that at present, one unit of 210MW is operational. BTPS representative further stated that one month time will be required to stabilize the second unit of 210 MW before it starts meeting the standards of Particulate Matter of 50mg/Nm³. It was also informed that the other three units of 95MW have not been retrofitted the additional ESPs, therefore, unable to meet the standards of Particulate Matter of 50mg/Nm³.

Accordingly, it was decided to allow operation of two units of 210MW. Monitoring by way of random picking of samples will be done. Further BTPS shall ensure full proof functioning of Online Monitoring system and flow of measurement data to DPCC. It may be stated that stringent actions will be taken if there is violation of norms.

18. Accordingly, we proceed to examine the projected additional capital expenditure claimed by the petitioner for two units of the generating station in the succeeding paragraphs.

R&M package

Augmentation of ESP

19. Against the CEA approved cost of ₹3823 lakh, the petitioner has claimed projected additional capital expenditure of ₹6833 lakh (₹3615 lakh in 2014-15 and ₹3218 lakh in 2015-16) towards Augmentation of ESP. The petitioner has submitted that the Commission vide order dated 12.5.2011 in Petition No. 324 of 2009 for approval of R&M of the generating station has approved the expenditure at a cost of ₹3823.00 lakh based on the estimation of 2007-08 price level.. The Commission vide order dated 23.5.2012 in Petition No. 332/2009 had approved additional capital



expenditure of expenditure of ₹3440.00 lakh and ₹382.00 lakh during the years 2012-13 and 2013-14 respectively, towards Augmentation of ESPs The petitioner has submitted the details of emission level for Unit-4 and Unit-5 as 300-400 mg/Nm³ and 100-150 mg/Nm³ respectively before augmentation of ESP. Further, with respect to increase in cost the petitioner has submitted that the Commission has approved the cost which was based on 2007-08 price level and now the cost claimed are based on actual awarded value. The petitioner further submitted that the R&M package which was awarded in March 2011 at ₹5350 lakh in order dated 12.5.2011 in Petition No. 324/2009 and later, the site conditions necessitated modifications in the Ducts, which was added to the scope of work resulting in increase of ₹350 lakh. Further, submitted that an additional ₹700 lakh was on account of price escalations.

20. The respondent, BYPL has submitted that petitioner has not submitted any reason for such significant cost escalation and requested the Commission to direct the petitioner to explain reason for cost over-run. In response, the petitioner has submitted that there is an increase in cost over the CEA approved R&M scheme because CEA approved R&M schemes were based on estimate on 2008 price level whereas the cost indicated in the projection in tariff period 2014-19 are based on the present cost. The respondent has submitted that the petitioner has not considered the de-capitalization value and has therefore requested the Commission to direct the petitioner to submit the details of de-capitalization. It has also submitted that the tariff is payable when the asset is commissioned and provides benefit to the beneficiaries of the plant and hence the petitioner may be directed to recover tariff as and when the asset is commissioned. As regards the de-capitalization, the petitioner in response has submitted that it has considered de-capitalization value as per book of accounts only for those assets which are being replaced.

21. The Commission had directed the petitioner to submit the supporting documents and justification for the increase in cost of the R&M as against the approved cost. In response, the petitioner has submitted the minutes of meeting dated 15.3.2016 between DPCC, Department of Power, Govt. of NCT, Delhi, Department of Environment, Govt. of NCT, Delhi, Delhi Transco Ltd.,



SLDC, DISCOMs, Rajghat Power House and the petitioner, wherein the petitioner has informed that retrofitted pollution control devices were installed in two units each of 210 MW of the generating station accordingly, the standard of particulate matter of 50 mg/Nm³ ground be met. The petitioner has also furnished two test certificates submitted by Shriram Institute for Industrial Research which indicate the particulate matter concentration of 20 mg/Nm³ and 24 mg/Nm³ in respect of Unit-5 which is within the emission standard specified by DPCC.

22. We have examined the matter. It is noticed that petitioner has achieved the SPM norm of 50 mg/Nm³ as specified by DPCC through augmentation of ESP in Unit-5 of Stage-II of the generating station and there is substantial reduction in the emission level from 100-150 mg/Nm³ to 20 mg/Nm³ after the augmentation of ESP. It is further observed that though the petitioner has furnished the justification for the increase in expenditure, it has not submitted any necessary/supporting documents in support of the increase in cost like letter of award etc. justifying the increased value of contract. However, considering the need/requirement for ESP, we are inclined to restrict the cost towards augmentation of ESP to the approved cost of ₹3823.00 lakh along with the corresponding de-capitalization of ₹382.30 lakh (10% de-capitalized assets) for the period 2014-19. The petitioner has been directed to submit proper reasons/justification towards the increase in cost for the asset along with letter of award at the time of truing-up of tariff in terms of Regulation 8 of the 2014 Tariff Regulations and the same will be considered in accordance with law.

Strengthening of Conveyor structure in CHP Area

23. The petitioner has claimed projected additional capital expenditure of ₹547.28 lakh in 2014-15 towards strengthening of conveyor structure in Coal Handling Plant (CHP) area, against the expenditure of ₹500 lakh approved vide order dated 23.5.2012 in Petition No. 332/2009. In justification of the same the petitioner has submitted that conveyor structure was constructed more than 40 years back and at certain places reinforcement has corroded and cracks have been observed. It has also submitted that study was conducted by CPRI and it has been suggested



certain remedial measures to be undertaken to strengthen the RCC structures. The petitioner has submitted that the increase in cost is mainly of account of IDC of ₹19.94 lakh and the execution of additional job for strengthening of foundations of Conveyers-2, 4, 5 & 14 is on account of the critical condition.

24. We have examined the matter. It is observed that Conveyor structure is in operation since inception of the project and due to prolonged operation, its reinforcement had corroded and cracks have also appeared and as a result, this old asset is prone to frequent failures. The Commission in order dated 23.5.2012 in Petition No. 332/2009 had observed as under:-

“The petitioner has furnished the asset-wise justification for the said expenditure. However, the expenditure for ₹6212.90 lakh (₹5192 lakh) proposed for capitalization during 2014-15 is not allowed and the same shall be considered in accordance with law during the next tariff period. On prudence check, the claim of the petitioner for ₹45.00 lakh for 2011-12 for inter connection of underground tanks for drinking water supply from DJB mains is restricted to the approved cost of ₹40.00 lakh and is allowed, in the absence of any proper justification for increase in the said expenditure. Based on the justification submitted by the petitioner, the capitalization of an expenditure of ₹1015.00 lakh for 2009-14 is allowed along with de-capitalized value of ₹50.00 lakh which constitutes 10% of the value of asset (₹500.00 lakh for strengthening of conveyor structure in CHSP area) replaced. Accordingly, the net expenditure for 2009-14 works out to ₹965.00 lakh (1015.00– 50.00) and the same is allowed to be capitalized.”

25. However keeping in view the need to consider the additional capital expenditure for this generating station as observed by the Commission in order dated 23.5.2012, we allow the expenditure of ₹547.28 lakh along with de-capitalization of ₹54.73 lakh (10% of estimated de-capitalized value of asset) towards strengthening of Conveyor structure in CHP area. Accordingly, the net additional capital expenditure allowed is ₹492.55 lakh.

Plant work

Closed cycle cooling water system including RO/STP, hot water duct & CT cell refurbishment:

26. The petitioner has claimed total additional capital expenditure of ₹1899.55 lakh (= ₹413.55 lakh in 2014-15, ₹1361.00 lakh in 2015-16 and ₹125.00 lakh in 2016-17) as against the additional capital expenditure of ₹16050 lakh (₹13850 lakh for Integrated Closed Cycle Cooling Water System and ₹2200 lakh for the RO + UF plant for DM water) allowed vide order dated 23.5.2012 in Petition



No. 332/2009. In justification, the petitioner has submitted that the Integrated Closed Cycle Cooling Water System consists of mainly following packages:

- (i) Sewage Water Treatment Plant (STP)
- (ii) Additional cooling Tower (CT)
- (iii) Renovation of existing CTs, CT pumps &
- (iv) Replacement of Hot Water Duct

27. The petitioner has submitted that out of these, STP and Additional Cooling Tower are under tendering. The petitioner has also submitted that initially the STP & Makeup water pump house were envisaged to be located in the Ash Dyke Area and subsequently, the location of STP & Makeup water pump house was shifted to inside the plant area as the costs was very high due to inappropriate foundations in the Ash dyke area and large quantity of associated piping work. It has submitted that the NIT for cooling Tower Package was published but was subsequently cancelled because of high prices quoted by bidders and hence the package has been retendered. The petitioner has further submitted that the renovation of existing CTs, CT pumps and replacement of Hot Water Duct has been split into sub packages, out of which many sub packages have been awarded and the work is in progress. It has also submitted that awarding of the balance packages is under process.

28. The respondent, BYPL has submitted that petitioner has not furnished any reason for such significant cost escalation and has prayed that the Commission may direct the petitioner to provide reason for cost over-run. In response the petitioner has clarified that the increase in cost is on account of the fact that while the CEA approved R&M schemes were based on estimates on 2008 price level, the expenditure claimed under R&M scheme is based on the present cost. It has also submitted that petitioner has not considered the de-capitalization value of the assets and has therefore stated that the the petitioner may be directed to submit the details of the de-capitalization



of the assets. In response, the petitioner has submitted that it has considered de-capitalization value as per book of accounts only for those assets which are replaced.

