

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 266/GT/2014

Coram:

**Shri A. S. Bakshi, Member
Dr. M. K. Iyer, Member**

Date of Order : 09.03.2017

In the matter of

Approval of tariff of Indira Gandhi Super Thermal Power Project Stage- I (3x500 MW) for the period from 1.4.2014 to 31.3.2019

And in the matter of

Aravali Power Company Private Limited
NTPC Bhawan,
Core-7, SCOPE Complex,
7, Institutional Area, Lodhi Road,
New Delhi-110003)

.....Petitioner

Vs

1. Haryana Power Purchase Centre,
Shakti Bhawan, Sector-IV,
Panchkula, Haryana-134109
2. Tata Power Delhi Distribution Company Ltd (erstwhile North Delhi Power Ltd)
Grid Substation, Hudson road,
Kingsway Camp, Delhi-110009
3. BSES Rajdhani Power Ltd.,
BSES Bhawan,
Nehru Place, New Delhi-110019
4. BSES Yamuna Power Ltd.
Shakri Kiran Building,
Karkardooma, Delhi-110092

....Respondents

Parties present:

For Petitioner: Shri M G Ramachandran, Advocate, APCPL
 Ms Anushree Bardhan, Advocate, APCPL
 Shri K P S Gujral, APCPL
 Shri A Basu Roy, NTPC



For Respondents: Shri Vishal Anand, BRPL & BYPL
Shri Rahul Kinra, BRPL & BYPL
Ms Ranjana Roy, Advocate, TPDDL
Shri Pushkar Taimni, Advocate, TPDDL

ORDER

This petition has been filed by the petitioner, Aravali Power Company Private Limited (APCPL) for approval of tariff of Indira Gandhi Super Thermal Power Project (IGSTPP), Stage-I (3 x 500 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 (herein after referred to as “the 2014 Tariff Regulations”).

2. The petitioner, Aravali Power Company Private Limited (APCPL) is a Joint venture company incorporated under the Companies Act, 1956 with NTPC holding 50% share and 25% shares each being held by Haryana Power Generation Company Ltd (HPGCL) and Indraprastha Power Generation Company Ltd (IPGCL), respectively. The management and control of APCPL is vested with NTPC Ltd, a company owned and controlled by the Government of India. The petitioner has set up Indira Gandhi Super Thermal Power Project (IGSTPP) (“the generating station”) with a total capacity of 3 x 500 MW in Jhajjar District of the State of Haryana. The dates of commercial operation of these units of the generating station are as under:

	Date of commercial operation
Unit-I	5.3.2011
Unit-III	21.4.2012
Unit-III	26.4.2013

3. The Commission vide order dated 17.1.2017 in Petition No. 437/GT/2014 had revised the tariff of the generating station for the period 2009-14 after truing-up of the additional capital expenditure in terms of Regulation 6 (1) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as “the 2009 Tariff Regulations”), considering the capital cost of ₹761233.37 lakh as on 31.3.2014. Thereafter, the Commission after correction of certain clerical errors, revise the annual fixed charges of the



generating station by order dated 14.2.2017. Accordingly, the annual fixed charges approved by the Commission by said order dated 14.2.2017 is as under:

(₹ in lakh)

	2010-11 (5.3.2011 to 31.3.2011)	2011-12	2012-13 (1.4.2012 to 20.4.2012)	2012-13 (21.4.2012 to 31.3.2013)	2013-14 (1.4.2013 to 25.4.2013)	2013-14 (26.4.2013 to 31.3.2014)
Depreciation	13384.34	13975.06	14575.70	25034.01	25392.71	35377.80
Interest on Loan	23452.72	23877.77	24159.14	39221.36	38355.55	50333.87
Return on Equity	14524.20	18958.49	19743.77	29824.61	30577.81	43793.30
Interest on Working Capital	3994.97	4124.04	4168.74	14587.67	14648.02	20538.14
O&M Expenses	6870.00	7265.00	7680.00	15360.00	16240.00	23548.00
Secondary fuel oil cost	1626.61	1631.07	1626.61	4423.80	4423.80	7012.02
Total	63852.84	69831.44	71953.96	128451.45	129637.89	180603.13

4. The petitioner vide affidavit dated 5.8.2016 has revised the annual fixed charges of the generating station and has claimed capital cost and annual fixed charges for the period 2014-19 as under:

Capital Cost

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	811129.00	852555.74	881864.22	895364.22	895364.22
Add: Additional capital expenditure	41426.74	29308.48	13500.00	0.00	2500.00
Closing Capital Cost	852555.74	881864.22	895364.22	895364.22	897864.22
Average Capital Cost	831842.37	867209.98	888614.22	895364.22	896614.22

Annual Fixed Charges

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	39560.37	41096.47	40788.41	41098.25	41155.62
Interest on Loan	53739.27	51950.82	49082.41	45086.76	40646.79
Return on Equity	48938.40	51266.32	52531.66	52930.69	53004.59
Interest on Working Capital	21799.43	22044.43	21958.75	22400.88	22417.91
O&M Expenses	25428.52	27854.99	27931.09	29692.60	31562.37
Total	189466.00	194213.03	192292.32	191209.18	188787.28



5. In compliance with the directions of the Commission, the petitioner has filed additional information and has served copies on the respondents. The respondents BRPL, BYPL and TPDDL have filed their replies and the petitioner has filed its rejoinder to the said replies. 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

6. 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.”

7. The annual fixed charges claimed by the petitioner are based on opening capital cost of ₹811129.00 lakh on 1.4.2014 as against the approved cost of ₹761233.37 lakh on 31.3.2014 (cash basis) and after deduction of un-discharged liabilities of ₹40966.16 lakh as on 31.3.2014 admitted vide order dated 17.1.2017 in Petition No. 437/GT/2014 read with Corrigendum order dated 14.2.2017. Accordingly, the opening capital cost of ₹761233.37 lakh as on 1.4.2014 has been considered.

8. The respondent, TPDDL has submitted that instead of considering the capital cost as on 1.4.2014 as that claimed in Petition No. 437/GT/2014, the petitioner ought to have considered the capital cost as on 1.4.2014 based on the closing capital cost as on 31.3.2014 as approved by the Commission vide order dated 6.5.2015 in Petition No. 229/2010. In response, the petitioner has submitted that closing capital cost determined by the Commission in order dated 6.5.2015 was revised in the order dated 9.2.2016 in Review Petition No. 12/RP/2015 and thus the same has been considered.



9. We have considered the submission of parties. In terms of the above regulation, the opening capital cost as on 1.4.2014 shall be based on the closing capital cost as on 31.3.2014 as determined in order/corrigendum dated 14.2.2017 in Petition No. 437/GT/2014. Accordingly, for determination of tariff of the generating station for the period 2014-19 the opening capital cost of ₹761233.37 lakh as on 1.4.2014 has been considered..

