CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 280/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 : 03.03.2017

In the matter of

Approval of tariff of Farakka Super Thermal Power Station, Stage-III (1x500 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. West Bengal State Electricity Distribution Company Limited
   Vidyut Bhawan, Block-DJ,
   Sector-II, Salt Lake City
   Kolkata – 700 091

2. Bihar State Power Holding Company Limited
   (erstwhile Bihar State Electricity Board)
   Vidyut Bhawan, Bailey Road
   Patna – 800 001

3. Jharkhand State Electricity Board,
   Engineering Building,
   HEC, Dhurwa, Ranchi – 834004

4. GRIDCO Limited
   24, Janpath,
   Bhubaneswar – 751007

5. Damodar Valley Corporation
DVC Towers, VIP Road
Kolkata-700054 **...Respondents**

Parties present:

For Petitioner:	Shri A. Basu Roy, NTPC Shri Ajay Mehta, NTPC Shri Umesh Ambati, NTPC Shri Shyam Kumar, NTPC Shri Manoj Sharma, NTPC Shri Nishant Gupta, NTPC Shri K. K. Sinha, NTPC
For Respondents:	Shri R. B. Sharma, Advocate, GRIDCO Shri S. R. Sarangi, GRIDCO

ORDER

This petition has been filed by the petitioner, NTPC for approval of tariff of Farakka Super Thermal Power Station, Stage-III (1x500 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"). It is an expansion project of the existing Farakka Super Thermal Power Station Stage – III with an installed capacity of 500 MW is. The generating station achieved commercial operation on 4.4.2012.

2. The Commission, vide order dated 21.1.2014 in Petition No. 204/GT/2011, had approved the tariff of the generating station from the date of actual COD i.e. 4.4.2012 to 31.3.2014 considering the opening capital cost of ₹212177.16 lakh as on COD (after removal of un-discharged liabilities of ₹9919.25 lakh as on 4.4.2012). Against

the said order dated 21.1.2014, the petitioner filed review petition (Petition No. 9/RP/2014) on certain issues and the same were disallowed by the Commission vide order dated 17.12.2014.

3. Thereafter, the petitioner filed Petition No. 282/GT/2014 for revision of tariff based on true-up exercise of the actual additional capital expenditure incurred during the years 2012-13 and 2013-14 and the Commission vide order dated 24.8.2016 had revised the annual fixed charges based on the opening capital cost of ₹212337.06 lakh on cash basis as on COD of the generating station. Thereafter, by corrigendum dated 26.10.2016, the annual fixed charges were modified after correction of certain inadvertent clerical/arithmetical errors, the order dated 24.8.2016. Accordingly, the annual fixed charges allowed vide order dated 26.10.2016 is as under:

(₹ in lakh)

	2012-13	**2013-14**
Depreciation	11091.65	11775.82
Interest on Loan	14410.89	14205.13
Return on Equity	14966.64	16210.22
Interest on Working Capital	5987.16	6054.14
O&M Expenses	7680.00	8120.00
Secondary fuel oil cost	1766.76	1766.76
Compensation Allowance	0.00	0.00
Total	**55903.11**	**58132.07**

4. Before we proceed to determine the tariff of the generating station for the period of 2014-19, we rectify an inadvertent error in the computation of O&M expenses of the for the period 2009-14 in respect of the generating station, issued vide orders dated 21.4.2014, 24.8.2016 and 26.10.2016. This generating station comprising of 500 MW, is an expansion project to the existing Farakka Super Thermal Power Station, Stage-I (3x200 MW) and Stage-II (2x500MW) of the petitioner. Accordingly, the O&M

expenses of the generating station was required to be determined in accordance with the proviso to Regulation 19(a) of the 2009 Tariff Regulations which provides for the normative O&M expenses for 500 MW coal based and lignite based generating stations, as under: -

(₹in lakh/MW)

2012-13	2013-14
15.36	16.24

5. Provided that the above norms shall be multiplied by the following factors for additional units in respective unit sizes for the units whose COD occurs on or after 1.4.2009 in the same station:

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

6. As per the above provision, the O&M expenses of the units of this generating station which were commissioned after 1.4.2009 were required to be worked out by multiplying the normative O&M expenses with a factor of 0.9. The Commission, in its orders dated 21.4.2014, 24.8.2016 and corrigendum dated 26.10.2016, had not considered to apply the said proviso under Regulation 19(a) while determining O&M expenses of this generating station which has resulted in the allowing O&M expenses in excess of what was admissible under Regulation 19(a) read with proviso thereunder.

7. Regulation 103(A) of the Central Electricity Regulatory Commission (Conduct of Business) Regulation, 1999, as amended from time to time (Conduct of Business Regulation) provides as under: -

> *"Clerical or arithmetical mistakes in the orders or errors arising therein from any accidental slip or omission may at any time be corrected by the Commission either or its own motion or on the application of any of the parties."*

8. The above provision enables the Commission to correct any accidental omission or error in an order at any time on its own motion. Hence, we consider it appropriate to correct the inadvertent omission in computation of O&M expenses of this generating station which was allowed vide orders dated 21.4.2014, 24.8.2016 and corrigendum dated 26.10.2016. Accordingly, in exercise of our power under Regulation 103(A) of Conduct of Business Regulations, the year-wise normative O&M expenses of this generating station for the period from 4.4.2012 to 31.3.2014 is worked out in accordance with the proviso under Regulation 19(a) of the 2009 Tariff Regulations (by multiplying the normative O&M expenses with a factor of 0.9) as allowed as under:

(₹ in lakh)

2012-13	2013-14
6912.00	7308.00

9. The O&M expenses worked out as above shall be admissible in respect of the generating station for the period 2009-14 in supersession of the O&M expenses allowed vide orders dated 21.4.2014, 24.8.2016/26.10.2016.

10. Consequent upon revision of O&M expenses as above, the components of annual fixed charges of the generating station as allowed in order dated 24.8.2016/ 26.10.2016 is revised as under:

11. Interest on Working Capital allowed to the generating station in order dated 24.8.2016/26.10.2016 is revised as under:

(₹ in lakh)

Interest on working capital	2012-13	2013-14
Cost of Primary Fuel for Stock	0.00	0.00
Cost of Primary Fuel for Generation	16280.84	16280.84
Cost of Limestone for Stock	0.00	0.00
Cost of Limestone for Generation	0.00	0.00
Cost of Secondary Fuel Oil	294.46	294.46
O & M expenses	576.00	609.00
Maintenance Spares	1382.40	1461.60
Receivables	25462.08	25825.78
Total Working Capital	**43995.78**	**44471.69**
Rate of Interest	13.50%	13.50%
Interest on Working Capital	**5939.43**	**6003.68**

12. Based on the above, the annual fixed charges allowed to the generating station for the period from 4.4.2012 to 31.3.2014 stands revised as under:

(₹ in lakh)

	2012-13	2013-14
Depreciation	11091.65	11775.82
Interest on Loan	14410.89	14205.13
Return on Equity	14966.64	16210.22
Interest on Working Capital	5939.43	6003.68
O&M Expenses	6912.00	7308.00
Secondary fuel oil cost	1766.76	1766.76
Total	**55087.38**	**57269.61**

13. The annual fixed charges allowed as above shall be adjusted in terms of our direction contained in order dated 24.8.2016/26.10.2016.