29. We have examined the matter. It is noticed that the additional capital expenditure claimed is necessary for improvement in the efficiency of the generating station and to deal with the quality of water being received in the generating station. It is observed that the Commission vide order dated 12.5.2011 in Petition No. 324/2009 had approved the amount of ₹13850.00 lakh for Integrated closed cycle cooling water system and had separately approved ₹2200 lakh for the RO and UF plant for DM water for the said expenditure which is within the approved amount for the period 2014-19. Since, the petitioner has not furnished supporting documents and the work has also been deferred beyond the period 2014-19 by the petitioner in view of DPCC orders, we are not inclined to condone the expenditure claimed by the petitioner within the head. The additional expenditure can be considered as and when it is incurred and subject to submission of necessary supporting documents.

Procurement of fire tender (2. nos)

30. The petitioner has claimed projected additional capital expenditure of ₹73.62 lakh in 2014-15 towards Procurement of two fire tenders as against the additional capital expenditure of ₹55 lakh in 2012-13 allowed in order dated 23.5.2012 in Petition No. 332/2009 on the ground that the existing fire tender are more than 19 years to 22 years old. The petitioner was directed to furnish the reasons for increase in cost of the asset, and in response, the petitioner has submitted that the work got delayed due to difficulty in getting Bharat Stage IV compliant chasis and there was escalation of price in the meantime. It has further submitted that the fire tenders were envisaged with single tank for addressing one type of fire only and later on, change of design was made to equip the fire tenders with four types of tanks for addressing all types of fires.

31. We have examined the matter. In consideration of the justification submitted by the petitioner and as the said item is towards replacement of old fired tenders, an expenditure of ₹73.62 lakh along with the corresponding de-capitalization of ₹7.36 lakh (i.e. 10% of ₹73.62 lakh) has been



allowed. Accordingly, on net basis, the projected additional capital expenditure of ₹66.26 lakh (₹73.62 lakh - ₹7.36 lakh) has been allowed under Regulation 15 of the 2014 Tariff Regulations.

Plant Civil package

32. The petitioner has projected additional capital expenditure of ₹1322.93 lakh in 2014-15 towards 2nd raising of Ash dyke phase V along with associated pipes and pump as against the additional capital expenditure of ₹1000 lakh. In addition, the petitioner has claimed additional capital expenditure of ₹55.32 lakh in 2016-17 towards Workshop building and ₹165.00 lakh in 2016-17 towards Renovation of stores and Construction of additional store building.

33. In justification of the same the petitioner has submitted that the Commission vide order dated 12.05.2011 in Petition no. 324/2009 and by order dated 23.5.2012 in Petition no. 332/2009 had approved various Plant Civil Packages for the generating station and had allowed the projected expenditure to be capitalised in 2014-15. Accordingly, the petitioner has prayed that the expenditure claimed in 2014-15 may be allowed to be capitalized.

34. The respondent, BYPL has pointed out that the petitioner has not considered de-capitalized value of the assets replaced and has therefore submitted that the Commission may direct the petitioner to consider the de-capitalization value of 10% of the value of new asset for replaced assets. In response, the petitioner has submitted that it has condoned the de-capitalization amount as per books of accounts only in respect of those assets which are being replaced.

35. The petitioner was directed to furnish the reasons for the cost variation and in response, the petitioner has submitted that the increase is due to the inclusion of IDC of ₹103 lakh, free issue materials of ₹59 lakh which was not envisaged at the time of estimation and due to inclusion of Price Variation clause in the contract. The petitioner has further submitted that at the time of execution, it was found that a number of additional pedestals were required to be constructed in order to support the Ash slurry pipe line for uniform distribution of ash filling in ash dyke phase-V area and items like



providing and laying brick masonry, is generally not considered while preparing estimates and the same is executed as per site requirement.

36. We have examined the matter. It is observed that the Commission vide order dated 12.5.2011 in Petition No. 324/2009 had approved an amount of ₹6058.20 lakh for Plant Civil Package after considering the corresponding de-capitalization of ₹149.70 lakh towards replacement of old assets. It is evident that the projected additional capital expenditure allowed earlier was based on estimates considering the past awarded contracts for works of a similar nature. It is further observed that the capitalization value of Ash dyke raising work has increased on account of execution of pedestals and free issue of material which was not considered in the expenditure capitalized earlier. In this background, we allow the projected additional capital expenditure of ₹1322.93 lakh claimed towards 2nd raising of Ash dyke phase V along with associated pipes and pump in 2014-15 under Regulation 15 of the 2014 Tariff Regulations. We have also considered petitioner's claim towards workshop building and have allowed an expenditure of ₹49.79 lakh (₹55.32 lakh - ₹5.53 lakh i.e. 10% estimated de-capitalization) as the workshops have insufficient space to cater to the maintenance needs of plant. In addition to this, the additional capital expenditure of ₹148.50 lakh (₹165.00 lakh - ₹16.50 lakh i.e. 10% estimated de-capitalization) towards renovation of stores has been allowed as the same is required for proper inventory control.

Township Civil Package

37. The petitioner has claimed projected additional capital expenditure of ₹978.44 lakh {₹748.54 lakh (₹742.54 lakh in 2014-15 and ₹6.00 lakh in 2015-16) towards Renovation of quarters at BTPS township, ₹123.21 lakh in 2014-15 towards Renovation & extension of BTPS dispensary, ₹50.00 lakh in 2016-17 towards drainage & sewage system upgradation of township of BTPS including Rain water harvesting and ₹56.69 lakh (₹53.69 lakh in 2014-15 and ₹3.00 lakh in 2015-16) towards Renovation of services complex housing bank, post office etc}.



38. The respondent, BYPL has submitted that petitioner has not considered the de-capitalisation value for assets replaced and therefore, the Commission may direct the petitioner to consider the de-capitalization value at the rate of 10% of the value of new asset for replaced assets. In response, the petitioner has submitted that it has considered the de-capitalization amount as per books of accounts only for those assets which are replaced.

39. We have examined the matter. It is observed that township for the purpose of residence of the employees working in the generating station form an integral part of the generating station and is included in the main package at the time of construction. Since, R&M scheme is being implemented for life extension of the generating station, it is necessary to ensure that the old buildings in the township are renovated/ replaced to make it habitable for the employees of the generating station. Hence, the claim of the petitioner is allowed. It is however noted that the Commission vide order dated 12.5.2011 in Petition No. 324/2009 had approved the additional capital expenditure of ₹1328.10 lakh (₹1468.00 lakh – ₹139.00 lakh i.e. 10% de-capitalized value on replaced assets) towards Renovation/ Replacement of old buildings in the township to make it habitable. It is observed that the petitioner has not furnished any de-capitalized value of the assets corresponding to replaced assets. Accordingly, the net amount of ₹880.60 lakh (₹978.44 lakh - ₹97.84 lakh i.e. 10% de-capitalization on replaced assets) has been allowed to be capitalized during the period 2014-19. The petitioner is however directed to submit the actual de-capitalized value of the asset at the time of truing-up of tariff for the period 2014-19 in terms of Regulation 8 of the 2014 Tariff Regulations.

Other works

Implementation of Energy Audit recommendations

40. The petitioner has claimed projected additional capital expenditure of ₹54.65 lakh (₹13.65 lakh in 2014-15 and ₹41.00 lakh in 2015-16) towards Energy efficient lamps & fittings for implementation of Energy Audit recommendations. The petitioner has submitted that Energy Audit is one of the requirements of the Energy Conservation Act and based of the study and recommendation of the



Energy Audit, several schemes are implemented from time to time. The petitioner has also submitted that the Commission in order dated 15.5.2014 in Petition No. 139/GT/2013 has observed as below:

“Energy Management System

32. *The petitioner has claimed actual capital expenditure of ₹10.26 lakh during 2010-11. The petitioner has submitted that similar expenditure has been allowed in the order dated 23.5.2012 in Petition No. 270/2009 pertaining to Auraiya GPS. The petitioner’s proposal has been opposed by TPDDL. It is true that in case of Auraiya GPS, the Commission had allowed the expenditure in order dated 23.5.2012. However, considering the fact that the benefit of reduction in auxiliary power consumption is not passed on to the beneficiaries during the period 2009-14, capitalization has been disallowed, in truing up Petition No. 28/GT/2013 (Auraiya GPS). On the same considerations, the expenditure of ₹10.26 lakh claimed has not been allowed.”*

41. It is noticed that the Commission in order dated 15.5.2014 in Petition No.139/GT/2013 had disallowed the claim of the petitioner for capitalization of this item and an Appeal filed by the petitioner amongst others, before the Tribunal in Appeal No. 250/2013, the Tribunal by its judgment dated 10.9.2015 had affirmed the findings of the Commission. The relevant portion of the judgment of the Tribunal is stated as under:

“On deep analysis of the material on record and, after due consideration of the rival contentions, we find that the Central Commission has rightly and legally disallowed the claim of the additional capitalization on Energy Management System claimed by the Appellant on the ground that the benefit of reduction in Auxiliary Power Consumption due to the implementation of Energy Management System is not being passed on to the beneficiaries by the Appellant.”