Actual/ Projected Additional Capital Expenditure during 2014-19

10. Regulation 14 (1) and 14(3) of the 2014 Tariff Regulations, provide 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 long 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 obsolescence of technology, replacement of switchyard equipment due to increase of fault level, tower strengthening, communication equipment, emergency restoration system, insulators cleaning infrastructure, replacement of porcelain insulator with polymer insulators, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system; and

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

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

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

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

11. The Petitioner in the Petition has claimed additional Capital Expenditure for the period 2014-19 as summarized under:-

(₹ in lakh)							
Sl. No.	Heads	Regulation	2014-15	2015-16	2016-17	2017-18	2018-19
1	Land	14 (1) (ii)	1228.61	0.00	0.00	0.00	0.00
2	SG+TG		4499.63	600.33	0.00	0.00	0.00
3	BOP Mechanical		2102.75	5790.49	0.00	0.00	0.00
4	BOP Electrical		199.46	247.72	0.00	0.00	0.00
5	Civil Works		7803.70	15075.47	0.00	0.00	0.00
6	C & I Package (incl instrn. Cable)		88.27	51.24	0.00	0.00	0.00
7	Initial Spares	14 (1) (iii)	6784.75	2685.54	0.00	0.00	0.00
8	RO plant package	14 (1) (ii) with Regulation 54 and 14 (3) (v)	0.00	0.00	200.00	0.00	0.00
9	SG & TG Package		0.00	0.00	5000.00	0.00	0.00
10	The Make up Water Civil Works package	14 (1) (ii) with Regulation 54	0.00	0.00	200.00	0.00	0.00
11	Fire detection and protection system, Air Conditioning System and Station piping package		0.00	0.00	900.00	0.00	0.00
12	Permanent Township Civil work		0.00	0.00	3200.00	0.00	0.00
13	Main plant and offsite Civil Works		0.00	0.00	2900.00	0.00	0.00
14	Ash Handling package		0.00	0.00	600.00	0.00	0.00
15	Satcom and EDP facilities		0.00	0.00	500.00	0.00	900.00
16	Deposit Work of Railways		0.00	0.00	0.00	0.00	1600.00
17	MBOA		351.42	569.21	0.00	0.00	0.00
18	Total Addition		23058.59	25020.00	13500.00	0.00	2500.00
19	De-capitalization of Spares		(-)527.37	(-)1577.32	0.00	0.00	0.00
20	De-capitalization of MBOA items		(-)21.85	(-)76.67	0.00	0.00	0.00
21	Total De-		(-)549.22	(-)1653.99	0.00	0.00	0.00



Sl. No.	Heads	Regulation	2014-15	2015-16	2016-17	2017-18	2018-19
	capitalization						
22	Net Additional capital expenditure		22509.37	23366.01	13500.00	0.00	2500.00
23	Liabilities discharged		18916.88	5942.47	0.00	0.00	0.00
24	Total Additional capital expenditure		41426.25	29308.48	13500.00	0.00	2500.00

Additional capital expenditure within the cut-off date

12. The break-up of the actual additional capital expenditure claimed by the petitioner within the cut-off date is detailed as under:-

(₹ in lakh)

S. No.	Head of Works/ Equipments	Regulation	2014-15	2015-16	Total
1	Land	14 (1) (ii)	1228.61	0.00	1228.61
2	SG + TG		4499.63	600.33	5099.97
3	BOP Mechanical		2102.75	5790.49	7893.24
4	BOP Electrical		199.46	247.72	447.18
5	Civil Works		7803.70	15075.47	22879.16
6	C & I Package (inclusive of instrumentation cable)		88.27	51.24	139.51
7	MBOA		351.42	569.21	920.63
8	Initial Spares	14 (1) (iii)	6784.75	2685.54	9470.29
9	Additional capital expenditure		23058.59	25020.00	48078.59
10	De-capitalisation of spares		(-)527.37	(-)1577.32	(-)2104.69
11	De-capitalisation of MBOA items		(-)21.85	(-)76.67	(-)98.52
12	Total De-capitalisation		(-)549.22	(-)1653.99	(-)2203.21
13	Net Additional capital expenditure		22509.37	23366.01	45875.37
14	Liabilities discharged		18916.88	5942.47	24859.36
15	Total Additional capital expenditure		41426.25	29308.48	70734.73

13. The cut-off date of the generating station in terms of Regulation 3(11) of the 2009 Tariff Regulation is 31.3.2016. Accordingly, based on the submissions of the parties and the documents available on records, the additional capital expenditure claimed by the petitioner is discussed in the succeeding paragraph.



Additional capital expenditure incurred within the cut-off date- Works deferred for Execution - Regulation 14(1)(ii)

14. The petitioner has claimed a total additional capital expenditure of ₹16273.84 lakh (excluding initial spares) along with the de-capitalisation of (-) ₹548.73 lakh in 2014-15 and additional capital expenditure of ₹22334.46 lakh (excluding initial spares) along with the de-capitalisation of (-) ₹1653.99 lakh in 2015-16, in respect of assets like Land, SG+TG, BOP Mechanical, BOP Electrical, Civil works, C&I package, initial spares and MBOA. In justification of the same, the petitioner has submitted that the claims for additional capital expenditure are in respect of deferred works like Land, Steam generator/ Turbine generator, BOP mechanical and electrical, C & I package and civil works etc., which are planned works within the original scope of work of the project and has been deferred for execution within the cut off date of the generating station. The petitioner has also submitted that it has discharged liabilities of ₹18916.88 lakh and ₹5942.47 lakh during the years 2014-15 and 2015-16 respectively. Accordingly, the petitioner has prayed that the Commission may allow the actual additional capital expenditure claimed in respect of the above deferred works along with the liabilities discharged during the years 2014-15 and 2015-16 respectively in term of the said regulation.

15. The respondent, BRPL has submitted that the petitioner has not filed details of the projected additional capital expenditure and no justification in respect of the projected additional capital expenditure claimed has been furnished. Hence, the claim of petitioner may be rejected. In response, the petitioner has submitted the relevant details of additional capital expenditure claimed during 2014-19 period has been furnished in the amended petition and copy has been served to the respondents.

16. We have examined the matter. It is observed that the expenditure incurred by the petitioner is of the nature of deferred works which are within the original scope of the project and the liabilities discharged are on account of the balance payments against works/services within the original scope of work already admitted such as land, steam generator/ turbine generator, BOP



mechanical and electrical, C & I package and civil works etc. Accordingly, claim of the petitioner is justified and the capital expenditure incurred on this count is in order. It is further observed that the petitioner has de-capitalised capital spares amounting to (-) ₹527.37 lakh and (-) ₹1577.32 lakh and MBOA amounting to (-) ₹20.87 lakh and (-) ₹76.67 lakh in 2014-15 and 2015-16 respectively, against some assets like UPS, refrigerator, computer equipments etc. On perusal of details of these de-capitalised assets submitted by the petitioner, it is noticed that in respect of the above works capitalized earlier under the approved project cost, some of the assets have been de-capitalised within an year on being put to use. The petitioner has not furnished any justification for the same.

