

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 372/GT/2014

Coram:

Shri Gireesh B. Pradhan, Chairperson

Shri A.K. Singhal, Member

Shri A.S. Bakshi, Member

Dr. M.K. Iyer, Member

Date of Order: 6.2.2017

In the matter of

Petition for approval of tariff of Rihand Super Thermal Power Station Stage-III (1000 MW) for the period from 1.4.2014 to 31.3.2019

In the matter of

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

...Petitioner

Vs

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

2. Jaipur Vidyut Vitran Nigam Limited,
Vidyut Bhawan, Janpath,
Jaipur- 302005

3. Ajmer Vidyut Vitran Nigam Limited,
Old Power House, Hathi Bhata,
Jaipur Road, Ajmer

4. Jodhpur Vidyut Vitran Nigam Limited,
New Power House, Industrial Area,
Jodhpur

5. Tata Power Delhi Distribution Limited,
Grid sub-station, Hudson Road,
Kingsway Camp, Delhi-110009

6. BSES Rajdhani Power Limited,
BSES Bhawan, Nehru Place,
New Delhi -110019.

7. BSES Yamuna Power Limited,
Shakti Kiran Building,
Karkardooma, Delhi-110092



8. Haryana Power Purchase Centre,
Shakti Bhawan, Sector -VI,
Panchkula, Haryana-134109

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

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

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

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

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

.....Respondents

Parties present:

Shri Ajay Dua, NTPC
Shri Neeraj Kumar, NTPC
Shri Bhupinder Kumar, NTPC
Shri Rajeev Choudhary, NTPC
Shri Nishant Gupta, NTPC
Shri T. Vinod Kumar, NTPC
Shri R. B. Sharma, Advocate, BRPL
Shri Manoj Kumar Sharma, Advocate, Rajasthan discoms
Shri Pradeep Misra, Advocate, Rajasthan discoms
Shri Dhananjaya Mishra, Advocate, TPDDL
Shri Varun Shankar, Advocate, TPDDL
Shri Manish Garg, UPPCL & BYPL
Shri Shekhar Sakhani, BYPL
Shri Sameer Singh, BYPL
Shri Kanishk, BRPL

ORDER

This petition has been filed by the petitioner, NTPC Limited for determination of tariff of Rihand Stage-III (2 x 500 MW) ('the generating station') for the period from 1.4.2014 to 31.3.2019 based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 ('the 2014 Tariff Regulations') .



2. The generating station with a capacity of 1000 MW comprises of two units of 500 MW each. The dates of the commercial operation of the units of the generating station are as under:

Unit-I	19.11.2012
Unit-II	27.3.2014

3. The Commission by order dated 14.3.2016 in Petition No. 205/GT/2013 had determined the capital cost and the annual fixed charges of the generating station from the dates of COD of Units I and II to 31.3.2014. Aggrieved by the said order dated 14.3.2016, the petitioner had filed Review Petition (Petition No. 25/RP/2016) and the Commission, after rectification of the errors apparent on the face of record, revised the capital cost and the annual fixed charges of the generating station by order dated 27.12.2016, as under:

Capital Cost

	(₹ in lakh)		
	2012-13	2013-14	
	19.11.2012 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2014 to 31.3.2014
Opening Capital Cost (on cash basis)	188615.55	228239.20	467130.67
IDC claimed	16932.00	-	51047.00
FC claimed	820.00	-	1004.00
FERV claimed	7967.00	-	27148.00
Hedging cost claimed	0.00	-	0.00
Interest on Normative loan claimed	641.78	-	1722.61
Total IDC, FC, FERV and Hedging cost	26360.78	-	80921.61
Hard cost allowed (1-2)	162254.77	-	386209.06
Add: IDC allowed (including Financial charges)	17751.21	-	50346.23
Add: FERV allowed	7967.00	-	27148.00
Add: Interest on Normative loan allowed	641.78	-	1655.94
Total IDC, FC, FERV allowed	26360.00	-	79150.16
Opening Capital cost allowed including IDC, FC and FERV	188614.76	228239.20	465359.23
Add: Additional capital expenditure allowed	22033.11	63442.01	28.11
Add: Discharge of liabilities	17591.33	192.70	1655.69
Closing Capital cost	228239.20	291873.91	467043.03



Annual Fixed Charges

(₹ in lakh)

	2012-13	2013-14	
	19.11.2012 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2014 to 31.3.2014
Return on Equity	14346.45	18319.16	32840.61
Interest on Loan	12175.36	14219.67	25592.65
Depreciation	11171.89	14619.58	25871.74
Interest on Working Capital	3155.22	3396.32	6611.24
O&M Expenses	6528.00	6902.00	13804.00
Cost of secondary fuel oil	2270.99	2270.99	3983.04
Total	49647.92	59727.73	108703.28

4. The petitioner has sought approval of tariff in accordance with the provisions of 2014 Tariff Regulations. The petitioner has filed the additional information in compliance with the directions of the Commission and has served copies on the respondents. Replies have been filed by the respondents, UPPCL, Discoms of Rajasthan (AVVNL, JVVNL and JdVVNL), BYPL and BRPL and the petitioner has filed its rejoinder to the said replies. We now proceed to examine the claim of the petitioner on prudence check, based on the submissions and the documents available on record, as stated in the subsequent paragraphs.

Capital Cost as on 1.4.2014

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

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

“9(3) The Capital cost of an existing project shall include the following: (a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;

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

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



6. The petitioner has claimed the annual fixed charges based on opening capital cost of ₹470005.00 lakh as on 1.4.2014. Thereafter, the capital cost was revised due to inadvertent inclusion of loan ERV in the capital cost and accordingly, the petitioner has claimed the capital cost of ₹470418.74 lakh as on 1.4.2014. The Commission by order dated 14.3.2016 in Petition No. 205/GT/2013 had determined the tariff of the generating station for the period 2012-14 based on the capital cost of ₹466946.55 lakh as on 31.3.2014 and the same was revised to ₹467043.03 lakh as on 31.3.2014 vide order dated 27.12.2016 in Petition No.25/RP/2016. Accordingly, in terms of the above regulations, the opening capital cost of ₹467043.03 lakh as on 1.4.2014 has been considered for determination of tariff for the period 2014-19.

Additional Capital Expenditure

7. Clauses (1) and (3) of Regulation 14 of the 2014 Tariff Regulations provides as under:

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

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

(ii) Works deferred for execution;

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

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

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

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

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



- (i) *Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law;*
- (ii) *Change in law or compliance of any existing law;*
- (iii) *Any expenses to be incurred on account of need for higher security and safety of the plant as advised or directed by appropriate Government Agencies or statutory authorities responsible for national security/internal security;*
- (iv) *Deferred works relating to ash pond or ash handling system in the original scope of work;*
- (v) *Any liability for works executed prior to the cut-off date, after prudence check of the details of such 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 50 technology, up-gradation of capacity for the technical reason such as increase in fault level;*
- (viii) *In case of hydro generating stations, any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the generating company) and due to geological reasons after adjusting the proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation;*
- (ix) *In case of transmission system, any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement due to obsolescence of technology, replacement of switchyard equipment due to increase of fault level, tower strengthening, communication equipment, emergency restoration system, insulators cleaning infrastructure, replacement of porcelain insulator with polymer insulators, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system; and*
- (x) *Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receiving system arising due to non-materialisation of coal supply corresponding to full 51 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.”