42. In line with the above decision, the additional capital expenditure claimed by the petitioner under this head is not allowed.

Other Schemes

Dry Ash extraction system

43. The petitioner has claimed projected additional capital expenditure of ₹155.00 lakh (₹77.50 lakh each in the years 2017-18 and 2018-19) towards Dry fly ash extraction system as against the additional capital expenditure of ₹1951.00 lakh allowed vide order dated 23.5.2012 in Petition No. 332/2009. In justification of the same, the petitioner has submitted that the said claim is based on



the guidelines/direction of the MoEF, Gol and is statutory in nature, for achieving 100% Ash utilization by ash generating stations.

44. It is noticed that out of the total additional capital expenditure approved cost of ₹1951 lakh for the period 2009-14 an amount of ₹ enditulakh was already been allowed in the order dated 23.5.2012 in Petition No. 332/2009 for the period 2009-14. Considering the fact that the said work is in compliance with the guidelines/directions of MoEF and is statutory in nature, the total projected additional capital expenditure of ₹155.00 lakh is allowed to be capitalized for the years 2017-18 and 2018-19 under Regulation of the 2014 Tariff Regulations.

Continuous Emission Monitoring system

45. As against the additional capital expenditure of ₹30.00 lakh, the petitioner has claimed projected additional capital expenditure of ₹93.99 lakh (₹85.99 lakh in 2015-16 and ₹8.00 lakh in 2016-17) towards Continuous Emission Monitoring System in Chimney under Regulation 14(3)(ii) of the 2014 Tariff Regulations. The petitioner has submitted that the work got delayed and the cost has increased since originally only CO₂ monitoring was envisaged, but later on as per the directions of DPCC in dated 14.3.2014, monitoring of NO_x, SO_x, CO, Flue Gas Temperature, Flue Gas Pressure and Flue Gas Flow rate on stack were included.

46. The respondent, BYPL has submitted that the Commission may direct the petitioner to submit details of expenditure incurred/proposed to be incurred as against the expenditure allowed by the Commission. In response, the petitioner has submitted that the details of approved cost and expenditure incurred upto March, 2014 against approved schemes were already filed with true up Petition No. 302/GT/2014. Further, the petitioner has submitted that the works which continued beyond the year 2014, have been projected for the period 2014-19 and the actual expenditure corresponding to these projected works will be filed at the time of truing-up of Tariff.

47. We have examined the matter. it is noticed from the DPCC letter dated 14.3.2014 that DPCC has given clear directions to the petitioner to ensure functioning of the Online Monitoring system. In



view of the above and since the expenditure is statutory in nature, we have considered and allowed the additional capital expenditure of ₹93.99 lakh under Regulation 14(3)(ii) of the 2014 Tariff Regulations.

CEA approved part of Main Plant R&M package

Modification in HPH & LPH Drip system in Unit IV & V

48. The petitioner has claimed projected additional capital expenditure of ₹57.00 lakh in 2014-15 towards modification HPH & LPH Drip system in Units IV & V. The petitioner has submitted that the package has been awarded and material has been received at site.

49. We have examined the matter. It is noticed that the petitioner has not furnished any justification for the projected expenditure claimed for this work. In the absence of any justification we are not inclined to consider the claim of the petitioner. Accordingly, no expenditure has been allowed under this head. However, the petitioner is granted liberty to furnish proper justification in respect of the claim at the time of truing-up of tariff in terms of Regulation 8 of the 2014 Tariff Regulations and the same will be considered in accordance with law.

Neutral grounding of HT system (Stage #2)

50. The petitioner has claimed projected additional capital expenditure of ₹91.00 lakh in 2016-17 towards neutral grounding of HT system (Stage #2). In justification of the same the petitioner has submitted that the said item forms the part of Main Plant Package, which was already approved by the Commission in order dated 12.5.2011. It has also prayed that the Commission may allow the capitalization of the same.

51. The respondent, BYPL has submitted that petitioner has not considered the de-capitalization value of the assets replaced and therefore, the petitioner may be directed to consider the de-capitalization at the rate of 10% of the value of new assets for replaced assets. In response, the petitioner has submitted that it has considered the de-capitalization amount as per books of accounts only for those assets which are being replaced. The respondent, BYPL has submitted that



the Commission may direct the petitioner to recover tariff as and when the asset is commissioned and not when the asset is under construction.

52. We have examined the matter. It is noticed that the petitioner has not furnished any justification for claiming the additional capital expenditure for this work. Hence, in the absence of any justification the claim of the petitioner is not allowed. However, the petitioner is granted liberty to submit proper justification in respect of the assets claimed at the time of truing-up of tariff in terms of Regulation 8 of the 2014 Tariff Regulations and the same will be considered in accordance with law.

New Scheme

53. The petitioner has claimed projected additional capital expenditure towards new schemes, which are mostly towards replacement of old assets like locomotive, dozers, railway track up-gradation and some new assets like CCTV cameras, aerial tower wagon platform, thermo gravimetric analyzer, sulphur analyser etc.

54. The respondent, BYPL has submitted that petitioner had not made any assessment of the condition of locomotive, dozers, track condition, etc at the time of R&M proposal and hence there seems to be no finality to the cost assessment of R&M proposal. In response, the petitioner has submitted that CEA has approved R&M schemes in February 2008 and subsequently, it was envisaged that few more items like wet ash handling system, Aerial tower wagon platform, loader, locos etc are required for safe operation of generating station. Based on the submissions, the asset wise additional capital expenditure towards new scheme has been examined in the paragraphs below:

Locomotive 1350 HP

55. The petitioner has claimed projected additional capital expenditure of ₹948.00 lakh in 2015-16 towards the Procurement of 1 number of locomotive 1350 HP. In justification, the petitioner has submitted that the generating station has 4 WDS4 and 1 WDS6 Locos and the first Loco is more than 36 years old and its service life has long back expired. It has further submitted that this model



has become obsolete and Indian Railways is phasing out these locos and hence obtaining spares for this loco has become difficult. The petitioner has submitted that frequent breakdown of these locos causes delay in rake unloading, resulting in reduced availability of coal. Accordingly, the petitioner has submitted that it has proposed to replace the oldest WDS4 loco with 1 WDS6 Loco.

56. We have examined the matter. Considering the requirement for replacement of old Loco as a functional necessity and since the loco is 36 years old, we allow the projected additional capital expenditure of ₹948.00 lakh with corresponding de-capitalization of ₹94.80 lakh (net additional capital expenditure of ₹853.20 lakh), in 2015-16.

Procurement of 5 numbers of BEML BD-1 Dozers

57. The petitioner has claimed projected additional capital expenditure of ₹896.00 lakh in 2015-16 towards the Procurement of 5 numbers of BEML BD-1 Dozers and has submitted that Coal feeding from yard is done by Dozers as there is no stacker reclaimer and also for breaking /crushing of big lump coals in wagon tippler area Dozer services are required. It has further submitted that out of total 9 Dozers, 6 Dozers have outlived their useful life and are unsafe for operator.

58. Since these assets have outlived their useful life and their replacement is necessary for efficient and successful operation of the generating station, the additional capital expenditure of ₹896.00 lakh with corresponding de-capitalization of ₹89.60 lakh (net additional capital expenditure of ₹806.40 lakh) is allowed for 2015-16.

CCTV System

59. The petitioner has claimed projected additional capital expenditure of ₹8.01 lakh (₹4.15 lakh in 2015-16, ₹1.93 lakh in 2017-18 and ₹1.93 lakh in 2018-19) towards Installation of 12 number of CCTV system under Regulation 14(3)(iii) read with Regulation 15 of the 2014 Tariff Regulations. The petitioner has submitted that Installation of CCTV system is essential for ensuring the safety of the plants, machinery and personnel of the generating station. It has also submitted that the asset is



required from the internal security point of view due to increased threat perception, especially for the power generating stations. The petitioner has also claimed projected additional capital expenditure ₹64.00 lakh (₹32.00 lakh in 2017-18 and ₹32.00 lakh in 2018-19) towards Installation of additional 20 number of CCTV system at different locations in Plant and Township area under Regulation 14(3)(iii) read with Regulation 15 of the 2014 Tariff Regulations. The petitioner has furnished the copy of recommendations and further stated that as per the recommendations of Joint Inspection Report of CISF & HR. for Security Surveillance inside Plant Area (Watch Tower-10, Scrap Yard Area, Railway In Gate, WTP & Canal Area & Ash Silo) and Township Areas CCTV is required.

60. We have examined the matter. Considering the fact that the expenditure of ₹8.01 lakh and ₹64.00 lakh for CCTV system is incurred for the safety and security of the generating station and based on the requirement of Security agency, we are inclined to allow the same in terms of Regulation 14(3)(iii) of the 2014 Tariff Regulations.