Procurement of initial capital spares - Regulation 14(1)(iii)

17. The petitioner has claimed an expenditure amounting to ₹6784.75 lakh in 2014-15 and ₹2685.54 lakh in 2015-16 for initial spares, submitting that the same is within the "cut-off" date

18. It is observed that the initial spares allowed as on 31.3.2009 were ₹12736.85 lakh and the petitioner has claimed an additional initial spares of ₹9470.29 lakh upto the "cut-off" date. Hence, the total initial spares upto cut-off date are ₹22207.14 lakh which are in excess of the ceiling limit of 2.50% of the project cost of ₹834171.31 lakh as on cut-off date (without considering the de-cap of capital spares) in term of the Regulation 8 of the 2009 Tariff Regulations. Accordingly, the excess initial spares of ₹1387.55 lakh are disallowed from the opening capital cost as on 1.4.2014.

19. Based on the above, the actual additional capital expenditure allowed up to the cut-off date of the generating station is summarized as under:

<i>(₹ in lakh)</i>				
S. No.	Head of Works/ Equipments	2014-15	2015-16	Total
1	Land	1228.61	0.00	1228.61
2	SG + TG	4499.63	600.33	5099.97
3	BOP Mechanical	2102.75	5790.49	7893.24
4	BOP Electrical	199.46	247.72	447.18
5	Civil Works	7803.70	15075.47	22879.16



6	C & I Package (inclusive of instrumentation cable)	88.27	51.24	139.51
7	MBOA	351.42	569.21	920.63
8	Initial Spares	6784.75	2685.54	9470.29
9	Additional capital expenditure	23058.59	25020.00	48078.59
10	De-capitalisation of spares	(-)527.37	(-)1577.32	(-)2104.69
11	De-capitalisation of MBOA items	(-)21.85	(-)76.67	(-)98.02
12	De-cap of excess initial spares	(-) 1387.55	0.00	(-)1387.55
13	Total De-capitalisation	(-)1936.77	(-)1653.99	(-)3590.76
14	Net Additional capital expenditure	21121.82	23366.01	44487.82
15	Discharged Liabilities	18916.88	5942.47	24859.36
16	Total Additional capital expenditure	40038.70	29308.48	69347.18

20. As stated, the petitioner is directed to furnish proper justification for the de-capitalisation of some of these assets within a year of being put to use, at the time of truing up tariff for 2014-19, in terms of Regulation 8 of 2014 Tariff Regulations. The petitioner is also directed to furnish the details of IDC, if any, included in the additional capital expenditure claimed during the years 2014-15 and 2015-16.

Additional capital expenditure incurred after the cut-off date

21. The break-up of the projected additional capital expenditure claimed by the petitioner for the period 2016-19 (i.e. after the cut-off date) is summarized as under:

<i>(₹ in lakh)</i>					
Head work/Equipment	Regulations	2016-17	2017-18	2018-19	Total
RO plant package	14 (1)(ii) and 14 (3)(v) with Regulation 54	200.00	0.00	0.00	200.00
SG & TG package		5000.00	0.00	0.00	5000.00
Make up water civil works package	14 (1) (ii) with Regulation 54	200.00	0.00	0.00	200.00
Fire detection and protection system, Air Conditioning System and Station piping package		900.00	0.00	0.00	900.00
Permanent township civil work		3200.00	0.00	0.00	3200.00
Main plant and offsite civil Works		2900.00	0.00	0.00	2900.00
Ash handling package		600.00	0.00	0.00	600.00
Sat-com and EDP facilities		500.00	0.00	900.00	1400.00



Head work/Equipment	Regulations	2016-17	2017-18	2018-19	Total
Deposit work of Railways		0.00	0.00	1600.00	1600.00
Additional capital expenditure		13500.00	0.00	2500.00	16000.00

RO Plant Package

22. The petitioner has claimed additional capital expenditure of ₹200.00 lakh in 2016-17 towards RO Plant package. In justification, the petitioner has submitted that these works which form part of the original scope of work were awarded prior to the cut-off date of the generating station and the balance amount of ₹200.00 lakh is against the amount withheld by the petitioner against its vendor in order to demonstrate the Performance Guarantee of the system. The petitioner has further submitted that the RO Plant system has been commissioned prior to the cut off date of the generating station and this expenditure of ₹200.00 lakh could not be capitalized due to delay in the Performance Guarantee testing of the system. Accordingly, the petitioner has submitted that it was unable to capitalize the expenditure for reasons which are not attributable to the petitioner and has accordingly prayed that the same may be permitted to be capitalized in 2016-17.

23. The respondents BRPL and BYPL have submitted that the petitioner has not submitted the required details/justification of the projected additional capital expenditure thus the claim of petitioner may be rejected.

24. The matter has been examined. As stated by the petitioner, the said works were awarded prior to cut-off date of the generating station and the balance amount could be paid due to delay in PG test of the system. The petitioner has not submitted any justification in support of its contention that the non capitalization of the expenditure was due to the delay in PG test by the Contractor. In the absence of proper justification, we are not inclined to allow the prayer of the petitioner for capitalisation of the expenditure in relaxation of the provision of Regulation 14(3) of the 2014 Tariff Regulations. However liberty is granted to the petitioner to claim the said expenditure, subject to



the submission of detailed justification for the delay in PG test and the steps taken by petitioner to mitigate the said delay, the LD / penalty if any, levied, along with documentary evidence at the time of truing-up of tariff of the generating station.

SG and TG Package

25. The petitioner has claimed projected additional capital expenditure of ₹5000.00 lakh in 2016-17 towards SG and TG package. In justification of its claim, the petitioner has submitted that these works form part of the original scope of work and were awarded to M/s BHEL and that the majority of the works have already been completed and capitalized by the cut-off date i.e. 31.3.2016. It has further submitted that this balance amount is largely against the amount withheld by the petitioner in order to demonstrate the performance guarantee of ESP system and is in the nature of liability. It has submitted that the ESP has been commissioned prior to the cut-off date of the station and the expenditure of ₹5000.00 lakh could not be capitalized for the reasons which are not attributable to the petitioner and has accordingly has prayed that the Commission may allow the expenditure towards SG/TG package to be capitalised in 2016-17.

26. The respondents BRPL and BYPL have submitted that the petitioner has not filed the required detail justification for the projected additional capital expenditure.

27. The matter has been examined. As stated by the petitioner, the said works were awarded prior to cut-off date of the generating station and the balance amount could be paid due to delay in PG test of the system. The petitioner has not submitted any justification in support of its contention that the non capitalization of the expenditure was due to the delay in PG test by the Contractor. In the absence of proper justification, we are not inclined to allow the prayer of the petitioner for capitalisation of the expenditure in relaxation of the provision of Regulation 14(3) of the 2014 Tariff Regulations. However liberty is granted to the petitioner to claim the said expenditure, subject to the submission of detailed justification for the delay in PG test and the steps taken by petitioner to mitigate the said delay, the LD / penalty if any, levied, along with documentary evidence at the time of truing-up of tariff of the generating station.