8. The break-up of the projected additional capital expenditure claimed by the petitioner for the period 2014-19 is as under:

(₹ in lakh)					
Sl. No.	Head of Works / Equipments	2014-15	2015-16	2016-17	2017-18
1	Strengthening of MGR road from village Sirsoti to Ganyari	1200.00	700.00	-	-
2	Construction of roads in Stage III area	35.00	-	-	-
3	Main Plant, CW System, Offsite Civil Works and Chimney & Chimney Elevator Package	2500.00	1500.00	700.00	
4	Construction of Record Room near Administration Building	3.00	-	-	-
5	Construction of Boundary Wall along with road in Khairi area near MGR bulb	4.00	-	-	-
6	Civil Work for Central Repair Facility	1000.00	100.00	-	-
7	Diversion of East Nallah & rerouting of plant drainage and re-modelling of South & West Nallah	265.00	-	-	-
8	Condensate polishing plant	262.00	-	-	-
9	Air Conditioning Package	100.00	-	40.00	-
10	Ash Handling System package	1619.00	-	1486.00	-
11	Laying of Ash pipe line	11.00	-	-	-
12	Cooling Water System Mandatory Spares	42.00	-	-	-
13	Fire detection and protection system	1500.00	-	124.00	-
14	Procurement of Digital Insulation Tester	9.00	-		-
15	MV Switchgear Package	55.00	-		-
16	Main Equipment for Outdoor Transformers	224.00	-		-
17	Station C&I	325.00	-		-
18	LT Switchgears & LT bus ducts Package	180.00	-	7.00	-
19	Power transformer package	1139.00	-	-	-
20	Bi-Directional Motorised Rotator	12.00	-	-	-
21	Structure steel support	24.00	-	-	-
22	Supply, Installation & Commissioning of IP based CCTV system for Stage – III area	90.00	-	-	-
23	Gang operated Hydraulic Jacks for generator	10.00	-	-	-
24	Procurement of Portable dissolve Oxygen Meter	2.00	-	-	-



25	Procurement of Hydraulic Pipe Bending Machines & Test pump.	3.00	-	-	-
26	Radial drilling machine Model No-BR-615	13.00	-	-	-
27	Supply, Installation and Commissioning of Portable Drilling Machine with Swivelling Head Cap-50 MM for Central repair facility	36.00	-	-	-
28	Central Repair Facility Equipments	685.00	2869.00	229.00	-
29	Procurement of Submersible Dewatering Pump sets	4.00	-	-	-
30	Electrification of Project office, Fill pack shed and new colony gate.	8.00	-	-	-
31	RFID based Automatic Vehicle Identification and access control system.	10.00	-	-	-
32	11KV Switchgear extension for Construction Power	21.00	-	-	-
33	Rerouting of 11kV Overhead line	4.00	-	-	-
34	Construction of D1 Type Quarters		6500.00	-	-
35	Construction of Roads, Drainages & Pavement works		167.00	-	-
36	Railway Siding and S&T System Augmentation and Associated Electrical System Package	-	4400.00	-	-
37	Supply of Main equipment 700 NB Pipe for AWRS	-	835.00	310.00	-
38	Additional Wagons for Stage-3	-	5500.00	-	-
39	Augmentation of Township Power Supply	-	-	169.00	-
40	11/132 kV Switchgear augmentation of Construction Power switchyard	-	-	94.00	-
40	Consultancy + Augmentation of Water Supply, Sewerage and Storm Water drainage system for Township	-	-	200.00	-
41	Township Non residential Buildings	-	-	1592.00	-
	Total	11394.00	22570.00	4951.00	0.00
42	SG Main Plant Spares	1465.00	-	-	-
43	TG Mandatory Spares	606.00	2724.00	-	-
44	Switchyard - Mandatory Spares	163.00	-	-	-
45	Bus Duct mandatory Spares	9.00	-	-	-
46	Supply of Mandatory Spares for Diesel locomotive 06 Nos (supply portion)	117.00	-	-	-
47	Additional capitalisation of Spares-ST-3	-	2000.00	8500.00	-
	Total	2360.00	4724.00	8500.00	0.00
48	Ash Dyke for Stage-III	-	--	-	7281.00
	Total	13754.00	27294.00	13451.00	7281.00



Works deferred for execution- Regulation 14(1)(ii)

9. The petitioner has claimed total projected additional capital expenditure of ₹11394.00 lakh in 2014-15, ₹22570.00 lakh in 2015-16 and ₹4951.00 lakh in 2016-17 (vide sl Nos 1 to 41 of the table under para 16 above) in respect of works within the original scope of work and deferred for execution within the cut-off date of the generating station. The respondent, BRPL has submitted that the total additional capital expenditure of ₹38875 lakh (₹11353 lakh in 2014-15, ₹22570 lakh in 2015-16 and ₹4951 lakh in 2016- 17 claimed in respect of works under original scope of works and deferred for execution upto the cut-off date under Regulation 14(1)(ii) of the 2014 Tariff Regulations do not contain any details of the asset wise/work wise included in the original scope of work along with estimates of expenditures, liabilities recognized to be payable at a future date and the works deferred for execution. The respondent has further submitted that as the petitioner has not submitted the required information in terms of Regulation 9(1) of the 2009 Tariff Regulations, the entire projected additional capital expenditure may be rejected. In response, the petitioner has submitted that the item-wise details of the projected additional capital expenditure claimed for the period 2014-19. It has stated that the originally estimated cost asset-wise details vis-à-vis actual capital expenditure with auditor certificate for the period from COD of Unit-I to 31.3.2014 had been submitted in Petition No. 205/GT/2013 which was disposed of vide order dated 14.3.2016. The petitioner has further clarified that the projected additional capital expenditure claimed for the period 2014-19 and the capital cost allowed by the Commission as on 31.3.2014 in order dated 14.3.2016 for the generating station is well within the original estimated cost. Accordingly, it has prayed that the contentions of the respondent are misplaced and liable to be rejected. The respondents (discoms of Rajasthan) have submitted that the tariff may be determined in terms of the provisions of the 2014



Tariff Regulations and no additional cost may be allowed to the petitioner for recovery from the beneficiaries.