Installation of Net in Cooling Tower Inlet under PAT scheme

61. The petitioner has claimed projected additional capital expenditure of ₹5.45 lakh in 2014-15 towards Installation of Net in Cooling Tower Inlet under Perform, Achieve and Trade (PAT) scheme under Regulation 15 of the 2014 Tariff Regulations. In justification of the same, the petitioner has submitted that the PAT scheme has been launched under the aegis of Bureau of Energy Efficiency (BEE) and as part of the scheme, thermal power plants have been given certain targets for improvement in the net heat rate. The petitioner has also submitted that after installation of fishing net, debris particle will be separated from cooling water, as the same is likely to improve the condenser vacuum.

62. We have examined the matter. Regulation 9(5)(b) of the 2014 Tariff Regulations provides as under:

“The capital cost with respect to thermal generating station, incurred or projected to be incurred on account of the Perform, Achieve and Trade (PAT) scheme of Government of India will be considered by the Commission on case to case basis and shall include:



- a) *Cost of plan proposed by developer in conformity with norms of PAT Scheme; and*
- b) *Sharing of the benefits accrued on account of PAT Scheme”*

63. It In terms of the above Regulations, the petitioner is required to submit the benefit arising out of the expenditure so that the same can be shared with the beneficiaries. As the impact on the heat rate has not been submitted by the petitioner, we are not inclined to approve the additional capital expenditure towards installation of Net in Cooling Tower Inlet under PAT scheme. However, the petitioner is granted liberty to submit proper justification along with the details of benefit arising out of the expenditure incurred for this asset at the time of truing-up of tariff in terms of Regulation 8 of the 2014 Tariff Regulations and the same will be considered in accordance with law.

Hydraulic operated aerial tower wagon platform

64. The petitioner has claimed projected additional capital expenditure of ₹18.00 lakh in 2016-17 towards Hydraulic operated aerial tower wagon platform under Regulation 15 of the 2014 Tariff Regulation.

65. The assets/ items are required for easy and safe maintenance activities and general up-keepment of plants and machinery and it also provide benefits in terms of reduced maintenance time. Accordingly, we are inclined to allow the additional capital expenditure under Regulation 15 of the 2014 Tariff Regulations.

Track upgradation of BTPS railway siding

66. The petitioner has claimed projected additional capital expenditure of ₹180.00 lakh (₹60.00 lakh in 2016-17 and ₹120 lakh in 2017-18) towards track up-gradation of BTPS railway siding. The petitioner has submitted that currently the tracks use cast iron CST-9 and Wooden Sleepers, which are no longer available in market and Indian Railways has discontinued and declared these items obsolete. It has also submitted that the Ministry of Railways, GoI, has been insisting for replacement of wooden/ cast iron sleepers. The petitioner has further submitted that the use of wooden sleepers



has also been restricted by the Hon'ble Supreme Court. The petitioner also submitted that the Standing Committee of Railways, Ministry of Railways in its eight report (August 2010) on the Protection and Security of Railway Property and Passengers has also raised this issue. It has further submitted that the existing Rails of 90 R section have also flattened and reached its permissible limits in Main Reception Line-1, Inhaul and Outhaul lines of Wagon Tiplers and at many places rail based is rusted due to corrosion. The petitioner has also submitted that the Indian Railways have also upgraded coal wagons of higher axle load for increasing transportation capacity for which rails have to be replaced with higher ultimate tensile strength.

67. We have examined the matter. It is noticed from the above submissions that the railway siding tracks had become obsolete and in order to ensure the safe functioning and efficient operation of the plant, up-gradation of railway track is required. We, therefore are inclined to allow the additional capital expenditure of ₹180.00 lakh with corresponding de-capitalization of ₹18.00 lakh (net additional capital expenditure of ₹162.00 lakh) under Regulation 15 of the 2014 Tariff Regulations.

Passenger lift in TG hall

68. The petitioner has claimed projected additional capital expenditure of ₹32.00 lakh (₹16.00 lakh each during 2017-18 and 2018-19) towards passenger lift in TG hall. The petitioner has submitted that the passenger lift is 25-30 years old and with minor renovations & modernizations its services were made available till now. The petitioner further submitted that there are frequent breakdowns as the design of existing passenger lift 1 is very old and design being obsolete the AMC agency is facing lot of difficulty in procuring spares besides malfunctioning of old safety devices.

69. We have examined the matter. Considering the fact that the passenger lift is 25-30 years old, and needs to be replaced the projected additional capital expenditure of ₹32.00 lakh has been allowed along with the corresponding de-capitalization of ₹3.20 lakh (i.e. 10% of ₹32.00 lakh). Accordingly, on net basis, the projected additional capital expenditure of ₹28.80 lakh (₹32.00 lakh -



₹3.20 lakh) has been allowed for the tariff period 2014-19 under Regulation 15 of the 2014 Tariff Regulations.

Other assets

70. The petitioner has claimed projected additional capital expenditure of ₹62.99 lakh (₹29.40 lakh {₹20.40 lakh in 2015-16 and ₹9.00 lakh in 2018-19} towards Thermo Gravemetric analyser, ₹18.04 lakh in 2015-16 towards Sulphur Analyser, ₹15.55 lakh in 2015-16 towards Automatic bomb calorimeter).

71. It is observed that the expenditure for ₹62.99 lakh towards thermo gravemetric analyser, Sulphur Analyser and automatic bomb calorimeter is in the nature of minor assets and hence not allowed to be capitalized.

Air Compressor

72. The petitioner has claimed projected additional capital expenditure of ₹75.20 lakh in 2017-18 towards two Plant Air compressor of 40 cubic meter per minute and has submitted that Plant Air requirement of this generating station is approximately 40 cubic meter per minute and presently this requirement is being met with one 30 cubic meter per minute capacity (for which OEM is not interested in supplying spares being obsolete model) and another compressor of 14.6 cubic meter per minute capacity. The petitioner has further submitted that there is no back up/ stand by Plant Air Compressors for the above compressors and therefore it has proposed two plant air compressor of 40 cubic meter per minute as it is essential for operation of the generating station.

73. We have examined the matter. In terms of the 2014 Tariff Regulations, the capitalization of spares over and above the initial spares after the cut-off-date, are not permitted for the purpose of tariff, and they form part of the O&M expenses when consumed. Since the claim of the petitioner is in the nature of spares we are not inclined to consider the petitioners claim towards two plant air compressor of 40 cubic meter per minute and hence disallowed.



Strengthening of various structures in Turbine and Boilers

74. The petitioner has claimed projected additional capital expenditure of ₹80.00 lakh in 2018-19 towards strengthening of various structures in turbine and boiler areas of Units Nos. 4 & 5 and has submitted that CPRI, Koradi, Nagpur had conducted condition assessment study of structures in Turbine & Boiler areas and has recommended the strengthening of various structures in Turbine & Boiler areas due to severe corrosion of reinforcement & damaged condition of concrete.

75. We have examined the matter. It is observed from the above submissions that this generating station, is a very old station and major portion of the structures of Boiler and Turbine area needs strengthening. Also in consideration of the report of CPRI, Koradi, Nagpur, it is noticed that the expenditure incurred is necessary for safety of plant, machinery and personnel of the generating stations. Accordingly, we allow the claim of the petitioner in terms of Regulation 15 of the 2014 Tariff Regulations.

Sustainable development

76. The petitioner has claimed projected additional capital expenditure of ₹191.00 lakh (₹95.50 lakh each for the years 2017-18 and 2018-19) towards Air conditioning system based on screw chiller under Regulation 14 (3) (ii) read with Regulation 15 of the 2014 Tariff Regulations. The petitioner has submitted that this expenditure is for installation of Screw Chiller based Air Conditioning System in Old & New Auxiliary Building, R&M building and Plant canteen in generating station as the conventional air conditioning system uses CFC -12 (known as R-12) and HCFC -22 (known as R-22), which are among the ozone depleting gases. The petitioner has further submitted that as per the Montreal Protocol on Substances that deplete the Ozone layers (1987), of which India also became a signatory in 1992, these gases are to be phased out. The petitioner has also submitted that Screw Chiller based Air Conditioning System use environment friendly refrigerant namely 134a, considered zero ozone depletion potential and less maintenance prone.