Make up water Civil Works package

28. The petitioner has claimed projected additional capital expenditure of ₹200.00 lakh in 2016-17 towards Make up water Civil Works package. In justification of the same, the petitioner has submitted that the said works could not be capitalised due to the unprecedented torrential rains, objection by the State Government of Haryana due to absence of any legislation for the Right of Use, intermittent agitation by the villagers and the Jat agitation in the area. It has also submitted that the monsoon during the year 2010 had resulted into flooding/ submergence of make-up water pipeline area and surrounding areas and the rains had severely affected the laying of the underground pipeline from the make-up water pump house which was located at a distance of 18 km from the reservoir. The petitioner has added that the State Government of Haryana had restrained the petitioner for execution of the work due to absence of any legislation for the Right of Use (ROU) for laying of the underground pipelines, It has stated that subsequently the Government of Haryana vide notification dated 16.9.2009 had allowed the execution of the work and the works on the ROU corridor could only be taken up after issuance of the said Gazette Notification dated 16.9.2009. In respect of the delay due to rainfall, the petitioner has submitted as below:

“Subsequently, there was an unprecedented heavy rainfall during the monsoon months in the year 2010 due to which 1.4 Km of the ROU corridor was completely submerged in water up to the height of 1.5 metre. Work related to the laying of the pipeline came to a complete standstill for approx. 6 months resulting into delay in execution of work related to Make up Water Civil works within the scheduled time. (Photographs and paper cuttings of the affected water logged area are attached as Annexure-B and excess Rainfall monthly data is attached as Annexure-C).

Further, the ground condition of the water submerged area on the ROU route of make up water pipeline was such that it was not possible to lay the pipeline for more than 6 months. It was decided to lay an over-ground Loop line circumventing the submerged area of approx. 2.5 km (the photograph attached as Annexure-D).”

29. As regards the delay due to intermittent agitation of villagers and Jat strike, the petitioner has submitted the following:

“There has also been agitation by Villagers on several occasions hampering the progress of works. Due to the resistance put by the villagers, the work of laying of makeup water pipe under the ground and the work of makeup water pump got delayed. Further, the



capitalization of these works also got delayed due to JAT agitation in which the total roads were blocked and movement of manpower and other resources could not take place.” (Paper Cuttings showing the JAT agitation are attached at Annexure-E).

30. Accordingly, the petitioner has submitted that these works which form part of the original scope of works were awarded well before the cut-off date of the generating station and it has made all out efforts were taken by the petitioner to mitigate the delay and for capitalization of the same within the cut off date. Based on this, the petitioner has prayed that the Commission may allow the capitalisation of ₹200.00 lakh in 2016-17.

31. The respondents BRPL and BYPL have submitted that the petitioner has not filed the required detailed justification in respect of the projected additional capital expenditure and thus the claim of petitioner may be rejected. The respondent, TPDDL has submitted that the petitioner has not justified the additional capital expenditure, on account of works deferred for execution, within the original scope and after cut-off date of the generating station. It has also submitted that no documentary proof has been furnished by the petitioner to support its claim that State Government, Haryana had raised objection as regards the execution of works. It has further stated that since the petitioner was granted the Right of Use since 16.9.2009, it had more than 6 years for completion of the job. As regards delay due to excessive rain and JAT agitation, the respondent has submitted that a delay of not more than 2 months can be attributable on account of these factors and hence the Commission may disallow the claim of the petitioner. In response, the petitioner has submitted that despite all reasonable efforts taken by the petitioner, there were delays in completion of certain works which form part of original scope of work and these are expected to be partly commissioned and capitalised during the year 2016-17.

32. We have examined the matter. From the documentary evidences furnished by the petitioner, it is noticed that the capitalisation of expenditure pertaining to Make-up water Civil Works package was delayed due to heavy rainfall and Jat agitation. From the rainfall data of the Indian Meteorological Department, enclosed by the petitioner, it is observed that there were torrential rains to an average of around 150 mm and more in Jhajjar district, Haryana during the



period August 2010 to September 2010, which is a significant departure from the long period average of rainfall for the district. Thus there has been significantly higher rainfall in the region for a period of 2 months and not 3 to 4 months as submitted by the petitioner. As regards Jat agitation, it is observed from the documents that there has been a delay of 3 months (approx) during the period from February 2016 to March 2016 on account of the agitation.

33. In the above background, we are of the view that the total delay on account of above reasons cannot be more than 4 months. Further, since the RoU was granted to the petitioner in September 2009, we are of the view that the petitioner could and should have completed the work within the cut off date. Accordingly, we find no reason to allow the claim of the petitioner towards the Make up water Civil Works package after cut-off date in relaxation of provision of Regulation 14(3) of the 2014 Tariff Regulations, and the same is disallowed.

Permanent Township & Main Plant and Off site Civil Works

34. The petitioner has claimed projected additional capital expenditure of ₹3200.00 lakh towards Permanent Township in 2016-17 and ₹2900.00 lakh towards Main Plant and Off site Civil Works in 2016-17. In justification of the same, the petitioner has submitted that the works for these two packages were awarded by two separate contracts through domestic competitive bidding. It has also submitted that the ban was imposed on mining in State of Haryana by the Director, Industries & Commerce, Mines & Geology, Haryana from 28.2.2010, which led to acute scarcity of raw construction material (sand, aggregate, etc.) which had also affected the progress of civil construction work in the plant area from March 2010. The petitioner has further submitted that the unprecedented rains during the year 2010 had inundated the civil foundation works within the plant area and despite the petitioner's efforts to ensure the completion of civil works before the cut off date, the contractor has not mobilised adequate resources to the site. The petitioner has submitted that even after conducting various meetings and regular follow ups, the work did not progress due to scarcity of raw materials of concrete strength of M35/ M30 required for civil works due to ban on mining activity and finally due to delay in execution of this work, the petitioner after following the



provisions of contract, cancelled the left over work under the two contracts. The petitioner has submitted that since the left over works were of small value and these works being spread over the entire plant and township area, there was inadequate response from the working agencies located in the area and in view of the poor response from the agencies, the bid dates were extended a number of times to have adequate response to have a competitive rate for award of work. It has submitted that as a result of the poor response of the bidders, the petitioner had tried to contract NBCC for completion of the balance works, which however could not materialise until July, 2015. It has submitted that it tried to persuade the agencies working at site and the surrounding areas and also at other projects to participate in the tendering process and after rigorous follow up the work has been awarded to other various agencies but it again came to almost stand still at site due to the Jat agitation in the month of February, 2016. The petitioner has submitted that to ensure their safety, workers left the place of work and moved away to different areas. Accordingly, based on all the above reasons the petitioner has requested the Commission to allow the capitalisation of these works during 2016-17.

35. The respondents BRPL and BYPL have submitted that the petitioner has not filed the required details/justification of projected additional capital expenditure and thus the claim of petitioner may be rejected.