10. We have examined the matter. The COD of the generating station is 27.3.2014 and accordingly in terms of Regulation 3(13) of the 2009 Tariff Regulations, the cut-off date of the generating station is 31.3.2017 (COD in the last quarter of the year 2013-14). Regulation 14(1)(ii) of the 2014 Tariff Regulations provides for the capitalization of expenditure after the COD and upto the cut-off date in respect of works within the original scope of work and deferred for execution. On prudence check, it is observed that the projected additional capital expenditure claimed for works mentioned at Sl. No. 1 to 41 (table under para 16 above are towards deferred works/liabilities within the original scope of work. In view of this, the projected additional capital expenditure of ₹11394.00 lakh in 2014-15, ₹22570.00 lakh in 2015-16 and ₹4951.00 lakh in 2016-17 are allowed under Regulation 14(1)(ii) of the 2014 Tariff Regulations.

Initial Spares- Regulation 14(1)(iii)

11. The petitioner has claimed projected additional capital expenditure of ₹2360.00 lakh in 2014- 15, ₹4724.00 lakh in 2015-16 and ₹8500.00 lakh in 2016-17 towards initial spares (SG Main Plant spares, TG mandatory spares, Cooling water system mandatory spares, Bus duct mandatory spares, Switchyard mandatory spares, Spares for diesel locomotive and additional spares for Stage-III) under Regulation 14(1)(iii) of the 2014 Tariff Regulations.

12. The respondent, BRPL has submitted that the claim of the petitioner towards the procurement of initial spares within the original scope of work and up to the cut-off date under Regulation 14(1)(iii) of the 2014 Tariff Regulations may not be allowed as the petitioner has not furnished any details of the initial spares within the original scope of



work in accordance with the provisions of Regulation 13 of the 2014 Tariff Regulations. In response, the petitioner has clarified that the projected additional capital expenditure claimed for the period 2014-19 and the capital cost allowed by the Commission as on 31.3.2014 in order dated 14.3.2016 for the generating station is well within the original estimated cost

13. We have examined the matter. Regulation 8 of the 2009 Tariff Regulations provides for capitalization of initial spares at 2.5% (coal based/lignite fired thermal generating station) of the original project cost. The amount of initial spares capitalized upto 31.3.2014 is ₹2399.96 lakh and the total initial spares claimed by the petitioner for the period from 1.4.2014 to 31.3.2017(cut-off date) is ₹15584.00 lakh. Thus, the total initial spares claimed up to the cut-off date of the generating station is ₹17983.96 lakh (₹2399.96 lakh + ₹15584.00 lakh). This works out to 3.43% of the capital cost of ₹524917.74 lakh (including initial spares) claimed up to the cut-off date which is more than the ceiling norm of 2.5% specified under Regulation 8 of the 2009 Tariff Regulations. Therefore, the capitalization of initial spares is required to be restricted to 2.5% of the capital cost i.e. ₹12911.75 lakh. Thus, the petitioner has claimed excess capitalization of ₹5072.21 lakh (₹17983.96 lakh - ₹12911.75 lakh). In view of this, the petitioner's claim for capitalization of initial spares for ₹8500.00 lakh in 2016-17 has been restricted to ₹3427.79 lakh (₹8500.00 lakh-₹ 5072.21 lakh). Accordingly, the projected additional capital expenditure for initial spares of ₹. 2360.00 lakh in 2014-15, ₹4724.00 lakh in 2015-16 and ₹3427.79 lakh in 2016-17 has been allowed under Regulation 14(1)(iii) of the 2014 Tariff Regulations.

Ash Dyke-Regulation 14(1)(iv)

14. The petitioner has claimed projected additional capital expenditure of ₹7281.00 lakh in 2017-18 under Regulation 14(1)(iv) of the 2014 Tariff Regulations. In justification of the same, the petitioner has submitted that the work related to ash handling system is within



the original scope of work. The cut-off-date of the generating station is 31.3.2017. On prudence, it is found that the claim of petitioner towards ash handling system during 2017-18 is a deferred works in the original scope of work after the cut-off-date, hence, the same is allowed under the Regulation 14(3)(iv) of the 2014 Tariff Regulations.

15. The respondent, BRPL has submitted that claim of the petitioner for additional capital expenditure of ₹7281.00 lakh in 2017-18 under Regulation 14(1)(iv) of the 2014 Tariff Regulations for Ash dyke cannot be granted as the claim under Regulation 14(1)(iv) is permissible only for liabilities to meet award of arbitration or for compliance of the order or decree of a court of law which is not the case here. Accordingly, it has submitted that the claim of the petitioner may be rejected.

16. The matter has been examined. The cut-off date of the generating station is 31.3.2017 and the claim of the petitioner and the petitioner has claimed capitalization of the expenditure of ₹7281.00 lakh in 2017-18. On prudence check, it is noticed that the claim of the petitioner towards ash handling system in 2017-18 is a deferred work within the original scope of work and after the cut-off date. Hence, the same is considered and allowed under Regulation 14(3)(iv) of the 2014 Tariff Regulations.

17. Based on the above discussions, the projected additional capital expenditure allowed for the purpose of tariff for the period 2014-19 is as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Additional capital expenditure (excluding initial spares)	11394.00	22570.00	4951.00	7281.00	0.00
Initial spares	2360.00	4724.00	3427.79	0.00	0.00
Additional capital expenditure allowed (including initial spares)	13754.00	27294.00	8378.79	7281.00	0.00



Un-discharged liabilities

18. The petitioner has not claimed/ projected any discharge of liabilities during the period 2014-19. Accordingly, no discharge of liability has been considered while arriving at the capital cost for tariff.

19. Accordingly, the capital cost allowed for the period 2014-19 is as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	467043.03	480797.03	508091.03	516469.81	523750.81
Admitted additional capital expenditure	13754.00	27294.00	8378.79	7281.00	0.00
Closing capital cost	480797.03	508091.03	516469.81	523750.81	523750.81

Debt–Equity Ratio

20. 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.*

(1) 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.

(2) 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.



(3) 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.

(4) 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.”

21. Accordingly, the gross loan and equity amounting to ₹140112.91 lakh and ₹326930.12 lakh respectively has been considered as gross loan and equity as on 1.4.2014.

Return on Equity

22. 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.



23. 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.

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

24. The petitioner has claimed return on equity considering the base rate of 15.5% and effective tax rate of 23.94% computed for the period 2014-19. The tax rate considered by the petitioner for grossing up of the RoE is 23.94% for all the years of the period 2014-19. Though the regulation prescribe computation of effective tax rate on the basis of tax paid, we deem it proper to allow the grossing up on MAT rate considering the fact that the matter is being decided during the year 2016-17. Accordingly, for the present, the effective tax rate (MAT) of 20.961% has been considered for the 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%. Based on the above, the rate of ROE works out to 19.610% for 2014-15 and



19.705% for the year 2015-16 and onwards. This is, however, subject to truing up.