Sl. No	Name of the scheme	2014-15	2015-16	2016-17	2017-18	2018-19	Total
A	Commission's approved scheme						
1	CEA approved part of R&M package						
1.1	Augmentation of ESP	3253.50	187.20				3440.70
1.2	Strengthening of Conveyor structure in CHP Area	492.55					492.55
2	Plant work						
2.1	Closed cycle cooling water system including RO/STP, hot water duct & CT cell refurbishment	413.55	1361.00	125.00			1899.55
2.2	Procurement of fire tender (2. nos)	66.26					66.26
3	Plant civil Package						
3.1	2nd raising of Ash dyke phase V along with associated pipes and pump	1322.93					1322.93
3.2	Workshop building			49.79			49.79
3.3	Renovation of stores: construction of additional store building			148.50			148.50
4	Township Civil Package						
4.1	Renovation of quarters BTPS township	668.29	5.40				673.69
4.2	Renovation & extension of BTPS dispensary	110.89					110.89
4.3	Drainage & sewage system upgradation of township of BTPS including rain water harvesting			45.00			45.00
4.4	Renovation of services complex housing bank, post office etc.	48.32	2.70				51.02
5	Other scheme						
5.1	Dry ash extraction system (DAES package)				77.50	77.50	155.00
5.2	Continuous emission monitoring system (online monitoring instruments in		85.99	8.00			93.99



Sl. No	Name of the scheme	2014-15	2015-16	2016-17	2017-18	2018-19	Total
	Chimney)						
B	New Scheme						
6	Procurement of 1 nos. locomotive 1350 HP		853.20				853.20
7	Procurement of 5 nos of BEML BD-1 Dozers		806.40				806.40
8	Installation of CCTV system (12 nos.)		4.15		1.93	1.93	8.01
9	New Scheme of station						
9.1	Hydraulic operated arial tower wagon platform			18.00			18.00
9.2	Track upgradation of BTPS railway siding			54.00	108.00		162.00
9.3	Passenger lift in TG hall				14.40	14.40	28.80
9.4	Installation of CCTV system (20 nos.)				32.00	32.00	64.00
9.5	Strengthening of various structures in turbine and boiler areas of unit #4 & 5					80.00	80.00
10	Sustainable development						
10.1	Air Conditioning system based on screw Chiller				85.95	85.95	171.90
11	Total	6376.29	3306.04	448.29	319.78	291.78	10742.17

81. Accordingly, the capital cost approved in respect of the generating station for the period 2014-19 is as under:

	2014-15	2015-16	2016-17	2017-18	2018-19
	(₹ in lakh)				
Opening Capital Cost	50172.13	56548.42	59854.46	60302.74	60622.52
Add: Additional capital expenditure	6891.82	3512.14	481.32	342.93	302.93
Less: De-capitalization	515.53	206.10	33.03	23.15	11.15
Net Additional Capitalization	6376.29	3306.04	448.29	319.78	291.78
Closing Capital Cost	56548.42	59854.46	60302.74	60622.52	60914.30

Debt-Equity Ratio

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



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

Provided that:

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

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

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

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

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

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

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

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

83. Accordingly, the gross normative loan and equity amounting to ₹26801.60 lakh and ₹9943.42 lakh, respectively as on 31.3.2014 as considered in order dated 30.7.2016, has been considered as



gross normative loan and equity as on 1.4.2014. The normative debt equity ratio of 70:30 has been considered in the case of additional capital expenditure. This is subject to truing-up in terms of Regulation 8 of the 2014 Tariff Regulations.

Return on Equity

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

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

(2) *Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of 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 kilometers.

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



“Tax on Return on Equity

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

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

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

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

86. The petitioner has claimed return on equity considering the base rate of 15.5% and effective tax rate of 23.939%.

87. The respondent, BRPL and BYPL has submitted that the Commission may direct the petitioner to furnish complete details in the computation of effective tax rate of 23.9394% along with tax audit report for the year 2013-14. The respondent, BRPL has further submitted that the Commission may direct the petitioner to submit details of deferred tax liability and its treatment in the books of accounts for the period 2014-19. The respondent, BYPL has submitted that that the petitioner in Petition No. 285/GT/2014 (tariff of Auraiya GPS, for the period 2014-19), has considered the effective tax rate for the year 2014-15 as 22.5844% and hence the effective tax rate of 22.5844% may be considered for the period 2014-19 for the generating station. In response, the petitioner has submitted that the effective tax rate of 23.9394% in Petition No. 285/GT/2014 was calculated based on the estimated profit before tax of ₹795773.00 lakh relating to generation and estimated tax of ₹190503.00 lakh relating to generation to be paid for the year 2014-15 as per Regulation 25 (2) of 2014, Tariff Regulations. The petitioner has also submitted that the ROE based



on the effective tax rate based on actual tax paid has already been billed (based on the actual profit before tax and tax paid on generation income for the 2014-15) as per Regulation 25(3) of 2014, Tariff Regulations. The petitioner has submitted that the effective tax rate of 22.5844% was calculated based on the actual profit before tax of ₹827672.00 lakh relating to generation and actual tax paid of ₹186925.00 lakh relating to generation for the year 2014-15 as per regulation 25 (2) of 2014 Tariff Regulations.

88. The petitioner in its reply has submitted that it has considered the same tax rate for the period upto 31.3.2019 as considered for the year 2014-15. The petitioner has further submitted that an amount of ₹11396.00 lakh on account of deferred tax which materialized for the period upto 31.3.2009 has been billed and accounted as sales during the year 2014-15. The petitioner has also submitted that the deferred tax liability pertaining to the period 2009-14 has not been billed on the beneficiaries and thus no sales has been recognized on this account.

89. It is noticed that the Commission vide order dated 27.7.2016 in Petition No. 271/GT/2014 (tariff of kahalgaun STPS) for 2009-14 has observed as below:

“During the hearing of NTPC petitions, beneficiaries had raised an issue on the computation of effective tax rate. This issue being not confined to a single petition and being generic in nature as the issue is applicable to all NTPC petitions uniformly need deliberation. On this issue against specific query through ROP, the petitioner vide its affidavit dated 8.1.2016 in Petition no. 280/GT/2014 (Farakka STPS, Stage-III) has filed Auditor's Certificate regarding deposit of advance tax on generation business for the year 2014-15 as well as Income Tax return for the financial year 2014-15 (Assessment Year 2015-16). We have examined the documents submitted and observed that the regulation prescribe computation of effective tax rate on the basis of tax paid, still we deem it proper to allow grossing up on MAT rate considering the fact that the matter is getting decided in the year 2016-17. Accordingly, the effective tax rate (MAT) of 20.961% has been considered for the year 2014-15 and 21.342% for the year 2015-16 onwards up to the year 2018-19 for the purpose of grossing up of base rate of 15.5%. Accordingly, the rate of Return on Equity works out to 19.610% for the year 2014-15 and 19.705% for the year 2015-16 onwards. This is however, subject to true-up. Accordingly, return on equity has been worked out as under:”

90. In line with the above, we have considered the effective tax rate (MAT) of 20.961% for the year 2014-15 and 21.342% for the year 2015-16 onwards up to the year 2018-19 for the purpose of grossing up of base rate of 15.5%. Accordingly, the return on equity allowed for the period 2014-19 is as under:-



	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Notional Equity- Opening	9943.42	11856.31	12848.12	11486.88	8611.84
Addition of Equity due to additional capital expenditure	1912.89	991.81	134.49	95.93	87.53
Repayment of Equity (balance of depreciation after repayment of loan)	0.00	0.00	1495.72	2970.98	2535.21
Normative Equity-Closing	11856.31	12848.12	11486.88	8611.84	6164.16
Average Normative Equity	10899.86	12352.21	12167.50	10049.36	7388.00
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Tax Rate for the year	20.961%	21.342%	21.342%	21.342%	21.342%
Rate of Return on Equity (Pre Tax)	19.610%	19.705%	19.705%	19.705%	19.705%
Return on Equity(Pre Tax)	2137.46	2434.00	2397.61	1980.23	1455.81

Interest on Loan

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

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

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

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

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

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

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

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

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

(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the



costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.

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

(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.”

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

- (a) The gross normative loan of ₹26801.60 lakh (on cash basis) as on 1.4.2014 in order dated 30.7.2016 in Petition No. 302/GT/2014. In addition to this, loan component towards additional capitalization has been considered as per the approved debt equity ratio.
- (b) Cumulative repayment of loan approved as on 31.3.2014 in order dated 30.7.2016 in Petition No. 302/GT/2014 has been considered as on 1.4.2014.
- (c) Addition to normative loan on account of the admitted additional capital expenditure has been considered on year to year basis.
- (d) Depreciation allowed has been considered as repayment of normative loan during the respective year of the tariff period 2014-19. Proportionate adjustment has been made to the repayments on account of de-capitalizations considered in the additional capital expenditure approved above.
- (e) In line with the provisions of the regulations, 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 rate of interest as provided by the petitioner has been considered for the purpose of tariff. The necessary calculation for interest on loan is as under:



	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Gross opening loan	26801.60	31265.00	33579.23	33893.03	34116.88
Cumulative repayment of loan upto previous year	26801.60	29274.57	32221.24	33893.03	34116.88
Net Loan Opening	0.00	1990.43	1357.99	0.00	0.00
Addition due to additional capital expenditure	4463.40	2314.23	313.80	223.85	204.25
Repayment of loan during the year	2833.84	3090.94	1694.91	240.05	212.05
Less: Repayment adjustment on account of de-cap	360.87	144.27	23.12	16.21	7.81
Net Loan Closing	1990.43	1357.99	0.00	0.00	0.00
Average Loan	995.22	1674.21	678.99	0.00	0.00
Weighted Average Rate of Interest of loan(%)	10.1666	10.1683	10.1665	10.1641	10.1608
Interest on Loan	101.18	170.24	69.03	-	-

Depreciation

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

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

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

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

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

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



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

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

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

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

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

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

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

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

Balance useful life of the Generating station (Stage-II)

94. Since stage-I of the generating station is phased out and no R&M has been allowed in case of Stage-I, only life of Stage-II units may be extended by 10 years from the date of completion of major R&M i.e. from 1.4.2016.