<u>Determination of tariff for the period 2014-19</u>

14. The petitioner vide affidavit dated 14.8.2014 has sought the approval of tariff of this generating station for the period 2014-19, in accordance with the provisions of the 2014 Tariff Regulations. Subsequently, the petitioner vide affidavit dated 7.1.2016 has

revised the annual fixed charges of the generating station based on the capital cost and the annual fixed charges as under:

Capital Cost

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	237739.53	257765.52	262348.82	268048.82	269048.82
Add: Additional capital expenditure	20025.99	4583.30	5700.00	1000.00	0.00
Closing Capital Cost	257765.52	262348.82	268048.82	269048.82	269048.82
Average Capital Cost	247752.52	260057.17	265198.82	268548.82	269048.82

Annual Fixed Charges

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	12693.11	13323.42	13586.84	13758.47	13784.09
Interest on Loan	14250.29	13781.08	12762.54	11597.94	10187.99
Return on Equity	14881.14	15786.33	16098.45	16301.81	16332.16
Interest on Working Capital	6123.42	6192.87	6204.01	6222.14	6229.52
O&M Expenses	8198.19	8715.77	9264.16	9848.39	10468.53
Total	**56146.14**	**57799.48**	**57916.01**	**57728.76**	**57002.29**

15. In compliance with the directions of the Commission, the petitioner has filed additional information and has served copies on the respondents. The respondent, GRIDCO has filed its reply and the petitioner has filed its rejoinder to the said reply. We now proceed to examine the claim of the petitioner based on the submissions of the parties and the documents available on record, as discussed in the subsequent paragraphs.

Capital Cost as on 1.4.2014

16. 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 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."

17. The petitioner vide affidavit dated 14.8.2014 has claimed the annual fixed charges based on the opening capital cost of ₹237739.53 lakh as on 1.4.2014 as against the closing capital cost of ₹237698.86 lakh on 31.3.2014 admitted by the Commission vide order dated 24.8.2016 in Petition No. 282/GT/2014 read with corrigendum dated 26.10.2016. The undischarged liabilities of ₹4277.06 lakh correspond to the approved capital cost of ₹237698.86 lakh (on cash basis) as on 31.3.2014. Accordingly, the opening capital cost considered as on 1.4.2014, after removal of un-discharged liabilities works out to ₹237698.86 lakh (on cash basis).

Actual/Projected Additional Capital Expenditure during 2014-19

18. Regulation 14 (1) and 14 (3) 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) Undischarged 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 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 obsolesce 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."

19. The break-up of the projected additional capital expenditure claimed during 2014-19 is detailed as under:

(₹ in lakh)

Sl. No.	Head of Work /Equipment	Regulation	2014-15	2015-16	2016-17	2017-18	Total
1	Township and Colony	14(1) (ii)	1171.28	0.00	0.00	0.00	1171.28
2	Main Plant Civil Works		2616.77	0.00	0.00	0.00	2616.77
3	Approach roads		1585.42	0.00	0.00	0.00	1585.42
4	Stores Civil & Electrification		47.02	0.00	0.00	0.00	47.02
5	CW and Offsite civil works		788.78	0.00	0.00	0.00	788.78
6	Administrative & Service building		197.30	0.00	0.00	0.00	197.30
7	Chimney		24.24	0.00	0.00	0.00	24.24
8	Construction Tools/ T&P		36.29	0.00	0.00	0.00	36.29
9	Workshop & Lab equipments		28.37	0.00	0.00	0.00	28.37
10	Fire Fighting Tender & Equipments		89.23	0.00	0.00	0.00	89.23
11	Main Plant Turnkey (SG) & (TG)		3054.59	0.00	0.00	0.00	3054.59
12	CPU (Condensate Polishing Unit)		1.58	0.00	0.00	0.00	1.58
13	C&I Package		68.45	0.00	0.00	0.00	68.45
14	Ash Handling & AWRS		8401.99	0.00	0.00	0.00	8401.99
15	Coal Handling Package		0.05	0.00	0.00	0.00	0.05
16	CW System-Equipment		194.79	34.43	0.00	0.00	229.22
17	Water pre-treatment system package		36.58	11.94	0.00	0.00	48.52
18	DM Plant		2.99	0.00	0.00	0.00	2.99
19	Cooling Tower		4.67	5.03	0.00	0.00	9.69
20	FDPS & Station Piping		5.24	0.00	0.00	0.00	5.24
21	Air Conditioning & Ventilation		8.74	0.00	0.00	0.00	8.74
22	Electrical System		71.25	0.00	0.00	0.00	71.25
23	Switchyard		14.48	0.00	0.00	0.00	14.48
24	IT & Satellite Communication System		32.14	0.00	0.00	0.00	32.14
25	Furniture and Fixtures		11.37	0.00	0.00	0.00	11.37

Sl. No.	Head of Work /Equipment	Regulation	2014-15	2015-16	2016-17	2017-18	Total
26	Electrical Installations		27.12	0.00	0.00	0.00	27.12
27	Hospital Equipments		45.48	0.00	0.00	0.00	45.48
28	Vehicles		3.28	0.00	0.00	0.00	3.28
29	Office Equipments		30.35	0.00	0.00	0.00	30.35
30	Capitalisation of spares		386.16	0.00	0.00	0.00	386.16
31	Malancha Ash Dyke Works		135.47	0.00	0.00	0.00	135.47
32	Drains & Drainage System	14(1) with Regulation 54	0.00	41.16	0.00	0.00	41.16
33	Stores Civil Works		0.00	5.59	0.00	0.00	5.59
34	Misc Civil Works-M.Plant		0.00	0.91	0.00	0.00	0.91
35	Off - site Civil Package		0.00	80.91	0.00	0.00	80.91
36	Chimney – Civil		0.00	6.00	0.00	0.00	6.00
37	Township Facilities/ works		0.00	2562.13	0.00	0.00	2562.13
38	Main Plant Turnkey		0.00	189.00	0.00	0.00	189.00
39	Main Plant Civil Works Pkg		0.00	564.99	0.00	0.00	564.99
40	Condensate Polishing Plant		0.00	0.26	0.00	0.00	0.26
41	Control & Instrumentation		0.00	2.04	0.00	0.00	2.04
42	Ash Handling System		0.00	27.93	0.00	0.00	27.93
43	Ash Water Recirculation System Pkg		0.00	5.57	0.00	0.00	5.57
44	DM plant & CW treatment System		0.00	3.96	0.00	0.00	3.96
45	Station Piping Pkg & FDPS		0.00	49.12	0.00	0.00	49.12
46	Air Conditioning		0.00	28.93	0.00	0.00	28.93
47	Electrical Equipment Supply and Erection		0.00	16.12	0.00	0.00	16.12
48	Control Cable		0.00	0.08	0.00	0.00	0.08
49	400 kV Switchyard pkg		0.00	1.19	0.00	0.00	1.19
50	Malancha Ash Dyke Works	14(3)(iv)	0.00	946.00	0.00	1000.00	1946.00
51	Enabling Works (Construction of two lane bridge on Ganga Feeder Canal)	14(1) with Regulation 54	0.00	0.00	5700.00	0.00	5700.00
52	**Sub total Additional Capitalization**		**19121.47**	**4583.30**	**5700.00**	**1000.00**	**30404.76**
53	**De-capitalization/ Adjustments**						
54	De-capitalization of Spares		(-)153.37	0.00	0.00	0.00	(-)153.37
55	De-capitalization of MBOA		(-)6.69	0.00	0.00	0.00	(-)6.69
56	Reversal of IDC in various packages		(-)56.71	0.00	0.00	0.00	(-)56.71