36. We have examined the matter. From the documentary evidences furnished by the petitioner, it is noticed that the capitalisation of expenditure pertaining to Make-up water Civil Works package was delayed due to heavy rainfall and Jat agitation. From the rainfall data of the Indian Meteorological Department, enclosed by the petitioner, it is observed that there were torrential rains to an average of around 150 mm and more in Jhajjar district, Haryana during the period August 2010 to September 2010, which is a significant departure from the long period average of rainfall for the district. Thus there has been significantly higher rainfall in the region for a period of 2 months and not 3 to 4 months as submitted by the petitioner. As regards Jat agitation, it is observed from the documents that there has been a delay of 3 months (approx)



during the period from February 2016 to March 2016 on account of the agitation. As regards the ban on mining activity by the State Government of Haryana, it is observed from the letter dated 28.2.2010 by the Director of Industries and Commerce Mines and Geology addressed to the petitioner, that mining of minerals was not allowed without prior environment clearance from the competent authority beyond 28.2.2010 in the State of Haryana, in terms of notification dated 14.9.2006 of Ministry of Environment and Forests 'MoEF'. It is therefore evident that the mandate of taking prior environment clearance was in place even prior to the letter dated 28.2.2010 addressed to the petitioner. As regards re-tendering of the balanced works, it is noticed that the petitioner has not furnished any details of the damages recovered from the contractor on account of the delay in execution of the balanced works and the steps taken by the petitioner to mitigate the delay. In this background, we are not inclined to condone the prayer of the petitioner for capitalisation of these works under relaxation of the provisions of Regulation 14(3) of the 2014 Tariff Regulations. However, the petitioner is granted liberty to approach the Commission with proper justification and documentary evidence in respect of the expenditure incurred at the time of truing up tariff in terms of Regulation 8 of the 2014 Tariff Regulations.

Fire detection and Protection system, Air Conditioning System and Station piping package

37. The petitioner has claimed projected additional capital expenditure of ₹900.00 lakh in 2016-17 towards Fire detection and Protection system, Air Conditioning System and Station Piping package. In justification of the same, the petitioner has submitted that these works are required to be undertaken after the completion of civil fronts pertaining to Main Plant and Offsite Civil works and thus the likely capitalization of ₹900.00 lakh on account of these works can only be made beyond the cut off date of the generating station. It has submitted that despite all efforts, the petitioner was unable to capitalize the works due to reasons which are not attributable to the petitioner. Accordingly, it has prayed to the Commission may allow the expenditure on these works to be capitalised in 2016-17.



38. The matter has been considered. The petitioner has justified the expenditure on the ground that the delay in capitalisation of these works is due to non-completion of the Civil fronts pertaining to 'Main Plant and Offsite Civil works'. Considering the fact that there is no proper justification/ documentary evidence as to why the delay of civil fronts pertaining to Main Plant and Offsite Civil works has resulted in delay of capitalization of Fire detection and Protection system, Air Conditioning System and Station Piping package, we find no reason to allow the claim of the petitioner for capitalisation of this expenditure after the cut-off date in relaxation of provision of Regulation 14(3) of the 2014 Tariff Regulations. However, the petitioner is granted liberty to approach the Commission with proper justification and documentary evidence at the time of truing up tariff in terms of Regulation 8 of the 2014 Tariff Regulations.

Ash Handling Package

39. The petitioner has claimed additional capital expenditure of ₹600.00 lakh in 2016-17 towards Ash Handling Package. In justification of the same, the petitioner has submitted that these works form part of the original scope of work and majority of the work has already been completed and capitalized within the cut off date. The petitioner has further submitted that some of the minor works of independent nature, forming part of these bigger packages could not be completed due to poor mobilization of resources, delay in supply of few materials required for completion of erection works and also pending rectification of few materials found defective. According to the petitioner, these reasons collectively resulted in deferment of completion of these balance independent works and capitalization of the expenditure is likely to spill over in 2016-17. The petitioner has prayed that the Commission may allow the capitalisation of the said expenditure in 2016-17.

40. We have examined the matter. It is observed that the petitioner in support of the said claim has furnished letters dated 28.3.2015, 2.11.2015 and 10.11.2015 indicating the communication made between the petitioner and M/s DCIPS Pvt. Ltd., as regards the delay in completion of these works. It is also observed that the work for Ash handling system was awarded on 30.6.2008 and the same is yet to be completed. The petitioner has also not submitted any reason for the delay in



completion of these works, despite the award of works on 30.6.2008. Since, the petitioner has not submitted any proper/sufficient reason to justify the delay, and also details like the estimated/actual LD recovered from the contractor, if any for the said delay, the steps taken by the petitioner to mitigate such huge delay in completion of works has not been furnished. We find no reason to allow the expenditure in relaxation of the provision of Regulation 14(3) of the 2014 Tariff Regulations. Accordingly, the prayer of the petitioner is not allowed. However, liberty is granted to the petitioner to approach the Commission with proper justification and documentary evidence at the time of truing up tariff in terms of Regulation 8 of the 2014 Tariff Regulations.

Satcom and EDP facilities

41. The petitioner has claimed additional capital expenditure of ₹500.00 lakh in 2016-17 and ₹900.00 lakh in 2018-19 towards Satcom and EDP facilities. In justification of the same, the petitioner has submitted that this work has been initially awarded in August, 2015 to M/s SAP India Pvt. Ltd with an implementation period of 3 months but later on, the vendor refused to supply the software and support and implement the ERP system on the agreed terms and conditions. The petitioner has further submitted that in order to expedite the commencement of work, the matter has been taken up with the vendor and after discussions at all levels, SAP India did not agree to start the work and considerable time was wasted in completion of the work which led to cancellation of contract. The petitioner has further submitted that the whole re-tendering process, which is too time consuming, has been carried out again to re-award the contract. The petitioner has also submitted that despite all efforts, the petitioner was unable to capitalize the works due to reasons not attributable to the petitioner. Hence, it has prayed that the Commission may allow the capitalisation in the years 2016-17 and 2018-19.

42. The respondents BRPL and BYPL have submitted that the petitioner has filed incomplete submission in respect of the claims of additional capital expenditure. The respondent TPDDL has submitted that the planning for the said job was not proper from its beginning as the petitioner awarded the contract only during August 2015, and an early award of the contract could have



ensured that contract gets executed within time. It has further objected to the petitioner processing the award of contract so late and it has thus requested the Commission to disallow the claim of the petitioner.

43. The matter has been examined. Though the petitioner has submitted that the vendor has not completed the said works and hence the delay is not attributable to it, no proper documentary evidence has been furnished to show that the delay is not attributable to the petitioner. Also, it is not clear from the submissions as to why there was a delay on part of the petitioner in awarding the contract. Moreover, the details such as the reasons for annulling the contract, the steps taken by the petitioner to mitigate the delay and the damages, if any, recovered from the contractor has also not been furnished. In this background, we do not find any reason to allow the capitalisation of the expenditure in relaxation of the provision of Regulation 14(3) of the 2014 Tariff Regulations. However, the petitioner is at liberty to approach the Commission with proper justification and documentary evidence at the time of truing up of tariff for consideration.