Accordingly, return on equity has been worked out as under:

	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Notional Equity	140112.91	144239.11	152427.31	154940.94	157125.24
Addition due to additional capital expenditure	4126.20	8188.20	2513.64	2184.30	-
Closing Equity	144239.11	152427.31	154940.94	157125.24	157125.24
Average Equity	142176.01	148333.21	153684.13	156033.09	157125.24
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)	19.611%	19.706%	19.706%	19.706%	19.706%
Return on Equity (Pre Tax)	27882.14	29230.54	30284.99	30747.88	30963.10

(₹ in lakh)

25. The petitioner is directed to furnish on affidavit, the effective tax rates along with the Tax Audit Report for the period 2014-19 at the time of truing-up of tariff of the generating station in accordance with Regulation 8 of the 2014 Tariff Regulations.

Interest on loan

26. 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 Decapitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered up to the date of de-capitalization of such asset.

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

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

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



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

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

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

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

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

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

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

i) The gross normative loan amounting to ₹326930.12 lakh has been considered as on 1.4.2014.

ii) Cumulative repayment of loan of ₹18844.57 lakh as on 31.3.2014 has been considered as on 1.4.2014.

iii) Accordingly, the net normative opening loan as on 1.4.2014 works out to ₹308085.55 lakh.

iv) Addition to normative loan on account of approved additional capital expenditure has been considered.

v) Depreciation allowed for the period has been considered as repayment of normative loan during the respective years.

vi) In line with the provisions of the above regulations, the weighted average rate of interest has been calculated 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.

28. Necessary calculations for interest on loan are as under:

	<i>(₹ in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Gross notional loan	326930.12	336557.92	355663.72	361528.87	366625.57
Cumulative repayment of loan	18844.57	45145.37	72585.18	101014.84	129879.03



Net opening loan	308085.55	291412.55	283078.54	260514.03	236746.54
Addition due to additional capital expenditure	9627.80	19105.80	5865.15	5096.70	0.00
Repayment of loan during the period	26300.80	27439.81	28429.66	28864.19	29066.22
Net Closing loan	291412.55	283078.54	260514.03	236746.54	207680.32
Average loan	299749.05	287245.54	271796.28	248630.28	222213.43
Weighted Average Rate of Interest on loan	8.2579%	8.1198%	8.1059%	8.2887%	8.2848%
Interest on loan	24753.01	23323.70	22031.48	20608.26	18409.98

Depreciation

29. 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) alongwith justification and proposed life extension.

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

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

30. The weighted average rate of depreciation of 5.5496% for 2014-15, 5.5496% for 2015-16, 5.5496% for 2016-17, 5.5496% for 2017-18 and 5.5496% for 2018-19 as considered by the petitioner has been allowed for the purpose of calculation of depreciation. Accordingly, depreciation has been worked out as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	467043.03	480797.03	508091.03	516469.81	523750.81
Addition due to additional capital expenditure	13754.00	27294.00	8378.79	7281.00	-
Closing Gross Block	480797.03	508091.03	516469.81	523750.81	523750.81
Average Gross Block	473920.03	494444.03	512280.42	520110.31	523750.81
Value of freehold land included in gross block	-	-	-	-	-
Rate of Depreciation	5.5496%	5.5496%	5.5496%	5.5496%	5.5496%
Depreciable value including amortization of lease land in 25 yrs	426528.02	444999.62	461052.38	468099.28	471375.73
Remaining depreciable value	426528.02	399854.25	388467.20	367084.44	471375.73
Depreciation	26300.80	27439.81	28429.66	28864.19	29066.22

O & M Expenses

31. Regulation 29 (1) (a) of the 2014 Tariff Regulations provides the year-wise O&M expense norms for 500 MW units of coal based generating station as under:

(₹ in lakh/MW)				
2014-15	2015-16	2016-17	2017-18	2018-19
16.00	17.01	18.08	19.22	20.43



32. Proviso to the Regulation 29 (1) (a) of the 2014 Tariff Regulations states as under:

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

200/210/250 MW	Additional 5th & 6th units	0.9
	Additional 7th & more units	0.85
300/330/350 MW	Additional 4th & 5th units	0.9
	Additional 6th & more units	0.85
500 MW and above	Additional 3rd & 4th units	0.9
	Additional 5th & above units	0.85

33. In terms of the above regulations, the petitioner has claimed O&M expenses as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
16000.00	17010.00	18080.00	19220.00	20430.00

34. The generating station with a capacity of 1000 MW comprises of two units of 500 MW each was declared under commercial operation on 27.3.2014 and is an expansion project. The question of rationalization of O&M expenses in respect of expansion units commissioned during the period 2009-14 and continued during the tariff period 2014-19 has been addressed by the Commission in order dated 29.7.2016 in Petition No. 294/GT/2014 (determination of tariff of Simhadri Super Thermal Power Station Stage-II for the period 2014-19) as under:

“It is noticed that under the 2009 Tariff Regulations, any generating station having 3rd and 4th units with a capacity of 500 MW and above, if commissioned on or after 1.4.2009 but before 31.3.2014, shall be entitled to O&M expenses at the rate to be worked out on the basis of normative O&M multiplied by 0.9%. There is no corresponding provision in the 2014 Tariff Regulations for determination of the O&M expenses of the units commissioned on or after 1.4.2009 but before 31.3.2014 during the 2009-14 period. However, in the 2014 Tariff Regulations, the O&M expenses of 3rd and 4th Unit of the generating stations having capacity of 500 MW and above whose COD occurred on or after 1.4.2014 are required to be worked out by multiplying the O&M norms with the factor of 0.9%. This has given rise to a situation where in the restrictions imposed on admissible O&M expenses of the 3rd and 4th units of the generating station commissioned during 2009-14 period are not continued during 2014-19 period, though the intent is that the O&M expenses of 3rd and 4th units of a generating station should be rationalized by multiplying with a factor of 0.9 since these units are sharing certain common facilities developed for Units 1 and 2 of the generating station. In our view, this anomalous situation can be addressed if the provision to Regulation 29(a) of 2014 Tariff Regulations is made applicable in respect of generating stations whose additional units have been



commissioned on or after 1.4.2009. This in our view, will balance the interest of the generating station and the beneficiaries and will be in conformity with the objective of section 61(d) of the Act.

53. Regulation 55 of the 2014 Tariff Regulations enables the Commission to remove difficulty in giving effect to the objectives of the provisions of the regulations. Regulation 55 provides as under:

“55. Power to Remove Difficulty

If any difficulty arises in giving effect to the provisions of these regulations, the Commission may, by order, make such provision not inconsistent with the provisions of the Act or provisions of other regulations specified by the Commission, as may appear to be necessary for removing the difficulty in giving effect to the objectives of these regulations.”

54. According to the above regulations, the Commission can make provisions to remove the difficulty in order to give effect to the objectives of the tariff regulations, if it is not inconsistent with the provisions of the Act.