Sl. No .	Head of Work /Equipment	Regulation	2014-15	2015-16	2016-17	2017-18	Total
57	Price Adjustment Under various Packages/ Assets		(-)69.26	0.00	0.00	0.00	(-)69.26
58	**Subtotal De-capitalization/ Adjustments**		(-)**286.03**	0.00	0.00	0.00	(-)**286.03**
59	**Discharge of Liabilities**		**1190.55**	0.00	0.00	0.00	**1190.55**
60	**Total Additional capital expenditure Claimed**		**20025.99**	**4583.30**	**5700.00**	**1000.00**	**31309.29**
61	**Exclusions**		(-)**27.60**	**0.00**	**0.00**	**0.00**	(-)**27.60**
62	**Total Additional capital expenditure**		**19998.38**	**4583.30**	**5700.00**	**1000.00**	**31281.38**

20. The projected additional capital expenditure claimed by the petitioner has been discussed in the succeeding paragraphs.

Deferred Works upto the cut-off date

21. The petitioner has claimed total projected additional capital expenditure of ₹19121.47 lakh in 2014-15 in respect of works indicated in SI. No. 1 to 30 and S.No.49 in the table under para 19 above. The petitioner has submitted that these works are within original scope of works and deferred for execution up to the cut-off date of the generating station and includes several civil works, coal handling packages, DM Plant, cooling tower, electrical system, IT and satellite communication system, hospitals including ₹135.47 lakh for Malancha Ash Dyke works, Ash handling system and Ash Water Recycling System (AWRS). Accordingly, the petitioner has prayed that the Commission may allow the capitalization of these items under Regulation 14(1)(ii) of the 2014 Tariff Regulations.

22. The respondent, GRIDCO has submitted that the petitioner has not furnished any document in support of the works claimed under the original scope and deferred for execution. In response, the petitioner has submitted that additional capitalization was projected for works the under original scope and deferred for execution after COD

under various packages during the year 2014-15 i.e within the cut-off date of 31.3.2015 and the details of all such works and packages have been submitted to the Commission. The petitioner has further submitted that the additional capitalization projected form part of such works which were under execution and are expected to be capitalized in the year 2014-15.

23. We have examined the matter. As stated, the cut-off date of the generating station in terms of Regulation 3(11) of the 2009 Tariff Regulations is 31.3.2015. It is observed that the works claimed by the petitioner during the year 2014-15 are works which have been deferred for execution and are within the original scope of work and upto the cut-off date. Considering the fact that these deferred works are within the original scope of works and within the cut-off date, we are inclined to allow the capitalization of these works. The petitioner has submitted that the 1st raising ash dyke Lagoon-II has been completed in the year 2014-15 and only part work has been completed and to be capitalized in the year 2014-15. Accordingly, the total additional capital expenditure of ₹19121.47 lakh in 2014-15 has been allowed under Regulation 14(1)(ii) of the 2014 Tariff Regulations.

Deferred Works after the cut-off date

24. The petitioner has claimed total projected additional capital expenditure of ₹3603.79 lakh in 2015-16 in respect of works indicated SI. No. 31 to 40 and S.No.43 to 48 in the table under para 19 towards Township and colony, Main plant civil works, Offsite civil works, Stores and electrification, Chimney, Condensate polishing unit, Control & Instrumentation, Water pre-treatment system package, CW system, DM plant, Drainage and piping, Air conditioning and ventilation. The petitioner has submitted that these works are within the original scope of work but have got delayed.

Accordingly, the petitioner has claimed the capitalization of these works and has prayed that the same may be allowed under Regulation 14(1) in exercise of Power to relax under Regulation 54 of the 2014 Tariff Regulations.

25. The respondent, GRIDCO has submitted that the Commission may not consider the prayer of petitioner to exercise the 'Power to Relax' as the same can be invoked only for technical and procedural considerations and not for commercial and financial considerations.

26. We have considered the submission of the parties. It is noticed that these works which were approved by order dated 24.8.2016 have been deferred for execution after the cut-off date of the generating station. The petitioner had sufficient time period of three years from the COD of the generating station till the cut-off date (31.3.2015) for execution of these works. It is however noticed that the petitioner has also not submitted any reasons/justifications for the delay in completion of the said works and the steps taken by the petitioner to mitigate the delay in the execution. Accordingly, in our view there is no reason for us to consider the claim of the petitioner in exercise of the power to relax and allow the capitalization. Hence, the claim of the petitioner for capitalization of the said works in 2015-16 is not allowed.

Ash dyke works, Ash handling and Ash Water Recycling System

27. The petitioner has claimed additional capital expenditure of ₹946.00 lakh in 2015-16 towards 1st raising of Malancha Ash dyke Lagoon-2 and ₹1000.00 lakh during 2017-18 towards 2nd raising of Malancha Ash dyke Lagoon-1 and ₹27.93 lakh and ₹5.57 lakh for Ash Handling system and Ash Water Recycling System (AWRS) respectively in 2015-16. The petitioner has submitted that these works are within the

original scope of work but have been delayed and accordingly the capitalization has been claimed under Regulation 14(1) read with Regulation 54 (power to relax). The petitioner has further submitted that no separate ash dyke was envisaged for Stage-III of the generating station and Malancha Ash dyke of Stage-I was envisaged for ash disposal. It has also stated that since the generating station is in operation from 4.4.2012 the raising of dyke has becomes necessary. The petitioner vide affidavit dated 5.11.2015 has also submitted that part work of 1st raising of ash dyke Lagoon-2 has been completed in 2014-15 and a major portion of it shall be capitalized in 2015-16. Accordingly, the petitioner has requested to allow the capitalization for ash dyke raising under Regulation 14(3) (iv) of the 2014 Tariff Regulations.

28. The respondent, GRIDCO has submitted that no documents have been submitted by the petitioner to substantiate the claims for additional capitalization. It has also submitted that since the work has been projected by the petitioner to continue for a major part of the 2014-19 period, the petitioner is expected to file necessary documents in support of the claim failing which the claim is liable to be rejected by the Commission. In response, the petitioner has submitted that Regulation 14(3)(iv) of 2014 Tariff Regulations provides for the capitalization of deferred works relating to ash pond or ash handling system in the original scope of work and accordingly the petitioner has claimed the expenditure towards the said works.