Deposit Work of Railways

44. The petitioner has claimed additional capital expenditure of ₹1600.00 lakh in 2018-19 towards deposit work of Railways. In justification, the petitioner has submitted that the revised cost estimate for the project including this work has been approved by the Board of the Petitioner's Company. The petitioner has further submitted that the scope of work includes electrification work of MGR line from Sudhrana Railway Station to the generating station and Indian Railways has intimated that they shall be taking up electrification of their Rewari- Jharli-Sudhrana-Hissar section to which the petitioner's Jhajjar Railway siding is connected. The petitioner has also submitted that it shall also have to take up electrification of their railway system leading up to railway take off points at Sudhrana and Jharli railway station as and when the Indian Railway awards the contract for the electrification of Railway line from Rewari to Hissar. Accordingly, the petitioner has prayed that the Commission may allow the capitalisation of the expenditure for electrification during the year 2018-19.



45. The respondents BRPL and BYPL have submitted that the petitioner has filed incomplete submission in respect of the claims of additional capital expenditure.

46. We have examined the matter. It is observed from the Revised Cost Estimates approved by the Board of the Petitioner Company in the meeting dated 31.10.2014 that the work had been approved under the original scope of work despite the fact that there was no information/ clarification from the Indian Railways as regards the timelines/ schedules for completion of its part of electrification of Rewari- Jharli-Sudhrana-Hissar section to which the petitioner's Jhajjar Railway siding is connected. From the letter dated 31.5.2016 furnished by the petitioner, it is observed that the Railways had intimated the petitioner as regards the estimated cost of rail electrification at the project end, to be undertaken by Railways. Having informed the estimated cost of ₹732.32 lakh by railways on 31.5.2016, it is not clear as to how the electrification work was included by the petitioner under the original scope, more so when the entire work was dependent on Railways and based on the timelines to be specified by the Railways. The petitioner has not furnished any details as regards the planning, the timelines for completion, and the basis of estimated cost etc. for the said work. In the absence of proper justification, we find no reason to allow the expenditure. Under this head, the petitioner is at liberty to submit detailed justification/ documentary evidences in support of its claim for the said expenditure at the time of truing up tariff in terms of Regulation 8 of the 2014 Tariff Regulations and the same shall be considered on the merits.

47. Accordingly, the year wise additional capital expenditure allowed for the period 2014-19 is summarized as under:

	<i>(₹ in lakh)</i>					
	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Land	1228.61	0.00	0.00	0.00	0.00	1228.61
SG+TG	4499.63	600.33	0.00	0.00	0.00	5099.97
BOP Mechanical	2102.75	5790.49	0.00	0.00	0.00	7893.24
BOP Electrical	199.46	247.72	0.00	0.00	0.00	447.18
Civil Works	7803.70	15075.47	0.00	0.00	0.00	22879.16



	2014-15	2015-16	2016-17	2017-18	2018-19	Total
C & I Package (incl. installation cable)	88.27	51.24	0.00	0.00	0.00	139.51
Initial Spares	6784.75	2685.54	0.00	0.00	0.00	9470.29
RO plant package	0.00	0.00	0.00	0.00	0.00	0.00
SG & TG Package	0.00	0.00	0.00	0.00	0.00	0.00
The Make-up Water Civil Works package	0.00	0.00	0.00	0.00	0.00	0.00
Fire detection and protection system, Air Conditioning System and Station piping package	0.00	0.00	0.00	0.00	0.00	0.00
Permanent township Civil work	0.00	0.00	0.00	0.00	0.00	0.00
Main plant and offsite Civil Works	0.00	0.00	0.00	0.00	0.00	0.00
Ash Handling package	0.00	0.00	0.00	0.00	0.00	0.00
Satcom and EDP facilities	0.00	0.00	0.00	0.00	0.00	0.00
Deposit Work of Railways	0.00	0.00	0.00	0.00	0.00	0.00
MBOA	351.42	569.21	0.00	0.00	0.00	920.63
Additional capital expenditure	23058.59	25020.00	0.00	0.00	0.00	48078.59
De-capitalisation of spares	(-)527.37	(-)1577.32	0.00	0.00	0.00	(-)2104.69
De-capitalisation of MBOA items	(-)21.85	(-)76.67	0.00	0.00	0.00	(-)98.02
De-capitalisation of excess initial spares	(-) 1387.55	0.00	0.00	0.00	0.00	(-)1387.55
Total De-capitalisation	(-)1936.77	(-)1653.99	0.00	0.00	0.00	(-)3590.76
Net Additional capital expenditure	21121.82	23366.01	0.00	0.00	0.00	44487.82
Discharged of Liabilities	18916.88	5942.47	0.00	0.00	0.00	24859.36
Total Additional capital expenditure	40038.70	29308.48	0.00	0.00	0.00	69347.18

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

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	761233.37	801272.55	830581.03	830581.03	830581.03
Add: Additional capital expenditure	40038.70	29308.48	0.00	0.00	0.00
Closing Capital Cost	801272.07	830580.55	830580.55	830580.55	830580.55

Debt-Equity Ratio

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



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

Provided that:

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

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

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

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

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

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

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

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

50. Accordingly, the gross loan and equity amounting to ₹532863.36 lakh and ₹228370.01 lakh, respectively as on 31.3.2014 as considered in order/corrigendum dated 14.2.2017 in Petition No. 437/GT/2014, has been considered as gross normative loan and equity as on 1.4.2014. The normative debt equity ratio of 70:30 has been considered in the case of additional capital expenditure. This is subject to truing-up in terms of the 2014 Tariff Regulations.

Return on Equity

51. 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.

52. 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.

53. The petitioner has claimed return on equity considering the base rate of 15.50% and effective tax rate of 20.9605% for 2014-15 and 21.3416% for 2015-16 to 2018-19.

54. The respondent, TPDDL has submitted that the petitioner ought to revise the opening equity in view of the order dated 6.5.2015 in Petition No. 229/2010. In response, the petitioner has submitted that the closing equity as claimed before the Commission in truing-up Petition No. 437/GT/2014 shall form the opening equity for the period 2014-19.

55. We have considered 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 15.500%. 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	228370.01	240381.62	249174.16	249174.16	249174.16
Addition of Equity due to additional capital expenditure	12011.61	8792.54	0.00	0.00	0.00
Normative Equity-Closing	240381.62	249174.16	249174.16	249174.16	249174.16
Average Normative Equity	234375.81	244777.89	249174.16	249174.16	249174.16
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	45961.10	48233.48	49099.77	49099.77	49099.77

Interest on Loan

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

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

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

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

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



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

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

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

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

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

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

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

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

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

- a. The gross normative loan of ₹532863.36 lakh as on 1.4.2014 has been considered.
- b. Cumulative repayment of loan of ₹73600.88 lakh as on 31.3.2014 as considered in corrigendum dated 14.2.2017 in Petition No. 437/GT/2014 has been considered as on 1.4.2014.
- c. The adjustment of de-capitalization of excess initial spares has been done in the cumulative repayment during the year.
- d. Addition to normative loan on account of the admitted additional capital expenditure has been considered on year to year basis.