55. The Hon’ble Supreme Court in *Mahadeva Upendra Sinai etc. Vs Union of India & Ors* [1975 AIR 797, 1975 SCR (2) 640] has laid down the scope of the exercise of power to remove difficulty provided in a statute. Relevant observations of the Hon’ble Supreme Court are extracted as under:

“.....It will be seen that the power given by it is not uncontrolled or unfettered. It is strictly circumscribed, and its use is conditioned and restricted. The existence or arising of a “difficulty” is the sine qua non for the exercise of the power. If this condition precedent is not satisfied as an objective fact, the power under this Clause cannot be invoked at all. Again, the “difficulty” contemplated by the Clause must be a difficulty arising in giving effect to the provisions of the Act and not a difficulty arising aliunde, or an extraneous difficulty. Further, the Central Government can exercise the power under the Clause only to the extent it is necessary for applying or giving effect to the Act etc. and no further. It may slightly tinker with the Act to round off angularities, and smoothen the joints or remove minor obscurities to make it workable, but it cannot change, disfigure or do violence to the basic structure and primary features of the Act. In no case, can it, under the guise of removing a difficulty, change the scheme and essential provisions of the Act.”

56. As per the above judgment, Power to remove difficulty can be exercised to the extent it is necessary for applying or giving effect to the legislation and in doing so, the authority exercising the power to remove difficulty may slightly tinker with the legislation to round off angularities, or smoothen joints or remove minor obscurities to make it workable, without doing violence to the basic structure and primary features of the regulations. Further, under the guise of removing difficulties, the scheme and essential provisions of the legislations cannot be changed.

57. The 2009 Tariff Regulations as well as 2014 Tariff Regulations have been made by the Commission in exercise of its legislative power under Section 178 of the Act read with Section 61 of the Act. Section 61 provides for the guiding principles for specifying the terms and conditions for determination of tariff. Two of the guiding principles enumerated under Section 61 are extracted as under:-

“(c) the factors which would encourage competition, efficiency, economical use of the resources, good performance and optimum investments;

(a) Safeguarding of consumer’s interest and at the same time, recovery of the cost of electricity in a reasonable manner.”



58. Therefore, some of the relevant factors to be considered while specifying the terms and conditions of tariff would relate to the economical use of resources, efficiency, good performance, safeguarding the consumer interest while ensuring the recovery of the cost of electricity in a reasonable manner. During the making of the 2009 Tariff Regulations, the Commission took note of the facts that the generators like NTPC are going for expansion of the existing generating stations for optimum utilization of the resources. Since, the expansion units would be sharing some of the common facilities already in place and the normative O&M expenses allowed in the regulation captures the economic scale for a capacity range of 1000 to 1200 MW on an average, the Commission felt that the O&M expenses for the extension unit of the same type at the same location should not be of the same order. Accordingly, the Commission provided for multiplying factors to be applied to the normative O&M expenses to arrive at the O&M expenses in respect of future additional units whose COD would occur on or after 1.4.2009. In this connection, Para 20.9 and 20.10 of the Statement of Reasons issued for 2009 Tariff Regulations is extracted below:

“20.9 For the generating stations having combination of above sets, the weighted average value for operation and maintenance expenses were to be adopted. It is also felt that O&M expenses for the extension units of the same type at the same location should not be of the same order. The above norms capture economy of scale for a capacity range of 1000 to 1200 Mw on an average. Commission is therefore, providing for following multiplying factors to be applied to the above O&M norms for permissible O&M expenses in respect of future additional units, in respective unit sizes for the units whose COD occurs on or after 1.4.2009:

200/210/250 MW	Additional 5 th & 6 th units	0.9
	Additional 7 th & more units	0.85
300/330/350 MW	Additional 4 th & 5 th units	0.9
	Additional 6 th & more units	0.85
500 MW and above	Additional 3 rd & 4 th units	0.9
	Additional 5 th & above units	0.85

20.10 To explain the applicability of above provisions, if a 210 Mw unit comes into operation during 2009-10 in a station already having four or more 200/210 Mw units, then the norm for the extension unit would be calculated as 0.90 X ₹ 18.20 lakh/MW. If 500 MW units come up in a station having only 200/210 MW units, then admissible O&M norm for the extension unit would be ₹ 13.00 lakh/MW during 2009-10.”

59. It is apparent from the above that the intention of providing multiplying factor for determination of O&M charges for additional units was to pass on the benefits of economic scale to the consumers. The said provisions are also in conformity with the provisions of the Act particularly sub-section (c) and (d) of Section 61 of the Act. However, while framing the 2014 Tariff Regulations, the above aspects could not be captured in respect of the expansion units which were commissioned on or after 1.4.2009 but before 31.3.2014. The Commission considers it appropriate to remove the difficulty by exercise of its power under Regulation 55 of the 2014 Tariff Regulations by providing that the proviso under sub-clause (a) of Clause 1 of Regulation 29 of 2014 Tariff Regulations shall be made applicable to the units whose COD occurred on or after 1.4.2009. We have exercised our power to remove difficulty in order to give effect to the Regulations in the true letter and spirit of the Act. “

35. Accordingly, in line with the above decision, the normative O&M expenses for additional units of the generating station has been worked out and allowed as under:



(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
13600.00	14458.50	15368.00	16337.00	17365.50

Water Charges

36. 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”

37. 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.

38. The petitioner has claimed water charges for the period 2014-19 as under:

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
394.82	419.89	446.56	474.91	505.07

39. The respondent, UPPCL has submitted that water consumption needs to be determined on normative basis based on designed capacity less reduction on various water conservation measures. It has further submitted that rate shall be on actuals as notified by various State Governments and this is essential to ensure that water consumption is within the designed capacity of the capacity. The respondent has added that the contention of the petitioner that water charges shall be allowed on actuals needs to be rejected. Similar submissions have been made by the respondent, BYPL. In response, the petitioner has submitted that its claim for water charges is within the ambit of Regulation 29 (2) of the 2014 Tariff Regulations. It has further submitted that the water



charges for 2014-15 have been projected based on the actual expenditure incurred in 2013-14 in respect of the generating station since the same were the latest figures available as on date of filing the petition and projections for subsequent years have been made by escalating the value of 2013-14 at 6.35% as per the escalation rate considered by the Commission in O&M charges for subsequent years of the control period i.e. 2014-19. The petitioner has also submitted that the water charges claimed by the petitioner are subject to retrospective adjustment based on the actual expenditure incurred and the details to be furnished at the time of truing-up of tariff after prudence check. Accordingly, the petitioner has submitted that the submissions of the respondent are liable to be rejected.