29. We have examined the matter. It is observed that the works of Ash handling system, Ash dyke works, AWRS etc are within the original scope of works and have been deferred after the cut-off date of the generating stations. These works are continuous in nature during the entire operational lifetime of the generating station. As the said expenditure are deferred works within the original scope of works of the

project, the additional capital expenditure claimed is allowed under Regulation 14(3)(iv) of 2014 Tariff Regulations. Accordingly, the claim for ₹946.00 lakh in 2015-16 towards 1st raising of Malancha Ash dyke Lagoon-2 and ₹1000.00 lakh during 2017-18 towards 2nd raising of Malancha Ash dyke Lagoon-1 and ₹27.93 lakh and ₹5.57 lakh for Ash Handling system and Ash Water Recycling System (AWRS) respectively is allowed. The petitioner is however directed to submit on affidavit, the details of work done under this head along with proper details/justification for the actual capital expenditure incurred during the period 2014-19, at the time of truing-up in terms of Regulation 8 of the 2014 Tariff Regulations.

Enabling works (Construction of two Lane Bridge on Ganga Feeder Canal)

30. The petitioner has claimed total projected additional capital expenditure of ₹5700.00 lakh in 2016-17 towards the Construction of two lane bridge on Ganga Feeder Canal under Regulation 14(1) in exercise of Power to relax under Regulation 54 of the 2014 Tariff Regulations. In justification of the same, the petitioner has submitted that at present only one old (40 years old) narrow public bridge (single lane) exists across the Farakka Feeder Canal owned by Farraka Barrage Projects Authority (FBPA), which connects the Farakka Station and Farakka Township/ NH-34.The petitioner has further submitted that since the existing bridge is very narrow the traffic movement is only in one direction at any instant and the traffic from the opposite direction waits on other side resulting in vehicular queue. It has also submitted that the problem has been aggravated due to increased vehicular movement with time and increase in station capacity and over 600 or more loaded vehicles and private vehicles cross the bridge daily including ash trucks and containers that supply materials for day

to day working of generating station. It has further submitted that in the event of breakdown of the bridge, the entire traffic along with the vehicles carrying the material for plant's operation comes to a halt. Accordingly, the petitioner has submitted that in view of these difficulties and increased movement of ash trucks due to increased dry ash evacuation, containers etc. the expenditure towards the bridge across Feeder Canal may be allowed.

31. The respondent, GRIDCO has submitted that the documents filed by the petitioner indicate that the need for construction of two lane bridge on Ganga Feeder Canal is not genuine as the entire project work carrying heavy equipments has been completed without any necessity for such bridge. It has further submitted that this project had huge cost overrun and accordingly, the claim of the petitioner for ₹5700.00 lakh in 2016-17 may not be allowed and the petitioner may be directed to meet the expenditure under CSR as the two lane bridge would also be used by the public.

32. In response, the petitioner has reiterated its submissions made in the petition and has prayed that the Commission may allow the same. The petitioner has submitted that the completed cost of the project is ₹221628 lakh (₹4.43 Crore/MW) (excluding IDC of ₹3.17 Crore, soft cost, allowed by the Commission vide order dated 21.1.2014) which is much less than the benchmark capital cost of ₹4.92 Crs/MW (Dec 2011 cost) after reduction of IDC (soft cost) from the capital cost. Accordingly, the petitioner has prayed that the expenditure may be allowed.

33. In response to the directions of the Commission vide Record of Proceedings of the hearing dated 17.11.2015, the petitioner vide affidavit dated 7.1.2016 has submitted detailed justification for the same claim as under:

“Para 5(a)(i): *It is submitted that at present there exists only one very old (about 40 years old) single lane bridge across the Farakka Feeder Canal owned and maintained by Farakka Barrage Authority (FBA). This existing bridge connects the Farakka Station and Farakka Township / NH-34 thereby acting as a life line to the Farakka Station. NTPC personnel, all staff and contract labourers use this bridge to reach the station. Further, as the existing bridge is very narrow (single lane), at any particular time the traffic movement is only in one direction and meanwhile traffic from the opposite direction waits on the other side of the bridge resulting in long vehicular queue. Once the traffic clears in one direction, the vehicle movement starts from the opposite direction and vice versa. The problem has further aggravated due to the increased vehicular movement with time and increase in Station capacity. Further, many loaded vehicles and trucks cross (in both directions) the bridge daily including ash trucks and containers that supply materials for day to day working of plant. If there is a breakdown of one vehicle (four or more wheeler) on the bridge, the traffic comes to the halt. There have been instances, in such cases when NTPC personnel/ contract staff has to park the vehicles on the far end of the bridge and walk over the bridge on foot to reach the Station for its operation/ maintenance requirements. The materials required for smooth running of the Station on daily basis has to wait for the bridge to be cleared off for vehicular movement or travel more distance (approx 30-35 kms via Dhuliyan-Pakur) to reach the Station. The single lane existing bridge was constructed during the same period when the Farakka Barrage was commissioned in the year 1975 i.e. the existing bridge is about 40 years old and is presently in a very precarious and unsafe condition due to extensive usage/ plying of heavy vehicles over the years. The same being very old also requires lot of repair work for its survival on day to day basis. In such cases the movement of the traffic on the bridge is stopped which leads to traffic jams/ congestion. Due to the poor condition the movement of heavy vehicles on to the bridge is also restricted. In this regard, a snapshot of this existing narrow bridge is attached at Annexure-A. The image also shows a Caution Board at the entry of the bridge reading “BRIDGE IS IN DANGER, HEAVY VEHICLES ARE NOT ALLOWED”*

As the movement of material and operating staff (including contract persons) for the Station is from this existing single lane bridge, it is humbly submitted that due to above mentioned difficulties, it became necessary for NTPC to construct a separate new Bridge. In short, this bridge (the new one under construction) will act as a life line for Farakka Station.

Para 5(a)(ii) : *It is humbly submitted that the requirement of two lane bridge i.e. one lane for onward and second lane for return traffic, has arisen due to regular problem of traffic jam/ congestion being faced as elaborated in Para-1 due to all round increase in vehicular traffic in the locality including 2 and 4 wheelers compared to time when Farakka Stage-I was constructed. Further with increased* *plant capacity and dry ash utilization from plant, the movement of ash trucks/containers has also increased causing further traffic congestion. It is further submitted that since the new bridge was required to be constructed from safety point of view also due to the poor condition of existing bridge, the day to day difficulties already being faced were also planned to be mitigated by construction of this new two lane bridge. The execution cost (excluding material cost) of construction of 2 lane bridge/1 lane bridge may not vary much and may be comparable and hence would be always prudent to go for 2 Lane Bridge looking at the current and future requirements.*

Therefore, keeping in view of the movement of ash trucks / containers and other vehicles, dilapidated condition of the existing bridge which is susceptible to accident, submissions made at Para (1) above and difficulties faced by NTPC, it became necessary to construct a separate two lane bridge over feeder canal connecting Farakka Station to NTPC Farakka Township/ NH-34 for smooth operation of Station and for safety of Men and Materials. In this regard few letters/ correspondence showing the precarious condition of the bridge is attached at ***Annexure-B****.*