- e. Depreciation allowed for the period has been considered as repayment of normative loan during the respective year for the period 2014-19.
- f. 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. The calculations for weighted average rate of interest on loan have been enclosed as Annexure-I to this order. 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	532863.36	560890.45	581406.38	581406.38	581406.38
Cumulative repayment of loan up to previous year	73600.88	109399.59	146907.97	185032.57	223157.17
Net Loan Opening	459262.48	451490.86	434498.42	396373.82	358249.22
Addition due to additional capital expenditure	28027.09	20515.94	0.00	0.00	0.00
Repayment of loan during the year	37154.45	38666.17	38124.60	38124.60	38124.60
Less: Repayment adjustment on account of de-capitalization	1355.74	1157.80	0.00	0.00	0.00
Net Repayment	35798.71	37508.38	38124.60	38124.60	38124.60
Net Loan Closing	451490.86	434498.42	396373.82	358249.22	320124.62
Average Loan	455376.67	442994.64	415436.12	377311.52	339186.92
Weighted Average Rate of Interest of loan	11.0621	11.0300	11.0145	11.0130	11.0110
Interest on Loan	50374.19	48862.23	45758.26	41553.14	37348.02

Depreciation

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

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



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

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

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

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

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

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

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

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

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

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

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

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

59. The cumulative depreciation amounting to ₹74084.08 lakh as on 31.3.2014 as considered in corrigendum dated 14.2.2017 in Petition No. 437/GT/2014 has been considered for the purpose of tariff. The petitioner has submitted vide affidavit dated 15.9.2016, the position of liabilities in respect of freehold and leasehold land. The petitioner has submitted the gross value of freehold land and leasehold land is ₹56960.70 lakh and ₹14.27 lakh respectively as on 31.3.2014. The value of freehold land included in the average capital cost has been adjusted while calculating depreciable value for the purpose of tariff. The adjustment of excess initial spares and decapitalization of capital spares has been done at the start of the year and the corresponding adjustment in cumulative depreciation has also been done at the opening. Accordingly, depreciation has been computed as follows:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	761233.37	801272.55	830581.03	830581.03	830581.03
Add: Additional Capital Expenditure	40038.70	29308.48	0.00	0.00	0.00
Closing Capital Cost	801272.07	830580.55	830580.55	830580.55	830580.55
Average Capital Cost	781252.72	815926.31	830580.55	830580.55	830580.55
Rate of Depreciation	4.7558%	4.7389%	4.5901%	4.5901%	4.5901%
Depreciable value (excluding land)@ 90%	654059.00	682037.04	747522.49	747522.49	747522.49
Balance depreciable Value	579974.92	570972.77	597992.48	559867.88	521743.28
Depreciation (annualized)	37154.45	38666.17	38124.60	38124.60	38124.60
Cumulative depreciation up to previous year	74084.08	111064.27	149530.01	187654.61	225779.21
Less: Cumulative Depreciation reduction due to de-capitalization	174.26	200.43	0.00	0.00	0.00
Cumulative depreciation (at the end of the period)	111064.27	149530.01	187654.61	225779.21	263903.81

O&M Expenses

60. Regulation 29 (1) (a) of the 2014 Tariff Regulations provides the year-wise O&M expense norms for 500 MW unit of the 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



61. 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 5 th & 6 th units	0.90
	Additional 7 th & more units	0.85
300/330/350 MW	Additional 4 th & 5 th units	0.90
	Additional 6 th & more units	0.85
500 MW and above	Additional 3 rd & 4 th units	0.90
	Additional 5 th & above units	0.85

62. Accordingly, the petitioner has claimed O&M expenses for 2014-19 as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
24000.00	25515.00	27120.00	28830.00	30645.00

63. 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.

64. 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.”

65. 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. 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.”

66. 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.

67. 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;

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

68. 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 MW 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 Rs. 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 Rs. 13.00 lakh/MW during 2009-10.”

69. 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 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.

70. Based on the above discussions, the normative O&M expenses in respect of the 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
23200.00	24664.50	26216.00	27869.00	29623.50



Water Charges

71. 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”

72. 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.

73. The petitioner vide its petition has claimed water charges applicable for 2013-14 in 2014-15 and escalated the same at 6.35% annually. The water charges claimed by the petitioner are as follows:

<i>(₹ in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
901.15	762.66	811.09	862.60	917.37

74. Additionally, the petitioner submitted the following details in respect of water consumption in the generating station:

Description	Remarks
Type of Plant	Coal based
Type of cooling water system	Closed Circuit/Natural draft
Consumption of water	290000 Unit
Rate of water charges	Rs. 300/unit
Total water charges in 2013-14	Rs. 870 lakh

**water charges paid as per allocated water quantity*

1 Unit=2500 cft

1 cum=35.31 cuft



75. The Commission vide ROP dated 20.5.2016 had directed the petitioner to furnish the details in respect of the basis for claiming the water charges for each year, the water supply agreement and the water consumption pattern of the previous years. In response to the Commission's directions the petitioner has submitted the details of the plant, type of cooling water system and water consumption and total water charges for the last 5 years i.e. 2010-11 to 2015-16, vide affidavit dated 30.6.2016 and 5.8.2016. The petitioner has submitted that water for APCPL is supplied through Jawahar Lal Nehru Canal owned by Haryana Irrigation Department. The petitioner has also submitted the relevant notification and notice related to revision in water charges from Irrigation Dept., Govt. of Haryana. The details of water consumption on actual basis submitted by the petitioner are summarised below:

	2011-12	2012-13	2013-14	2014-15	2015-16
Water Quantity for station (Cum)	12693900	28053504	20517901	21267505	17999253
Water Charges (₹ in lakh)	448.22	1094.23	869.39	901.15	762.66

76. As per provisions of Regulation 29(2) of the 2014 Tariff Regulations, water charges are to be allowed separately. We have considered the submissions of the petitioner in respect of water charges submitted vide affidavit dated 30.6.2016 and 5.8.2016.

77. In this backdrop, we have considered the actual consumption of water for 2014-15 and 2015-16 and the consumption during 2016-17 to 2018-19 has been projected to be same as 2015-16. The water charge/ rate has been considered as per notification dated 30.7.2012 of Irrigation Department, Govt. of Haryana. Based on this, water charges allowed for the period 2014-19, subject to true-up, are as under:

	Actual		Projected		
	2014-15	2015-16	2016-17	2017-18	2018-19
Water Quantity for station (Cum)	21267505.00	17999253.00	17999253.00	17999253.00	17999253.00
Water Quantity for station (Cuft)	750955601.55	635553623.43	693254612.49	693254612.49	693254612.49
Rate/ Water Charges	Rs. 300/2500 Cuft				
Water Charges	901.15	762.66	762.66	762.66	762.66



78. The petitioner is directed to submit the details of actual water charges with all the relevant documents at the time of truing up.