40. In order to examine the trend of the actual water consumption and rate of water charges, the petitioner was directed vide ROP of the hearing dated 22.6.2016 to furnish the details of the actual water consumption along with the rate of water charges for the last five years (i.e. 2009-10 to 2013-14) along with relevant notification in support of the same. In response, the details of water charges such as type of cooling water system, water consumption, rate of water charges as applicable for 2013-14 have been furnished by the petitioner is as under:

	Remarks
Type of Plant	Coal
Type of cooling water system	Induced draft cooling
Total water charges in 2013-14	₹394.82 lakh

41. In compliance with the above, the petitioner vide affidavit dated 12.7.2016 has also furnished the copy of record note of discussions of the meeting held on 3.4.1999 between the State Govt. of U.P. and the petitioner, wherein the principles for calculation of consumptive water charges for Rihand STPS and Singrauli STPS (another generating station of the petitioner) required to be adopted in future have been indicated as under:



(i) Water level may be taken on theoretical basis i.e. minimum of 830 feet and maximum of 880 feet.

(ii) T&D losses will be taken @ 12% (twelve percent)

(iii) Auxiliary Power Consumption of UPSEB Hydro station viz. Rihand&Obra will be taken as 0.5%

(iv) The energy loss will be calculated taking into consideration the actual availability of Rihand hydro station of UPSEB for the year 1998.

(v) Water charges will be payable from the date of synchronization of the units.

(vi) The per Kilowatt hour charges to be applied will be the highest average annual rate during 1998 amongst Northern Region coal based stations of NTPC and will be applicable w.e.f. 1.1.1999 for next five years and this will be revised upwards by 10% every five years.

(vii) To provide for generation loss on account of spillover of water, the charges for consumptive use will be worked out on the basis of 3.0 (three) times of the above rate in place of 2 (two) times as earlier proposed. No separate payments towards spillover water will be admissible.

(viii) Water charges will be a pass thorough in the tariff."

42. Accordingly, the details of the actual water consumption, rate of water charges for the last 5 years (2009-14) furnished by the petitioner vide affidavit dated 12.7.2016 are as under:

	Qty of CW cusec/MW	Capac ity MW	Total qty of CW Cusec	Annual Gen loss Kwh/Cusec	PAF %	Generation loss in a month Kwh	Rate Paisa/Kw h	Amount in ₹ in lakh
1	2	3	4=2*3	5	6	7=4*5*6/36 5	8	9=(7*8*3 /100)/10 ^7
2009-10	0.0371883	1000	37.188306	163509.544	86.48	432208.77	244.2506	385.32
2010-11	0.0371883	1000	37.188306	163509.544	86.48	446615.73	244.2506	385.32
2011-12	0.0371883	1000	37.188306	163509.544	86.48	432208.77	244.2506	385.32
2012-13	0.0371883	1000	37.188306	163509.544	86.48	446615.73	244.2506	385.32
2013-14 Apr'2013 to Dec'2013	0.0371883	1000	37.188306	163509.544	86.48	446615.73	244.2506	290.31
2013-14 (Jan'2014 to Mar,2014	0.0371883	1000	37.188306	163509.544	86.48	432208.77	26867566	104.51
							Total (2013-14)	394.82

43. As per provisions of Regulation 29(2) of the 2014 Tariff Regulations, Water charges are to be allowed separately. It is observed from the above table that the petitioner has claimed water charges for the year 2014-15 considering the actual water charges for the



year 2013-14 and escalating the same @ of 6.35% on year to year for the period 2014-19. In addition to the above, the petitioner has also submitted the water charges bill for the month of December, 2013 and January, 2014 claimed by the UP Jal Vidyut Nigam Limited in respect of this generating station.

44. It is noticed from the water charges bill that the rate of water charges has been revised to 268.67566 P/kWh (with upward revision of 10%) from 244.2506 P/kWh with effect from January, 2014. Also, annual generation loss, PAF and month-wise generation loss have been claimed as per water charges bill. Accordingly, water charges for the year 2014-15 based on revised rate of water charges w.e.f 1.1.2014 and by multiplying by factor “3” as per principle laid down at sl. No. vii of records of meeting dated 3.4.1999 have been computed as follows:

Month	No of days	Qty of CW (cusec/ MW)	Capacity MW	Total qty of CW (cusec)	Annual gen loss (Kwh/Cusec)	PAF %	Generation loss in a month (kwh)	Rate (Paisa /Kwh)	Amount (₹ in lakh)
	1	2	3	4=2*3	5	6	7=(1*4*5*6/365)	8	9=(7*8)*(3/100)/10 ⁵
Apr-14	30	0.0371883	1000	37.188306	163509.544	86.48%	432208.77	268.67566	34.84
May-14	31	0.0371883	1000	37.188306	163509.544	86.48%	446615.73	268.67566	36.00
Jun-14	30	0.0371883	1000	37.188306	163509.544	86.48%	432208.77	268.67566	34.84
Jul-14	31	0.0371883	1000	37.188306	163509.544	86.48%	446615.73	268.67566	36.00
Aug-14	31	0.0371883	1000	37.188306	163509.544	86.48%	446615.73	268.67566	36.00
Sep-14	30	0.0371883	1000	37.188306	163509.544	86.48%	432208.77	268.67566	34.84
Oct-14	31	0.0371883	1000	37.188306	163509.544	86.48%	446615.73	268.67566	36.00
Nov-14	30	0.0371883	1000	37.188306	163509.544	86.48%	432208.77	268.67566	34.84
Dec-14	31	0.0371883	1000	37.188306	163509.544	86.48%	446615.73	268.67566	36.00
Jan-15	31	0.0371883	1000	37.188306	163509.544	86.48%	446615.73	268.67566	36.00
Feb-15	28	0.0371883	1000	37.188306	163509.544	86.48%	403394.85	268.67566	32.51
Mar-15	31	0.0371883	1000	37.188306	163509.544	86.48%	446615.73	268.67566	36.00
									423.85

45. It is observed from the record note of discussions of the meeting dated 3.4.1999 that per kWh charges will be revised upwards by 10% after every five years. The last revision of rate of water charges with 10% escalation was effective from 1.1.2014. In view of the



above, water charges computed as above for the year 2014-15 has been allowed on projection basis, without any escalation upto 31.12.2018 and thereafter at an increased rate of 295.54323 P/kWh (with upward revision of 10%) from 1.1.2019. Accordingly, water charges have been allowed as under:

(₹ in lakh)	
2014-15	423.85
2015-16	423.85
2016-17	423.85
2017-18	423.85
2018-19 (upto 31.12.2018)	317.89
2018-19 (1.1.2019 to 31.3.2019)	114.96

46. The petitioner is directed to furnish the details such as the contracted quantity, allocation of water, the actual water consumed during 2014-19, the basis of calculation of quantity of CW, PAF & generation loss considered for computation of water charges for this generating station at the time of truing-up of tariff in terms of the 2014 Tariff Regulations. In addition, the petitioner shall also confirm / clarify as to whether the water charges paid is on the basis of allocation or on the contracted quantity.