Para 5(a)(iii) : *It is submitted that NTPC had earlier taken up construction of bridge (at location RD 16.5) on Feeder Canal in 1981 (at the time of Farakka Stage-I implementation) to meet the traffic requirement over Feeder Canal between Farakka Station and NTPC Township/ NH-34. The contract of bridge was awarded to Farakka Barrage Authority (FBA). However, the bridge could not be completed due to arbitration issues by the sub-agency of FBA. Later work was awarded to NPCC, however, NPCC also couldn't execute the work. Subsequently, NTPC took over and issued tenders for undertaking the balance work in 2005 and 2007 but due to non-response of the parties the work could not be awarded. In above circumstances, NTPC approached RITES in 2007 to undertake the completion of balance work of bridge (RD 16.5). Since the existing unfinished structure of the unfinished bridge were old, RITES proposed to first study the viability of the existing structure and thereafter undertake the construction if the structure were proved to be viable. This proposed study was to be carried out in Two Phases with a total duration of 14 months. On 13.10.2009, M/s RITES submitted a report on the study recommending that the structure foundation were grossly inadequate for stability and safety point of view under the present and future loading especially in seismic conditions. Keeping the future increase in functional demands also, high investment would be required towards rehabilitation and strengthening of present structure with less residual life of retained portion and maintenance cost would be more. Considering the safety which is of paramount importance and costs involved, it was recommended by RITES to* *construct a new bridge instead of completing the balance works of unfinished bridge.*

Based on the outcome of the study as brought out by M/s RITES in its reports in October 2009, regular traffic congestion/ jams on the existing single lane bridge, dilapidated condition of the existing bridge and keeping in view the safety of persons/ material, decision was taken to construct this new bridge. Accordingly, permission was sought from Farakka Barrage Authority for construction of New Two Lane Bridge over feeder canal on 09.08.2010.

Further, it is humbly submitted that the work of construction of two lane bridge has been included in the original scope of works under Revised Cost Estimates (RCE) duly approved for Farakka Stage-III. Extracts of RCE is attached at ***Annexure-C****.*

Para 5(a)(iv) : *It is clarified that the Two Lane Bridge over the Feeder Canal under construction is common for all the stages of Farakka Station. It is further submitted that it is only the approach bridge for the employees/ operating staff including the contract/ agency persons from Field Hostel Complex/ Township (TTS)/ NH-34 side to reach the Farakka Station. Thus this bridge acts as life line to the power station therefore, it may not be considered under CSR. This new bridge connecting the township/ NH-34 and station will also be used by general public living in and around the plant area similar to the existing single lane bridge. Similarly, this new bridge shall be used for all Stages and for local public also.*

Although the New Bridge is commonly serving both Stages of Farakka Station i.e. Farakka Stage-I&II and Farakka Stage-III, however, the capital cost has been considered in the instant station as it was included in the original scope of works of Farakka Stage-III. The cost may be apportioned to both the stages of Farakka Station by the petitioner if Hon'ble Commission so directs."

34. We have considered the matter. It is observed that the construction of the two-lane Bridge over Ganga Feeder Canal is necessary for smooth movement of traffic as well as for the heavy trucks for works related to this generating station. It is also observed that the two-lane Bridge is common to Stages I, II and III of this generating station and accordingly serves all of the stages of this generating station. Considering the fact that the two lane bridge is common to all the stages and is an approach bridge for employees/operating staff/agencies/person from township/, and would contribute to the efficient operation of the generation station, we are inclined to allow the

additional capital expenditure of ₹5700.00 lakh claimed by the petitioner. It is noticed that the provision of Regulation 14(1) or 14(3) do not provide for capitalization of additional capital expenditure which have become necessary for successful and efficient plant operation. Since the expenditure of the two-lane Bridge over Ganga Feeder Canal is necessary for smooth operation of the generating station as narrated above, we in exercise of the power under Regulation 54 of the 2014 Tariff Regulation, relax the provision of Regulation 14(3)(viii) and allow the additional capital expenditure incurred in respect of this generation stations. However, out of the total expenditure of ₹5700.00 lakh claimed, only the proportionate cost of ₹1357.00 lakh has been allowed in respect of this generating station after apportioning the cost between Stage- I&II and Stage III of Farakka generating station. The remaining cost of ₹4343.00 lakh shall be considered from special allowance of Stage I and II.

Exclusions

35. The petitioner has claimed (-) ₹27.60 lakh towards exclusions, which includes an amount of (-)₹17.30 lakh towards recovery of LD, (-)₹10.85 lakh towards risk cost recovery from contractors, (-)₹0.06 lakh towards reversal of liability, and ₹0.61 lakh towards Inter Unit transfer. The Commission vide order dated 21.1.2014 in Petition No. 204/GT/2011 had the impact of time overrun disallowed by the Commission shall be shared by the parties in the ratio 50:50.

36. In line with the above direction, the benefits accrued through recovery of LD and Risk & Cost recovered by the petitioner shall be shared by the petitioner with the beneficiaries of the generating station. Accordingly, 50% of the LD recovered and risk & cost recovered from the contractors by the petitioner is disallowed from exclusion

and has been considered in the additional capital expenditure in 2014-15 reducing the capital cost, as indicated below:.

(₹in lakh)

	2014-15
Exclusion claimed	
LD Recovery	(-)17.30
Risk & Cost Recovery from Contractors	(-)10.85
Inter Unit Transfer	0.61
Reversal of Liability	(-)0.06
Total exclusion claimed	(-)**27.60**
Exclusion not allowed	(-)**14.07**
Exclusion Allowed	(-)**13.53**

37. Based on the above discussions, the projected additional capital expenditure allowed for the period 2014-19 is summarized as under:

(₹in lakh)

Sl. No.	**Head of Work /Equipment**	**Regulation**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**Total**
1	Township and Colony	**14(1) (ii)**	1171.28	0.00	0.00	0.00	1171.28
2	Main Plant Civil Works		2616.77	0.00	0.00	0.00	2616.77
3	Approach roads		1585.42	0.00	0.00	0.00	1585.42
4	Stores Civil & Electrification		47.02	0.00	0.00	0.00	47.02
5	CW and Offsite civil works		788.78	0.00	0.00	0.00	788.78
6	Administrative & Service building		197.30	0.00	0.00	0.00	197.30
7	Chimney		24.24	0.00	0.00	0.00	24.24
8	Construction Tools/ T&P		36.29	0.00	0.00	0.00	36.29
9	Workshop & Lab equipments		28.37	0.00	0.00	0.00	28.37
10	Fire Fighting Tender & Equipments		89.23	0.00	0.00	0.00	89.23
11	Main Plant Turnkey (SG) & (TG)		3054.59	0.00	0.00	0.00	3054.59
12	CPU (Condensate Polishing Unit)		1.58	0.00	0.00	0.00	1.58
13	C&I Package		68.45	0.00	0.00	0.00	68.45
14	Ash Handling & AWRS		8401.99	0.00	0.00	0.00	8401.99
15	Coal Handling Package		0.05	0.00	0.00	0.00	0.05
16	CW System-Equipment		194.79	0.00	0.00	0.00	194.79
17	Water pre treatment system package		36.58	0.00	0.00	0.00	36.58
18	DM Plant		2.99	0.00	0.00	0.00	2.99
19	Cooling Tower		4.67	0.00	0.00	0.00	9.69