95. The cumulative depreciation as on 31.3.2014 as considered in order dated 20.10.2016 in Review Petition No. 48/RP/2016 (in Petition No. 302/GT/2014) has been considered for the purpose of tariff. Further, depreciation has been calculated by applying the weighted average rate of



depreciation as on 1.4.2014 for the period 2014-19. Accordingly, depreciation has been computed as follows:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	50172.13	56548.42	59854.46	60302.74	60622.52
Add: Additional Capital Expenditure	6376.29	3306.04	448.29	319.78	291.78
Closing Capital Cost	56548.42	59854.46	60302.74	60622.52	60914.30
Average Capital Cost	53360.27	58201.44	60078.60	60462.63	60768.41
Depreciable value (excluding land)@ 90%	48024.25	52381.29	54070.74	54416.37	54691.57
Balance depreciable Value	7795.53	9732.44	8486.32	5665.53	2747.26
Rate of Depreciation	5.311%	5.311%	5.311%	5.311%	5.311%
Depreciation	2833.84	3090.94	3190.63	3211.03	2747.26
Cumulative depreciation at the end of the period (before adjustment)	43062.56	45739.80	48775.05	51961.88	54691.57
Less: Cumulative depreciation adjustment on account of de-capitalization	413.71	155.38	24.21	17.56	8.99
Cumulative depreciation (at the end of the period)	42648.85	45584.42	48750.85	51944.31	54682.58

O&M Expenses

96. Regulation 29 (1) (a) of the 2014 Tariff Regulations provides for the year-wise O&M expense norms for the generating station of the petitioner as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Norm for Unit 1 to 3	35.88	38.14	40.54	43.09	45.80
Norm for Unit 4 & 5	23.9	25.40	27.00	28.70	30.51

97. The petitioner has claimed O&M expense and the O&M expenses allowed in accordance with 2014 Tariff Regulations for the generating station are as under:-

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
	20263.80	21537.90	22893.90	24334.65	25867.20

Water Charges

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



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

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

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

99. In terms of the above regulation, water charges are to be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check of the details furnished by the petitioner. In the present petition, the petitioner has submitted the details of type of cooling water system, water consumption, rate of water charges as applicable for 2013-14. The petitioner has claimed water charges based on the expected water consumption of the generating station.

<i>(₹in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
1088.01	1157.10	1230.57	1308.72	1391.82

100. The respondent, BRPL has submitted that the Commission may direct the petitioner to furnish reasons for considering the escalation factor. The respondent, BRPL and BYPL have stated that water consumption shall be determined on normative basis based on the designed capacity less reduction on account of various water conservation measures and the rate may be on actuals as notified by various State Governments. The respondent, BRPL has submitted that the recovery of normative water charges shall be linked to actual generation limited to the scheduled generation done for beneficiaries. It has also submitted that the petitioner has considered the water charges as one month working capital expense under O&M expense and whereas in terms of Regulation 29(2) of the 2014 Tariff Regulations, the water charges and capital spares shall be allowed separately. The respondent has submitted that water charges shall not be considered as part of O& M expenses and shall not be part of Annual Fixed Charges and has therefore prayed that the water charges may not be considered for computation of interest of working capital. In response, the



petitioner has submitted that it has claimed water charges of ₹1088.01 lakh in 2014-15 on the basis of actual water charges paid during the year 2013-14. It has also submitted that water charges claimed for the period from 2015-16 to 2018-19 is on the basis of yearly escalation of 6.35% on the water charges claimed for the previous year and has not claimed any escalation in water charges during the year 2014-15 as compared to the year 2013-14. It has further submitted that the Commission in order dated 27.6.2016 in Petition No. 270/GT/2014 (tariff for Simhadri STPS Stage-I for 2014-19) has considered the water charges also under O&M expenses, and allow the same as claimed by the petitioner.

101. The Commission vide RoP dated 7.6.2016 had directed the petitioner to submit the details of the actual water consumption along with the rate of water charges for the last five years (i.e. 2009-14) along with relevant notification in support of the same. In response, the petitioner vide affidavit dated 29.8.2016 has submitted copy of letter dated 25.4.2011 and 18.7.2011 from the U.P. Irrigation Department, wherein it is noticed that allocation of water is 59.02 Cusec. It is further observed that there has been increase in the royalty from ₹1.50 lakh to ₹6.00 lakh and also an increase in water tax rate from ₹3.12 per 1000 cubic feet to ₹12.48 per 1000 cubic feet. The details of water charges furnished by the petitioner for the period 2009-14 is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12 (before 15.7.2011)	2011-12 (after 15.7.2011)	Total 2011-12	2012-13	2013-14
Water consumption (Cusec)	48.6	48.6	17.09	41.93	59.02	59.02	59.02
Rate (Lakh per cusec)	1.5	1.5	1.5	6		6	6
Water Charges	72.9	72.9	25.635	251.58	277.215	354.12	354.12
Desilting and other maintenance charges	0	0			433.16	200.35	277.59
Annual maintenance charges for M&R Cross Regu Agra Canal	0	0			0	91.1	83.91



	2009-10	2010-11	2011-12 (before 15.7.2011)	2011-12 (after 15.7.2011)	Total 2011-12	2012-13	2013-14
Gate repair	0	0			0	0	90.36
Water charges (township)	0	0			20.96	88.65	49.75
Water tax							
Cusec				59.02	59.02	59.02	59.02
Cubic feet				1322202807	1322202807	1861254720	1861254720
Rate (₹ per 1000 cubic feet)				12.48	12.48	12.48	12.48
Water tax				165.01	165.01	232.28	232.28
Total expenditure towards water charges	72.90	72.90			896.35	966.50	1088.01

102. It is noticed that the petitioner has claimed water charges in 2014-15 which is same as the water charges for the year 2013-14. The total water charges claimed by the petitioner in 2014-15 is based on the water consumption and the water charges paid during 2013-14 has been escalated at the rate of 6.35% as per escalation rate considered for escalation of O&M norms specified by the Commission for the period 2014-19. From the above table, it is noticed that there is abnormal increase in water charges over the tariff period 2009-14 on account of desilting and other maintenance charges, annual maintenance charge, gate repair and water charges (township). It is also observed that expenditure like desilting and other maintenance charges, annual maintenance charge, and gate repair are in the nature of O&M expenses and shall be met from the normative O&M expenses allowed for the generating station. Therefore, we are not inclined to consider the expenditure like desilting and other maintenance charges, annual maintenance charge, and gate repair under water charges. The total water charges of ₹675.05 lakh is inclusive of (₹354.12 lakh towards Royalty + ₹88.65 lakh towards Township + ₹232.28 lakh towards Water tax) in 2012-13 and ₹636.05 (₹354.12 lakh towards Royalty + ₹49.65 lakh towards Township + ₹232.28 lakh towards Water tax). The escalation rate of 6.35% considered by the petitioner is not prudent as the water charges are dependent on the royalty rate and water tax, which is non escalable. In line with the



above observations, we have considered the water charges of ₹636.05 lakh for all the years of the period 2014-19 without any escalation.

103. Based on the above, the total O&M expenses including water charges as allowed for the purpose of tariff is as under:

	<i>(₹ in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses as allowed	20263.80	21537.90	22893.90	24334.65	25867.20
Water charges as allowed	636.05	636.05	636.05	636.05	636.05
Total O&M Expenses as allowed(including Water charges)	20899.85	22173.95	23529.95	24970.70	26503.25

104. The water charges allowed as above is subject to truing -up at the end of the tariff period.

Enhancement of O&M Expenses

105. The petitioner has submitted that the salary / wage revision of the employees of the petitioner will be due with effect from 1.1.2017. It has also submitted that the O&M expenses claimed is based on 2014, Tariff Regulations and the escalation of 6.35% provided in the O&M would not cover the enhanced employee cost w.e.f 1.1.2017. The petitioner, has therefore prayed for grant of liberty by the Commission to seek enhancement in the O&M expenses towards increased salary on account of salary revision due from 1.1.2017, based on the actual payments whenever paid by it. The matter has been examined.

106. With respect to petitioner's submission regarding the wage revision the respondent, BRPL has submitted that the Commission has already decided the terms and conditions of tariff for the tariff period 2014-19 and any further increase in employee cost on account of pay revision of the employees of the Public Sector Undertakings due to wage revision must be taken care by improvement in their productivity levels by the petitioner company so that the beneficiaries are not unduly burdened over and above the provisions made in the Tariff Regulations, 2014. The respondent, BRPL has requested the Commission to direct petitioner for providing the actual details of O&M expenses clearly bifurcating and elaborating the employee expenses, A&G expenses, and



R&M expenses. The respondent, BRPL has submitted that the WPI has reduced from 8% to -1% (approx) and CPI has reduced from 10% to 5% (approx) and therefore the actual O&M expense must be lower than allowed to the petitioner for the tariff period 2014-19. The respondent, BRPL has further submitted that there is no such regulation which provides the variation in O&M expenses to be allowed. Therefore, requested the Commission not to allow any upward variation in normative O&M expenses.

107. In response the petitioner has submitted that the Commission, in the Statement of Reasons of the 2014 Tariff Regulations has stated that 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. The petitioner further submitted that keeping in view the scheduled wage revision of employees from 1.1.2017 onwards, the petitioner has prayed before the Commission to allow the relief.