47. Accordingly, the total O&M expenses, including water charges, claimed by the petitioner and allowed for the purpose of tariff is as under:

(₹ in lakh)					
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses claimed (a)	16000.00	17010.00	18080.00	19220.00	20430.00
O&M Expenses allowed (b)	13600.00	14458.50	15368.00	16337.00	17365.50
Water charges claimed (c)	394.82	419.89	446.56	474.91	505.07
Water charges allowed (d)	423.85	423.85	423.85	423.85	432.85
Total O&M expenses claimed (a + c)	16394.82	17429.89	18526.56	19694.91	20935.07
Total O&M expenses allowed (b + d)	14023.85	14882.35	15791.85	16760.85	17798.35



Enhancement of O & M expenses

48. 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 by the petitioner are based on the 2014 Tariff Regulations. It has also submitted that the escalation of 6.35% provided in the O&M norms would not cover the enhanced employee cost w.e.f 1.1.2017. The petitioner has therefore prayed for grant of liberty to seek the enhancement in the O&M expenses with effect from 1.1.2017 towards the increased salary on account of revision in salary from 1.1.2017, based on the actual payments whenever made by it. The matter has been examined. On this issue, the Commission in the Statement of Reasons to the 2014 Tariff Regulations has observed as under:

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

49. 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 filing of an appropriate application by the petitioner in this regard.

Capital spares

50. The petitioner has not claimed capital spares on projection basis during the period 2014-19. Accordingly, the same has not been considered in this order. The claim of the



petitioner, if any, at the time of truing-up, shall be considered on merits, after prudence check.

Operational Norms

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

Target Availability (%)	83.00
Heat Rate (kcal/kwh)	2402.07
Auxiliary Power consumption (%)	5.75
Specific Oil Consumption (ml/kwh)	0.50

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

Normative Annual Plant Availability Factor

53. 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”

54. The petitioner has considered the target availability norm of 83% during 2014-19. The Commission due to shortage of domestic coal supply has relaxed target availability norm to 83% for first 3 years from 1.4.2014 and the same shall be reviewed after 3 years. Hence, terms of the above regulation, the NAPAF of 83% is allowed for the period 2014-15 to 2016-17 and 85% for the period 2017-18 and 2018-19.

Station Heat Rate

55. The Commission vide order dated 14.3.2016 in Petition No. 205/GT/2013 had allowed the operational norms in respect of this generating station as under:-



“104. The operation norms considered by the petitioner are in order. However, as regards Heat Rate, it is observed that based on Design Turbine Cycle Heat Rate of 1932 kcal/kWh and boiler efficiency of 84.05% and 6.5% deviation as per specified norms, the Gross Station Heat Rate (GSHR) works out to 2448.04 kcal/kWh. The ceiling Design Heat Rate as specified by the Order in Petition No.205/GT/2013 for steam pressure of 170 kg/cm² and Super heater / Re-heater temperature of 540/5650 C is 2276 kcal/kWh and considering a deviation of 6.5% for design value, the GSHR works out to 2423.94 kcal/kWh (2276x1.065). The petitioner has considered the ceiling GSHR of 2423.94 kcal/kWh and the same is in order. Accordingly, the operational norms considered by the petitioner have been allowed”

56. Regulation 36(C)(c) of the 2014 Tariff Regulations provides the Station Heat Rate for thermal generating stations having COD on or after 1.4.2009 till 31.3.2014 as 1.045 x Design heat rate (kcal/kWh). The COD of the generating station is 27.3.2014. Therefore, considering the Turbine Cycle Heat Rate of 1932 (kcal/kWh) and Boiler Efficiency of 84.05% as furnished by the petitioner in Form-2 of the petition, the design heat rate works out to 2298.63 kcal/kWh. Accordingly, the Gross Station Heat Rate (GSHR) works out to 2402.07 kcal/kWh (1.045 x 2298.63). The GSHR of 2402.07 kcal/kWh worked out for the period 2014-19 is lesser than the GSHR of 2423.94 kcal/kWh approved vide order dated 14.3.2016 for the period 2009-14 and hence the GSHR of 2402.07 kcal/kWh is allowed.

Auxiliary Energy Consumption

57. Regulation 36 (E) (a) of the 2014 Tariff Regulations provides the Auxiliary Energy Consumption of 5.25% for Coal based generating stations of 500 MW sets and is further increased by 0.5% with induced Draft Cooling tower with Steam driven BFP. The petitioner has considered Auxiliary Energy Consumption of 5.75% for coal based generating stations of 500 MW sets with Induced Draft Cooling Tower (IDCT). Accordingly, the Auxiliary Energy Consumption of 5.75% considered by the petitioner is in order and is allowed.

Specific Oil Consumption

58. Regulation 36(D)(a) of the 2014 Tariff Regulations provides for secondary fuel oil consumption of 0.50 ml/kWh for coal-based generating station. Hence, the secondary fuel oil consumption considered by the petitioner is as per norms and is allowed.



Interest on Working Capital

59. Sub-section (a) 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 towards stock for 15 days for pit-head generating stations and 30 days for non-pit-head generating station for generation corresponding to the normative annual plant availability factor or the maximum coal stock storage capacity whichever is lower.

ii) Cost of coal for 30 days for generating corresponding to the normative annual plant availability factor.

iii) Cost of secondary fuel oil for two month for generating corresponding to the normative annual plant availability factor, and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil.

iii) Maintenance spares @ 20% of operation and maintenance expenses specified in regulation 29.

iv) Receivables equivalent to two months of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor; and

vi) Operation and maintenance expenses for one month.”

Fuel Components and Energy Charges in working capital

60. The petitioner has claimed the cost for fuel component in working capital based on price ‘as fired’ GCV of coal procured and burnt for the preceding three months i.e. January, 2014, February, 2014 and March, 2014 and secondary fuel oil the preceding three months i.e. January, 2014, February, 2014 and March, 2014 as under:

	<i>(₹ in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of coal for 0.5 months	3930.81	3941.57	3930.81	3930.81	3930.81
Cost of coal for generation –one month	7861.61	7883.15	7861.61	7861.61	7861.61
Cost of secondary fuel oil	322.84	323.73	322.84	322.84	322.84



61. The respondent, BYPL has prayed to consider “GCV as billed” to determine ECR in place of “GCV as received” which would be close replica since GCV “GCV as received” is not available with the petitioner. The respondent, BRPL vide affidavit dated 23.5.2015 has submitted that GCV as ‘as billed’ by the Coal company may be used in case the petitioner drags its feet and refuses to supply GCV on ‘as received’ basis. Similarly, the respondent, UPPCL vide affidavit dated 6.6.2016 has submitted to consider GCV ‘as billed’ which is nearest proxy to ‘as received’ GCV. The petitioner in its rejoinder has clarified that the petitioner has calculated Energy Charge Rate (ECR) as per data available with it at the time of filing of the petition and that the determination of representative value of GCV depends on the representative nature of sample. The petitioner has further submitted that it did not have infrastructure for measuring the representative figures of ‘as received’ GCV and that it has submitted the Audited Form-15 vide affidavit dated 29.10.2014. It has also stated that GCV ‘as fired’ is based upon actual consumption of coal mix at different units/ stages and hence the GCV ‘as fired’ is different for all the stages. Accordingly, the petitioner has submitted that the submissions of the respondent are liable to be rejected.