Sl. No .	Head of Work /Equipment	Regulation	2014-15	2015-16	2016-17	2017-18	Total
20	FDPS & Station Piping		5.24	0.00	0.00	0.00	5.24
21	Air Conditioning & Ventilation		8.74	0.00	0.00	0.00	8.74
22	Electrical System		71.25	0.00	0.00	0.00	71.25
23	Switchyard		14.48	0.00	0.00	0.00	14.48
24	IT & Satellite Communication System		32.14	0.00	0.00	0.00	32.14
25	Furniture and Fixtures		11.37	0.00	0.00	0.00	11.37
26	Electrical Installations		27.12	0.00	0.00	0.00	27.12
27	Hospital Equipments		45.48	0.00	0.00	0.00	45.48
28	Vehicles		3.28	0.00	0.00	0.00	3.28
29	Office Equipments		30.35	0.00	0.00	0.00	30.35
30	Capitalisation of spares		386.16	0.00	0.00	0.00	386.16
31	Malancha Ash Dyke Works		135.47	0.00	0.00	0.00	135.47
32	DRAINS & Drainage System	14(1) with Regulation 54	0.00	0.00	0.00	0.00	0.00
33	Stores Civil Works		0.00	0.00	0.00	0.00	0.00
34	Misc Civil Works-M. Plant		0.00	0.00	0.00	0.00	0.00
35	Off - site Civil Package		0.00	0.00	0.00	0.00	0.00
36	Chimney – Civil		0.00	0.00	0.00	0.00	0.00
37	Township Facilities/ works		0.00	0.00	0.00	0.00	0.00
38	Main plant turnkey		0.00	0.00	0.00	0.00	0.00
39	Main plant civil works package		0.00	0.00	0.00	0.00	0.00
40	Condensate polishing plant		0.00	0.00	0.00	0.00	0.00
41	Control & instrumentation		0.00	0.00	0.00	0.00	0.00
42	Ash handling system		0.00	27.93	0.00	0.00	27.93
43	Ash water recirculation system pkg		0.00	5.57	0.00	0.00	5.57
44	DM plant & CW treatment system		0.00	0.00	0.00	0.00	0.00
45	Station piping package & FDPS		0.00	0.00	0.00	0.00	0.00
46	Air conditioning		0.00	0.00	0.00	0.00	0.00
47	Electrical equipment supply & erection		0.00	0.00	0.00	0.00	0.00
48	Control Cable		0.00	0.00	0.00	0.00	0.00
49	400 kV Switchyard package		0.00	0.00	0.00	0.00	0.00
50	Malancha Ash Dyke Works	14(3)(iv)	0.00	946.00	0.00	1000.00	1946.00
51	Enabling Works (Construction of two lane bridge on Ganga Feeder Canal)	14(1) with Reg 54	0.00	0.00	1357.00	0.00	1357.00
52	**Sub total Additional**		**19121.47**	**979.50**	**1357.00**	**1000.00**	**22457.97**

Sl. No.	Head of Work /Equipment	Regulation	2014-15	2015-16	2016-17	2017-18	Total
	Capitalization						
53	**De-capitalization/ Adjustments**						
54	De-capitalization of Spares		(-)153.37	0.00	0.00	0.00	(-)153.37
55	De-capitalization of MBOA		(-)6.69	0.00	0.00	0.00	(-)6.69
56	Reversal of IDC in various packages		(-)56.71	0.00	0.00	0.00	(-)56.71
57	Price Adjustment Under various Packages/ Assets		(-)69.26	0.00	0.00	0.00	(-)69.26
58	**Subtotal De-capitalization/ Adjustments**		(-)**286.03**	0.00	0.00	0.00	**(-)286.03**
59	**Discharge of Liabilities**		**1190.55**	0.00	0.00	0.00	**1190.55**
60	**Exclusion not allowed**		(-)**14.07**	0.00	0.00	0.00	**(-)14.07**
61	**Total Additional Capitalisation allowed**		**20011.92**	**979.50**	**1357.00**	**1000.00**	**23348.42**

38. Accordingly, the capital cost for the period 2014-19 in respect of the generating station is worked out and allowed as under:

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	237698.86	257710.78	258690.29	260047.29	261047.29
Add: Additional capital expenditure	20011.92	979.50	1357.00	1000.00	0.00
Closing Capital Cost	257710.78	258690.29	260047.29	261047.29	261047.29

Debt-Equity Ratio

39. 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-equtiy 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 f 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 ration 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.

40. Accordingly, the gross normative loan and equity amounting to ₹166389.20 lakh and ₹71309.66 lakh, respectively as on 31.3.2014 as considered in order dated 24.8.2016 read with corrigendum dated 26.10.2016, has been considered as gross normative loan and equity as on 1.4.2014. Further, 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 the 2014 Tariff Regulations.

Return on Equity

41. 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.*

42. 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.

43. The petitioner has claimed return on equity considering base rate of 15.5% and effective tax rate of 22.584% during 2014-15 and 23.399% from 2015-16 to 2018-19. The petitioner has submitted, vide affidavit dated 21.6.2016, that the effective tax rate of 22.584% is based on the actual profit and tax paid for the year 2014-15.

44. The respondent, GRIDCO has submitted that the petitioner has considered effective tax rate of 23.9394% in Form 3 for each year of the tariff period for which no details have been furnished. It has therefore requested that the effective tax rate be computed in accordance with Regulation 25 of the Tariff Regulations, 2014.

45. We have examined the matter. It is observed that the above regulation specify the computation of effective tax rate on the basis of tax paid. However, we deem it proper to allow grossing up on MAT rate considering the fact that the matter is

disposed of 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 truing-up. Accordingly, return on equity has been worked out as under:

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Notional Equity- Opening	71309.66	77313.23	77607.08	78014.18	78314.18
Addition of Equity due to additional capital expenditure	6003.58	293.85	407.10	300.00	0.00
Normative Equity-Closing	77313.24	77607.09	78014.19	78314.19	78314.19
Average Normative Equity	74311.45	77460.16	77810.64	78164.19	78314.19
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) annualised	**14572.47**	**15263.52**	**15332.59**	**15402.25**	**15431.81**

Interest on Loan

46. 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 orthe 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."

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

(a) The gross normative loan of ₹166389.20 lakh as on 1.4.2014 has been considered.

(b) Cumulative repayment of loan of ₹22443.35 lakh as on 31.3.2014 as considered in order dated 24.8.2016 in Petition No.282/GT/2014 read with corrigendum dated 26.10.2016 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 for the period has been considered as repayment of normative loan during the respective year for the period 2014-19.