108. The petitioner further submitted that the salary revision for NTPC employees is due with effect from 1.1.2017. Therefore, the O&M data submitted by the Petitioner to the Commission for fixation of O&M norms does not include any increase in employees cost, which is going to be incurred in future on account of pay revision. The petitioner further submitted that in view of the above, it is prayed to the Commission to consider the effect of pay revision while determining the tariff of the instant station. As the contentions raised by the Respondent is not in consonance with views of the Commission therefore liable to be rejected.

109. Accordingly, the prayer of the petitioner for enhancement of O&M expenses if any, due to pay revision may be examined by the Commission, on a case to case basis, subject to the implementation of pay revision as per DPE guidelines and the filing of an appropriate application by the petitioner in this regard.



Capital spares

110. The petitioner has not claimed any capital spares during the period 2014-19. Accordingly, the same has not been considered in this order.

Operational Norms

111. The operational norms in respect of the generating station claimed by the petitioner are as under:

Target Availability (%)	83.00
Heat Rate (kcal/kWh)	2750.00
Auxiliary Energy Consumption (%)	8.50
Specific Oil Consumption (ml/ kWh)	0.50

112. The petitioner has stated that the Commission has considered operating norms of various stations of the petitioner's company based on their performance. It has also prayed the Commission may grant liberty for seeking relaxation in operating norms on account of lower power demand and lower PLF, as per the actual scenario and PLF during the period 1.4.2014 onwards.

113. The respondent, BRPL has submitted that since the tariff of the generating station is very expensive it has been given less priority for scheduling as per principle of Merit Order Despatch it has therefore, requested the Commission to tighten the GHR norms as this would enable the discom to utilize this plant to its maximum capacity. The respondent, has also submitted that petitioner's prayer for relaxation of Operating norms on account of low power demand is not a ground for review of the 2014 Tariff Regulations. Accordingly, the respondent, has prayed the Commission may reject the prayer of the petitioner. In response, the petitioner has submitted that the operational norms like Heat rate, Auxiliary Power Consumption, Specific Fuel Oil Consumption are significantly affected by reduction in PLF. It has also submitted that the norms decided by the Commission were based on performance of the generating stations during the earlier period (2008-13) and even at the time of notification of the 2014 Tariff Regulations, some of the generating stations were unable to achieve these parameters.



114. The operational norms claimed by the petitioner are discussed as under:

Normative Annual Plant Availability Factor (NAPAF)

115. Regulation 36 (A) (a) of the 2014 Tariff Regulations provides as under:

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

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

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

116. The respondent, BRPL and BYPL has submitted that the petitioner has unilaterally implemented the above Regulations and has reduced the NAPAF to 83% without submitting any details of coal shortage. It has further submitted that the petitioner has not sought any relaxation in NAPAF and has claimed recovery of fixed charges at 85% NAPAF. Therefore, the respondent, BRPL has prayed that the Commission may direct the petitioner to consider NAPAF of 85% for billing purposes and refund the additional amount recovered corresponding to capacity charges along with the carrying cost at the rate specified under the 2014 Tariff Regulations. In response, the petitioner has submitted that with an intent to mitigate the risk of recovery of fixed charges by the generators, the Commission had decided, the fixed charges will be recovered at availability of 83% in view of shortage of coal and uncertainty of assured coal supply on sustained basis and these shall be reviewed after 3 years from 1.4.2014. The petitioner has further submitted that the Commission has considered the Target Availability of 83% in order dated 27.6.2016 in Petition No. 270/GT/2014 for Simhadri STPS Stage-I in line with the claim of petitioner.

117. We have examined the matter. The petitioner has considered the Target Availability norm of 85% during the period 2014 - 19. In terms of the above Regulations, Target Availability of 83% is considered for the period 2014-15 to 2016-17 and 85% for the period 2017-18 and 2018-19.



Heat Rate (kCal/kWh)

118. Regulation 36(C)(a)(ii) of the 2014 Tariff Regulations, provides Gross Station Heat Rate of 2750 kCal/kWh for this station. Hence, the heat rate considered by the petitioner is as per norms and is allowed.

Auxiliary Energy Consumption

119. The petitioner has claimed Auxiliary Energy Consumption at 8.50% during the period 2014-19. Regulation 36(E)(b) of the 2014 Tariff Regulations, provides for Auxiliary Energy Consumption of 8.50% for this generating station. Accordingly, the Auxiliary Energy Consumption considered is 8.50% as per the norms and the same is allowed for the purpose of tariff.

Specific Oil Consumption

120. Regulation 36(D)(a) of the 2014 Tariff Regulations, provides secondary fuel oil consumption of 0.50 ml/kWh for coal-based generating station and the same has been allowed for 2014-19 tariff period.

Interest on Working Capital

121. Sub-section (1) of clause (1) of Regulation 28 of the 2014 Tariff Regulations provides as under:

“28. Interest on Working Capital:

(1) The working capital shall cover

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

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

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



(iii) Cost of secondary fuel oil for two months for generation corresponding to thenormative annual plant availability factor, and in case of use of more than onesecondary 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.

Fuel Components and Energy Charges in working capital

122. The petitioner has claimed cost for fuel components in working capital based on the average fuel data for preceding three months of January, 2014, February, 2014 and March, 2014 and has considered the same for each year of the tariff period as under:

(₹ in lakh)						
Sl. No.		2014-15	2015-16	2016-17	2017-18	2018-19
1A	Cost of Coal for Stock for 30 days	17083.66	17130.47	17083.66	17083.66	17083.66
1B	Cost of Coal for Generation for 30 days	17083.66	17130.47	17083.66	17083.66	17083.66
2	Cost of Main Secondary Fuel Oil for 2 months	284.59	285.37	284.59	284.59	284.59

123. The respondent, BYPL has submitted that the petitioner has not furnished documentary evidence that it has capacity to store coal stock for 30 days. The respondent, BYPL has further submitted that in event NAPAF is less than 85% then interest on working capital may be limited to actual generation otherwise beneficiaries will have to unnecessary bear the additional cost on account of interest on working capital even when unit is not available for generation. The respondent, BRPL has submitted that the petitioner has not provided the details of stock storage neither in bills nor in any declarations and therefore requested the Commission to direct the petitioner to submit actual details of the cost of coal for all its generating stations as per the 2014 Tariff Regulations.



124. The respondent, BRPL and BYPL has submitted that petitioner should provide blending ratio of Domestic Coal and imported coal for the tariff period 2014-19 so that in case of any variation in the cost as well as ratio, prior permission of beneficiary shall be obtained as per 2014 Tariff Regulations. The respondent, BRPL and BYPL has requested the Commission to direct the petitioner to provide the status of Fuel Supply Agreement (FSA) and actual coal supply under FSA so that beneficiary permission shall be obtained by the petitioner before procuring imported coal or otherwise resulting in increase in ECR..

125. The respondent, BRPL has submitted that the petitioner in his petition in Form 15 has stated that the petitioner does not have infrastructure for measuring GCV of Coal on 'as received' basis which is not in accordance with the 2014 Tariff Regulations. The respondent further submitted that the petitioner may supply the GCV in accordance with the order dated 25.1.2016 in Petition No. 283/GT/2014 specifying GCV of coal on received basis from the loaded wagons at the generating station and based on this GCV, the computation of energy from 1.4.2014 shall be allowed. The respondent has further submitted that the GCV as billed by the Coal Company may be used, in case the petitioner is unable to supply the GCV on received basis, from the loaded wagons at the generating station.

126. The respondent, BYPL has submitted that GCV as billed would be a close replica of GCV as received till the petitioner puts in place infrastructure to determine GCV on 'as received' basis. The respondent, has submitted that billing done by the petitioner from 1.4.2014 onwards is required to be revised retrospectively and therefore, the Commission may direct the petitioner to revise the bills raised on the basis of GCV as billed or alternatively, the Commission may consider some benchmark say 0.25% of billed GCV as normative allowance for revising the previous bills. Further, the said respondent, has prayed the Commission to direct the petitioner to furnish methodology for determination of GCV as fired along with details of current infrastructure like lab, equipment, etc.



127. . In response the petitioner has submitted that it has already submitted the details of coal storage capacity of BTPS along with the petition. Further, the petitioner has submitted that it is providing Form-15 every month to all its beneficiaries including the respondent which inter alia consist of blending ratio of domestic coal with imported coal as well. In response, the petitioner has submitted that GCV quoted by the respondent BYPL pertains to the period of January – March, 2014, which is prior to the period 2014-19. It is however submitted that during the period 2009-14, GCV measurement on 'As fired basis' was specified under 2009 Tariff Regulations and the same has been used by the petitioner for calculation of fuel cost for working capital requirement. The petitioner has submitted that the GCV of coal as loaded by the Coal Companies, based on which the bills are raised by the Coal Companies on purchase of coal are generally found to be different from the GCV as measured on 'as received basis' The petitioner submitted that the aspect on the grade slippage from the time of loading till the measurement on 'as received basis' has been a subject matter of representation to the Government of India and has also been a subject matter of the proceedings before the Competition Commission of India. The petitioner has also submitted that till an acceptable and satisfactory resolution of the above aspects, there is no option but to proceed on the basis that there is a grade slippage in regard to the GCV measured at the time of loading and measured at the time on 'as received basis'. The petitioner has stated that on the issue of grade slippage, petitioners initiative in this regard has resulted in formation of a high level committee comprising of Director (Operation) the petitioners company, Director (Marketing) CIL as Co Chairman and other stakeholders such as the Railways, CEA, & other State generating station to address the issue. The petitioner has further submitted that it has also liaised with CIL on this issue and consequently, third party sampling of GCV at the mine end has been introduced to ensure greater transparency in the system. In view of the above the petitioner submitted that the cost of any slippage in the grade of coal between the loading point and petitioners generating stations is not to be borne by generators.