62. The computation of Energy Charges and fuel component (coal cost) in working capital during the period 2014-19 is based on “as received” GCV of coal. The petitioner in Form-15 has submitted that it does not have infrastructure for measuring GCV on “as received” basis for the above three months.

63. 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.



64. 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.”

65. Further, the petitioner has claimed an Energy Charge Rate (ECR) of 140.516 Paise/kWh based on the weighted average price, GCV of coal (as fired basis) & Oil procured and burnt for the preceding three months. 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 Hydraulic 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. Hence, the Commission has decided to compute the energy charges by provisionally taking the GCV of coal on as 'billed basis' and allowing on adjustment for inherent moisture as per the formula given as under:



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

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

66. In view of the above, the cost for fuel components in working capital have been computed at 83% NAPAF for the years 2014-15, 2015-16 and 2016-17 and at 85% NAPAF for the year 2017-18 and 2018-19 and based on 'as billed' GCV of coal and price of coal procured and secondary fuel oil for the preceding three months from January, 2014 to March 2014 and allowed as under:

	<i>(₹ in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal for stock-15 days	2677.88	2677.88	2677.88	2742.41	2742.41
Cost of Coal for generation-30 days	5355.77	5355.77	5355.77	5484.82	5484.82
Cost of Secondary fuel oil 2 months	322.84	323.73	322.84	330.62	330.62

67. Similarly, the ECR based on operational norms specified in the 2014 Tariff Regulations and on "as billed" GCV of coal for the preceding 3 months i.e. January, 2014 to March, 2014 is worked out as under:

		Unit	2014-19
1	Capacity	MW	1000
2	Gross Station Heat Rate	Kcal/kWh	2402.07
3	Auxiliary Energy Consumption	%	5.75
4	Weighted average GCV of oil (as fired)	Kcal/lit	10420.33
5	Weighted average GCV of Coal (as billed)	Kcal/kg	4782.82
6	Adjustment on account of coal received at the generating station for equilibrated basis (air dried) in the billed GCV of Coal India		*
7	Weighted average price of oil	₹/KL	53283.15
8	Weighted average price of Coal	₹/MT	1788.35
9	Rate of Energy Charge ex-bus	Paise/kWh	97.916 **

*to be calculated by the petitioner based on the adjustment formulae

**to be revised as per the figures at Sr. No. 6



68. The GCV of coal as computed above shall be adjusted in the light of the GCV of coal on “as received basis” computed by the petitioner as per our directions in order dated 25.1.2016 in Petition No. 283/GT/2014.

Energy Charges

69. Energy charges for 2 months on the basis of as billed GCV for the purpose of interest in working capital has been worked out as under:

<i>(₹ in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
11181.37	11212.00	11181.37	11450.80	11450.80

Maintenance Spares

70. The petitioner has claimed maintenance spares in the working capital as under:

<i>(₹ in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
3278.96	3485.98	3705.31	3938.98	4187.01

71. Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provide for maintenance spares @ 20% of the operation & maintenance expenses as specified in Regulation 29. As specified in Regulation 29 (2) of the 2014 Tariff Regulations and as allowed by the Commission in order dated 6.10.2015 in Petition No. 186/GT/2014 (Sugen Power Plant), the maintenance spares @ 20 %of the operation & maintenance expenses including water charges, allowed are as under:

<i>(₹ in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
2804.77	2976.47	3158.37	3352.17	3559.67

Receivables

72. Receivables equivalent to two months of capacity charge and energy charges (based on primary fuel only) has been worked out and allowed as under:



(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Receivables (Fixed Charges)	16391.10	16724.21	17012.73	17105.45	16985.44
Receivables (Variable Charges)	11181.37	11212.00	11181.37	11450.80	11450.80

O & M Expenses (1 month)

73. O&M expenses for 1 month claimed by the petitioner for the purpose of working capital are allowed as under:

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
1168.65	1240.20	1315.99	1396.74	1483.20

Rate of interest on working capital

74. Clause (3) of Regulation 28 of the 2014 Tariff Regulations provides as under:

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

75. In terms of the above regulations, SBI PLR of 13.50% (Bank rate 10.00 + 350 bps) has been considered for the purpose of calculating interest on working capital. Interest on working capital has been computed as under:

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal for stock-15 days	2677.88	2677.88	2677.88	2742.41	2742.41
Cost of Coal for generation-30 days	5355.77	5355.77	5355.77	5484.82	5484.82
Cost of Secondary fuel oil 2 months	322.84	323.73	322.84	330.62	330.62
Maintenance Spares	2804.77	2976.47	3158.37	3352.17	3559.67
Receivables (Fixed Charges)	16391.10	16724.21	17012.73	17105.45	16985.44
Receivables (Variable Charges)	11181.37	11212.00	11181.37	11450.80	11450.80
O&M expenses (1 month)	1168.65	1240.20	1315.99	1396.74	1483.20
Total Working Capital	39902.39	40510.26	41024.94	41863.01	42036.96
Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
Interest on Working Capital	5386.82	5468.89	5538.37	5651.51	5674.99

76. Accordingly, the annual fixed charges approved for the generating station for the period from 1.4.2014 to 31.3.2019 is summarized as under:



(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity	27882.14	29230.54	30284.99	30747.88	30963.10
Interest on Loan	24753.01	23323.70	22031.48	20608.26	18409.98
Depreciation	26300.80	27439.81	28429.66	28864.19	29066.22
Interest on Working Capital	5386.82	5468.89	5538.37	5651.51	5674.99
O&M Expenses	14023.85	14882.35	15791.85	16760.85	17798.35
Annual Fixed Charges	98346.62	100345.29	102076.35	102632.69	101912.64

Month to Month Energy Charges

77. 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 fired, in kCal per kg, per litre or per standard cubic metre, as applicable.

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

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

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

LC = Normative limestone consumption in kg per kWh.

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

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

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

79. The petitioner has been directed by the Commission in its 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 filing fees and Publication Expenses

80. The petitioner has sought 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 filing fees of ₹ 4430100 for the year 2014-15, ₹4400000 each for the years 2015-16 and 2016-17 respectively in terms of the provisions of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012. Accordingly, in terms of Regulations 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 for the period 2014-17 and the expenses incurred on publication of notices directly from the respondents, on production of documentary proof. The filing fees for the remaining years of the tariff period 2017-19 shall be recovered *pro rata* after deposit of the same and production of documentary proof.

81. 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.

82. Petition No. 372/GT/2014 is disposed of in terms of above.

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

-Sd/-
(A.S. Bakshi)
Member

-Sd/-
(A.K. Singhal)
Member

-Sd/-
(Gireesh B. Pradhan)
Chairperson