(e) In line with the provisions of the regulation, 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.

48. 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	166389.21	180302.72	180988.37	181938.27	182638.27
Cumulative repayment of loan upto previous year	22443.35	34732.79	47761.93	60850.02	73997.57
Net Loan Opening	143945.86	145664.76	133321.27	121183.08	108735.53
Addition due to additional capital expenditure	14008.34	685.65	949.90	700.00	0.00
Repayment of loan during the year	12499.51	13029.14	13088.09	13147.56	13172.79
Less: Repayment adjustment on account of de-capitalization	210.07	0.00	0.00	0.00	0.00

	2014-15	2015-16	2016-17	2017-18	2018-19
Net Repayment	12289.44	13029.14	13088.09	13147.56	13172.79
Net Loan Closing	145664.76	133321.27	121183.08	108735.53	95562.74
Average Loan	144805.31	139493.02	127252.18	114959.31	102149.13
Weighted Average Rate of Interest of loan	9.8561%	9.8234%	9.7848%	9.7376%	9.6401%
Interest on Loan	**14272.16**	**13703.01**	**12451.38**	**11194.27**	**9847.29**

Depreciation

49. 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 on1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2014 from the gross depreciable value of the assets.

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

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

50. In terms of above regulations, the weighted average rate of depreciation of 5.0461% has been considered for calculation of depreciation. The cumulative depreciation amounting to ₹22772.13 lakh as on 31.3.2014 as considered in order dated 24.8.2016/26.10.2016 to has been considered for the purpose of tariff.

51. Accordingly, depreciation has been computed as follows:

(₹ *in lakh)*

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	237698.86	257575.31	258554.82	259911.82	260911.82
Add: Additional Capital Expenditure	20011.92	979.50	1357.00	1000.00	0.00
Closing Capital Cost	257710.78	258690.29	260047.29	261047.29	261047.29
Average Capital Cost	**247704.82**	**258200.54**	**259368.79**	**260547.29**	**261047.29**
Balance useful life at the beginning of the period	23.00	22.00	21.00	20.00	19.00
Depreciable value (excluding land)@ 90%	222934.34	232380.48	233431.91	234492.56	234942.56
Balance depreciable Value	200162.21	197137.59	185159.88	173132.44	160434.88
Depreciation (annualized)	**12499.51**	**13029.14**	**13088.09**	**13147.56**	**13172.79**
Cumulative depreciation up to previous year	22772.13	35239.48	48261.78	61343.03	74483.75
Less: Cumulative Depreciation adjustment on account of un-discharged liabilities	0.00	0.00	0.00	0.00	0.00
Less: Cumulative Depreciation reduction due to de-capitalization	28.75	0.00	0.00	0.00	0.00
Cumulative depreciation (at the end of the period)	35242.89	48272.03	61360.12	74507.68	87680.47

O&M Expenses

52. Regulation 29 (1) (c) of the 2014 Tariff Regulations provides 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
16.00	17.01	18.08	19.22	20.43

53. The proviso to the said regulation provides as under:

500 MW and above	Additional 3rd & 4th units	0.90
	Additional 5th & above units	0.85

54. The year-wise O&M expenses claimed by the petitioner in terms of the above said norms are as under:

(₹in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
8000.00	8505.00	9040.00	9610.00	10215.00

55. In terms of the above proviso, the O&M expenses for the units of this generating station are required to be worked out by multiplying the normative O&M expenses with a factor of 0.9. Accordingly, the year-wise O&M expenses allowed in terms of the above said norms are as under:

(₹in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
7200.00	7654.50	8136.00	8649.00	9193.50

Water Charges

56. 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"

57. The petitioner vide affidavit dated 5.11.2015 has submitted the actual water consumption and water charges paid for 2012-13 and 2013-14 as follows:-

Sl No.	Year	Water Consumption (m^3)	Rate (₹/1000 Gallon)	Amount (in ₹ Lakh)	Remark
1.	2012-13	16283024	₹5.20 per 1000 Gallon	186.30	1 Gallon = 4.546 x 10^{-3} m^3
2.	2013-14	17326849		198.20	

58. The petitioner has claimed water charges for the period 2014-19 as follows:-

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
198.19	210.77	224.16	238.39	253.53

59. 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. The water consumption is considered as per the actual consumption of 2013-14 as submitted by the petitioner and the same has been considered for the tariff period 2014. Water charges has been considered in the terms of the details/rates contained in the communication made between the petitioner and Farakka Barrage Project, Ministry of Water Resources, Government of India. Accordingly, water charges are allowed as under :-

	2014-15	2015-16	2016-17	2017-18	2018-19
Water consumption projected for Stage III (m^3)	17326849.00	17326849.00	17326849.00	17326849.00	17326849.00
Rate or Water Charges.	5.20	₹ 5.20 per 1000 Gallon (1 Gallon = 4.54608 x 10^{-3} $m^{3)}$			
Water charges allowed (in ₹ lakh)	**198.19**	**198.19**	**198.19**	**198.19**	**198.19**

60. The petitioner is granted liberty to approach the Commission to claim water consumption charges at the time of true-up, based on the actual amount billed for the same with proper documentary evidence.

61. Accordingly, the total O&M expenses including water charges as 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 as claimed	8000.00	8505.00	9040.00	9610.00	10215.00
O&M Expenses as allowed	7200.00	7654.50	8136.00	8649.00	9193.50
Water charges as claimed	198.19	210.77	224.16	238.39	253.53
Water charges as allowed	198.19	198.19	198.19	198.19	198.19
Total O&M Expenses as claimed (including Water charges)	8198.19	8715.77	9264.16	9848.39	10468.53
Total O&M Expenses as allowed(including Water charges)	**7398.19**	**7852.69**	**8334.19**	**8847.19**	**9391.69**

Capital spares

62. 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

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

Target Availability (%)	83.00
Heat Rate (kcal/kWh)	2436.62
Auxiliary Energy Consumption (%)	5.75
Specific Oil Consumption (ml/ kWh)	0.50

64. The operational norms claimed by the petitioner are in accordance with Regulation 36 of the 2014 Tariff Regulations and discussed as under:

Normative Annual Plant Availability Factor (NAPAF)

65. 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.

66. The petitioner has considered the target availability norm of 83% during 2014-19. In view of the above submissions, 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, in view of the above provision the target availability of 83% is allowed for the period 2014-15 to 2016-17 and 85% for the period 2017-18 & 2018-19 in terms of the Regulation 36(A) (a) of the 2014 Tariff Regulations.