128. The Commission had directed the petitioner to submit the GCV of coal on "as received" basis. In response, the petitioner vide affidavit dated 22.10.2014 has submitted the auditor certified



Form 15 and Form 15A for the period from January to March, 2014, wherein it has stated that the petitioner does not have infrastructure for measuring the GCV as received basis. It is observed that in Form-15, against the head GCV of domestic coal as per bill of Coal Company, the petitioner has submitted that GCV of washed coal/washery grade is not available. The Commission directed the petitioner to submit the details of GCV of coal as billed by the coal company and in response, the petitioner vide affidavit dated 30.7.2016 has submitted that unlike unwashed coal/ raw coal, the gradation and accordingly pricing of washed coal and washery grade coal supplied by Coal India Limited (CIL) is based on Ash content. The petitioner has also submitted that in case of washery grade coal, 35% ash content is taken as ceiling and below this ceiling the washery grade coal is categorized under different grades W1, W2, W3, W4 etc. based on the band of the ash content in percentage. The petitioner has further submitted that once the grade is decided, CIL raises bill on the generators as per price notification of CIL from time to time and therefore CIL do not indicate any GCV for washed/ washery grade coal in its invoices. The petitioner has also submitted that since a significant quantum of washed/washery grade coal is received at the generating station, it is not feasible for it to calculate the weighted average GCV of the total coal billed by the CIL. The petitioner vide affidavit dated 29.8.2016 has submitted the details of GCV for washed/ washery coal, derived from the Mazumdar's empirical formula as follows:

	(kCal/kg)		
	January,2014	February,2014	March,2014
Weighted average GCV as billed by coal company	5333.30	5274.70	5508.40

129. The petitioner has claimed Energy Charge Rate (ECR) of 273.120 Paise/kWh based on the weighted average price & GCV of coal (as fired basis) & Oil procured and burnt for the preceding three months i.e. January, 2014, February, 2014 and March, 2014. However, in terms of the 2014 Tariff Regulations, fuel components and ECR is to be worked out and are to be allowed based on the price and GCV of primary fuel on 'as received' basis for the preceding three months i.e. January, February and March, 2014 respectively.



130. The issue of “as received” GCV for computation of energy charges was challenged by NTPC and other generating companies through writ petition in the Hon'ble High Court of Delhi. The writ petition was heard on 7.9.2015 and Hon'ble High Court of Delhi had directed that the Commission shall decide the place from where the sample of coal should be taken for measurement of GCV of coal on as received basis within 1 month on the request of petitioners.

131. As per the directions of the Hon'ble High Court, the Commission vide order dated 25.1.2016 in Petition No. 283/GT/2014 has decided as under:

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

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

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

132. It is observed that the petitioner has not placed on record the GCV of coal on “as received” basis though the petitioner was statutorily required to furnish such information with effect from 1.4.2014. In compliance with the direction of the Hon'ble High Court of Delhi, the Commission in its order dated 25.1.2016 in Petition No. 283/GT/2014 has clarified that the measurement of GCV of coal on as received basis shall be taken from the loaded wagons at the unloading point either manually or through the Hydrolic Augur. The petitioner has not submitted the required data regarding measurement of GCV of coal in compliance with the directions contained in the said order dated 25.1.2016. The present petition cannot be kept pending till the petitioner submits the required information.



133. The Commission in various tariff orders, pertaining to determination of tariff, viz. Simhadri Stage-I (order dated 27.6.2016 in Petition No. 270/GT/2014), Vindhyachal STPS Stage-II (order dated 6.2.2017 in Petition No. 327/GT/2014), Mauda Stage-I (order dated 11.2.2017 in Petition No. 328/GT/2014), Ramagundam Stage-I & II (order dated 24.1.2017 in Petition No. 292/GT/2014), Kahalgaon stage-II (order dated 21.1.2017 in Petition No. 283/GT/2014), Rihand STPS Stage-III (order dated 6.2.2017 in Petition No. 372/GT/2014) etc., for the period 2014-19 had allowed fuel components and 2 months of Energy Charges in working capital considering the GCV of coal on 'as billed' basis and had allowed the adjustment formulae for total moisture as under:

$$\frac{\text{GCV X (1-TM)}}{(1 - \text{IM})}$$

Where: GCV=Gross Calorific value of coal
 TM=Total moisture
 IM= Inherent moisture

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

135. In view of this, Interest on Working capital (IWC) is allowed without any fuel components and 2 months Energy Charges in Working Capital. We direct the petitioner to obtain the GCV 'as billed' from the coal supplier and work out the IWC components.

Maintenance spares

136. Maintenance spares in the working capital claimed by the petitioner, are as under:

<i>(₹ in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
4270.36	4539.00	4824.89	5128.67	5451.80



137. The maintenance spares allowed in terms of Regulation 28(1)(a)(iv) of the 2014 Tariff Regulation are as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
4179.97	4434.79	4705.99	4994.14	5300.65

Receivables

138. Receivables equivalent to two months of capacity charge and energy charges has been worked out and allowed as under:

(₹ in lakh)					
	2014-15	2015-16	2016-17	2017-18	2018-19
*Secondary fuel oil (two months)	284.59	285.37	284.59	291.45	291.45
Fixed Charges (two months)	4577.76	4909.52	5143.07	5318.97	5421.78
Total	4862.36	5194.89	5427.66	5610.42	5713.23

* The Commission has not allowed the fuel charges as a part of the energy charges as discussed in Para 134 and 135. However the expenditure on account of Secondary fuel oil component has been considered as a part of Receivables.

O&M Expenses

139. O&M expenses for 1 month claimed by the petitioner is in accordance with above Regulations and is allowed as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
1741.65	1847.83	1960.83	2080.89	2208.60

Secondary Fuel Oil

140. The Petitioner has claimed the cost of secondary fuel oil component as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
284.59	285.37	284.59	284.59	284.59

141. The cost of secondary fuel oil component allowed in accordance with the 2014 Tariff Regulations for the generating station are as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
284.59	285.37	284.59	291.45	291.45



Month to Month Energy Charges

145. Clause 6 sub-clause (a) of Regulation 30 of the 2014 Tariff Regulations provides for computation and payment of Capacity Charge and Energy Charge for thermal generating stations:

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

(a) For coal based and lignite fired stations

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

Where,

AUX = Normative auxiliary energy consumption in percentage.

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

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

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

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

LC = Normative limestone consumption in kg per kWh.

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

LPPF = Weighted average landed price of primary fuel, in Rupees per kg

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

147. The petitioner has been directed in order dated 19.2.2016 in Petition No. 33/MP/2014 to introduce helpdesk to attend to the queries of the beneficiaries with regard to the Energy Charges. Accordingly, contentious issues if any, which arise regarding the Energy Charges, should be sorted out with the beneficiaries at the Senior Management level.

Application Fee and Publication Expenses

148. The petitioner has sought the reimbursement of filing fee and also the expenses incurred towards publication of notices for application of tariff for the period 2014-19. The petitioner has



deposited the filing fees for the period 2014-16 in terms of the provisions of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012. Accordingly, in terms of Regulation 52 of the 2014 Tariff Regulations and in line with the decision in Commission's order dated 5.1.2016 in Petition No. 232/GT/2014, we direct that the petitioner shall be entitled to recover pro rata, the filing fees and the expenses incurred on publication of notices directly from the respondents on submission of documentary proof. The filing fees for the remaining years of the tariff period 2016-19 shall be recovered pro rata after deposit of the same and production of documentary proof.

149. The annual fixed charges approved for the period 2014-19 as above are subject to truing-up in terms of Regulation 8 of the 2014 Tariff Regulations.

150. Petition No. 288/GT/2014 is disposed of in terms of the above.

Sd/-
(Dr. M.K.Iyer)
Member

Sd/-
(A. S. Bakshi)
Member



**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN FOR
TARIFF PERIOD 2014-19**

	<i>(₹ in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Net opening loan	7212.50	6962.50	6162.50	5362.50	4562.50
Add: Addition during the period	0.00	0.00	0.00	0.00	0.00
Less: Repayment during the period	250.00	800.00	800.00	800.00	800.00
Net Closing Loan	6962.50	6162.50	5362.50	4562.50	3762.50
Average Loan	7087.50	6562.50	5762.50	4962.50	4162.50
Rate of Interest (%)	10.1666%	10.1683%	10.1665%	10.1641%	10.1608%
Interest	720.56	667.29	585.84	504.39	422.94