Heat Rate (kCal/kWh)

67. The petitioner has claimed Gross Station Heat Rate of 2436.62 kCal/kWh for existing coal. The COD of the generating station was in 4.4.2012. Regulation 36(C)(b) of the 2014 Tariff Regulations, provides for maximum design unit heat rate (kcal/kwh) for calculation of heat rate of new thermal generating stations achieving COD on or after 1.4.2009 till 31.3.2014. The petitioner has furnished the plant characteristics as under:-

Guaranteed Turbine Heat Rate (kcal/Kwh)	1944.4
Guaranteed Boiler Efficiency (%)	83.39%

68. Accordingly, the Heat rate of the generating station is calculated and allowed as under:

Guaranteed Design Gross Turbine Cycle Heat Rate	1944.4
Guaranteed Boiler Efficiency	83.39%
Multiplying Factor	1.045
Gross Station Heat Rate	2436.62

Auxiliary Energy Consumption

69. The petitioner has claimed Auxiliary Energy Consumption at 5.75% during 2014-19 period. Regulation 36(E)(a) of 2014 Tariff Regulations, provides for Auxiliary Energy Consumption of 5.25% for coal based generating stations of 500 MW sets with steam driven boiler feed pump. It further provides that for thermal generating stations with induced draft cooling towers, the norms shall be further increased by 0.5%. Accordingly, the Auxiliary Energy Consumption to be considered is 5.75% as per the norms and the same is allowed for the purpose of tariff computations.

Specific Oil Consumption

70. Regulation 36(D)(a) of the 2014 Tariff Regulations, provides 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

71. 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 the normative annual plant availability factor, and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;

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

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

(vi) Operation and maintenance expenses for one month.

Fuel Components and Energy Charges in working capital

72. The petitioner has claimed cost for fuel components in working capital based on "as fired" GCV of coal procured and burnt for the preceding three months of January, 2014, February, 2014 and March, 2014 and secondary fuel oil for the preceding three months of January, 2014, February, 2014 and March, 2014, as under:

(₹in lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1A	Cost of Coal for Stock for 30 days	8344.49	8367.35	8344.49	8344.49	8344.49
1B	Cost of Coal for Generation for 30 days	8344.49	8367.35	8344.49	8344.49	8344.49
2	Cost of Main Secondary Fuel Oil for 2 months	150.09	150.50	150.09	150.09	150.09

73. The respondent, GRIDCO has submitted that the petitioner has not submitted GCV of coal 'as received' and not yet made any arrangement for measurement of GCV on 'as received' basis. The respondent has further submitted that there is huge gap between the weighted average GCV of coal as billed and 'as fired' basis for the month of January-2014, February-2014 and March-2014.

74. The issue of “as received” GCV for computation of energy charges was challenged by NTPC and other generating companies through writ petition in the 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.

75. 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.”*

76. Further, the petitioner has claimed energy charge rate (ECR) of ₹294.873 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 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. Hence, the Commission has decided to compute fuel components and the energy charges in the working capital by provisionally taking the GCV of coal on as "billed basis" and allowing an adjustment for total 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

77. 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, 2016-17 and 85% NAPAF for the years 2017-18 and 2018-19 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:

(₹ in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Cost of Coal for stock– 30 days	5597.75	5597.75	5597.75	5732.64	5732.64
Cost of Coal for generation– 30 days	5597.75	5597.75	5597.75	5732.64	5732.64
Cost of secondary fuel oil – two months	150.09	150.50	150.09	153.71	153.71

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

	Unit	2014-19
Capacity	MW	500.00
Gross Station Heat Rate	kCal/kWh	2436.62
Aux. Energy Consumption	%	5.75%
Weighted average GCV of oil (As fired)	kCal/lt.	9613.33
Weighted average GCV of Coal (As Billed)	kCal/kg	5054.77
Adjustment on account of coal received at the generating station for equilibrated basis (Air dried) in the billed GCV of Coal India		*
Weighted average price of oil	Rs./KL	49542.41
Weighted average price of Coal	Rs./MT	3894.07
Rate of energy charge ex-bus	Rs/kWh	2.014**

** To be calculated by the petitioner based on the adjustment formula*

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

79. 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.

Maintenance spares

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

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
1639.64	1743.15	1852.83	1969.68	2093.71

81. 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:

(₹in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
1479.64	1570.54	1666.84	1769.44	1878.34

Receivables

82. 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
Variable Charges (two months)	11501.16	11532.67	11501.16	11778.30	11778.30
Fixed Charges (two months)	8884.84	9077.13	8970.05	8881.21	8757.28
Total	**20386.01**	**20609.80**	**20471.21**	**20659.51**	**20535.58**

O&M Expenses

83. O&M expenses for 1 month allowed for the purpose of working capital are as under:

(₹in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
616.52	654.39	694.52	737.27	782.64

Rate of interest on working capital

84. 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."

85. In terms of the above regulations, SBI PLR of 13.50% (Bank rate 10.00 + 350bps) 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 towards stock- 30 days	5597.75	5597.75	5597.75	5732.64	5732.64
Cost of coal towards generation- 30 days	5597.75	5597.75	5597.75	5732.64	5732.64
Cost of secondary fuel oil- 2 months	150.09	150.50	150.09	153.71	153.71
Maintenance Spares	1479.64	1570.54	1666.84	1769.44	1878.34
Receivables- 2 months	20386.01	20609.80	20471.21	20659.51	20535.58
O & M expenses- 1 Month	616.52	654.39	694.52	737.27	782.64
Total Working Capital	**33827.76**	**34180.74**	**34178.16**	**34785.20**	**34815.54**
Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
Interest on Working Capital	**4566.75**	**4614.40**	**4614.05**	**4696.00**	**4700.10**

86. Accordingly, 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
Depreciation	12499.51	13029.14	13088.09	13147.56	13172.79
Interest on Loan	14272.14	13703.01	12451.38	11194.27	9847.29
Return on Equity	14572.47	15263.52	15332.59	15402.25	15431.81
Interest on Working Capital	4566.75	4614.40	4614.05	4696.00	4700.10
O&M Expenses	7398.19	7852.69	8334.19	8847.19	9391.69
Total	**53309.07**	**54462.76**	**53820.30**	**53287.28**	**52543.68**

Month to Month Energy Charges

87. 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 formulae:*

(a) For coal based and lignite fired stations
ECR = {(GHR – SFC x CVSF) x LPPF / CVPF+SFC x LPSFi + LC x LPL} x 100 / (100 – AUX)

Where,
AUX = Normative auxiliary energy consumption in percentage.

CVPF = (a) Weighted Average Gross calorific value of coal as received, in kCal per kg, for coal based stations. (b)…. (c) In case of blending of fuel from different sources, the weighted average Gross calorific value of primary fuel shall be arrived in proportion to blending ratio.

CVSF = Calorific value of secondary fuel, in kCal per ml. ECR = Energy charge rate, in Rupees per kWh sent out.

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

LC = Normative limestone consumption in kg per kWh.

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

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

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

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

88. 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.

Application Fee and Publication Expenses

89. 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 2014-15 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 fee and the expenses of ₹273784.00 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.

90. 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.

91. Petition No. 280/GT/2014 is disposed of in terms of the above.

Sd/-	Sd/-	Sd/-	Sd/-
(Dr. M.K.Iyer)	**(A. S. Bakshi)**	**(A. K. Singhal)**	**(Gireesh B. Pradhan)**
Member	**Member**	**Member**	**Chairperson**