Capital spares

79. 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”

80. The petitioner has claimed an amount of ₹527.37 lakh in 2014-15 and ₹1577.32 lakh in 2015-16 towards capital spares consumed under the O&M Expenses upto the cut-off date, under Regulation 29(2) of 2014 Tariff Regulations and since, it has also claimed the initial spares up to the cut-off date, an amount of ₹527.37 lakh during 2014-15 and ₹1577.32 lakh during 2015-16 has been de-capitalised by the petitioner. In terms of Regulation 29(2), the capital spares are to be allowed under operation and maintenance expenses on actual at the time of truing-up, hence the same are not allowed, subject to submission of the details of year wise actual capital spares consumed by the petitioner, 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, however the amounts of ₹527.37 lakh and ₹1577.32 lakh in the years 2014-15 and 2015-16 has been adjusted/de-capitalized respectively subject to truing up in terms of Regulation 8 of the 2014 Tariff Regulations. Accordingly, the total O&M expenses including water charges and capitals spares as claimed by the petitioner has been considered 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	24000.00	25515.00	27120.00	28830.00	30645.00
O&M Expenses as allowed	23200.00	24664.50	26216.00	27869.00	29623.50
Water charges as claimed	901.15	762.66	811.09	862.60	917.37
Water charges as allowed	901.15	762.66	762.66	762.66	762.66
Capital spares as claimed	527.37	1577.32	0.00	0.00	0.00
Capital spares as allowed	0.00	0.00	0.00	0.00	0.00
Total O&M Expenses as claimed (including Water charges and capital spares)	25428.52	27854.99	27931.09	29692.60	31562.37
Total O&M Expenses as allowed (including Water charges and capital spares)	24101.15	25427.16	26978.66	28631.66	30386.16

Operational Norms

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

Target Availability (%)	83.00% - (2014-15 to 2016-17) 85.00% - (2017-18 to 2018-19)
Heat Rate (kcal/kWh)	2375.54
Auxiliary Energy Consumption (%)	5.25%
Specific Oil Consumption (ml/ kWh)	0.50

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

Normative Annual Plant Availability Factor (NAPAF)

83. 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.”



84. The petitioner has considered the target availability norm of 83% in 2014-15 to 2016-17 and 85% for 2017-18 and 2018-19. The petitioner has submitted that the average PLF at the generating station during the period 2011-12, 2012-13, 2013-14, 2014-15 and 2015-16 was 56.63%, 58.50%, 41.62%, 56.12% and 44.27% respectively. The petitioner has prayed the Commission to grant liberty to approach the Commission for seeking relaxation of Operating Norms as per the actual scenario and PLF during the period 1.4.2014 onwards.

85. We have considered the submission of the parties. 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, 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)

86. The petitioner has claimed the Gross Station Heat Rate of 2375.54 kCal/kWh after considering the heat rate of 500 MW units in the generating station in terms of Regulations 36(C)(a)(i) of the 2014 Tariff Regulations.

87. The Gross Station Heat Rate allowed during the period 2009-14 vide order dated 6.5.2015 in Petition No. 229/2010 was 2421 kCal/kWh. However, the petitioner has claimed Gross Station Heat Rate as 2363 kCal/kWh for the period 2014-19 vide affidavit dated 20.8.2014. Subsequently, the petitioner vide affidavit dated 5.8.2016 has claimed Gross Station Heat Rate of 2375.54 kCal/kWh which is lower than the heat rate approved in order dated 6.5.2015 during the tariff period 2009-14. The petitioner submitted the guaranteed boiler efficiency as 85.44% vide affidavit dated 20.8.2014 and the same was revised to 85.00% in amended petition vide affidavit dated 5.8.2016. We have examined the matter and we have considered boiler efficiency as 85.44% as per the submission of the petitioner in affidavit dated 20.8.2014. Further, the petitioner in Form-2 has furnished the guaranteed turbine cycle heat rate of 1932 kCal/kWh, in terms of Regulation 36(C)(c)(i). The computations for Gross Station Heat Rate of the generating station are as under:



Gross turbine cycle heat rate	Boiler efficiency	Design heat rate (kCal/kWh)	Gross station heat rate (kCal/kWh)
(A)	(B)	(C= A/B)	(D= C*1.045)
1932	85.44	2272.94	2362.99

88. The Gross Station Heat Rate computed above for the generating station has been considered for computation of the energy charges for the period 2014-19. However, the petitioner is directed to submit justification for this discrepancy in Gross Station Heat Rate and boiler efficiency at the time of truing up in terms of Regulation 8 of the 2014 Tariff Regulations.

Auxiliary Energy Consumption

89. The petitioner has claimed Auxiliary Energy Consumption at 5.25% during 2014-19 period as defined by Regulation 36(E)(a) of the Tariff Regulations, 2014 and the same is in order and allowed.

Specific Oil Consumption

90. 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

91. Sub-section (c) 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

(b) Open-cycle Gas Turbine/Combined Cycle thermal generating stations

(i) Fuel cost for 30 days corresponding to the normative annual plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel;

(ii) Maintenance spares @ 30% of operation and maintenance expense specified in regulation 29; and



(iii) Liquid fuel stock for 15 days corresponding to the normative annual plant availability factor and in case of use of more than one liquid fuel, cost of main liquid fuel duly taking into account mode of operation of the generating stations of gas fuel and liquid fuel’;

(iv) Receivables equivalent to two months of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel;

(v) Operation and maintenance expenses for one month.”

Fuel Components and Energy Charges in working capital

92. The petitioner has claimed cost for fuel components in working capital based on “as fired” GCV of coal procured and secondary fuel oil burnt for the preceding three months i.e. January 2014 to March 2014 as mentioned below:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal for Stock for 30 days	30375.73	30458.95	30375.73	31107.68	31107.68
Cost of Coal for Generation for 30 days	30375.73	30458.95	30375.73	31107.68	31107.68
Cost of Main Secondary Fuel Oil for 2 months	595.97	597.61	595.97	610.33	610.33

93. 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.

94. 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.”

95. Further, the petitioner has claimed energy charge rate (ECR) of 356.20 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 required to furnish such information with effect from 1.4.2014 in terms of the regulation. 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 have been computed by provisionally considering the GCV of coal on as “billed basis” and allowing an adjustment for total moisture as per the formula given as under:

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

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

96. The respondent TPDDL has submitted that the petitioner has calculated receivable component of working capital based on the GCV “as fired” which is in non-compliance of the 2014 Tariff Regulations. It has further submitted that the adjustment formula prescribed by the Commission in its order dated 27.6.2016 in Petition No. 270IGT/2014 & dated 23.7.2016 in



290/GT/2014 ought to be used to calculate GCV in case the generating station does not have the wherewithal to measure GCV at unloading point from the loaded wagon i.e. GCV "as received".

97. The respondents BRPL and BYPL have submitted that the petitioner has been taking sampling from secondary crusher from August 2014 onwards as "as received basis", which is contrary to the 2014 Tariff Regulations and order various orders passed by the Commission (order dated 25.1.2016 in Petition No. 283/GT/2014, order dated 19.2.2016 in Petition No. 33/MP/2015, order dated 20.5.2016 in Petition No. SM/014/2014, order dated 30.6.2016 in Petition No. 11/RP/2016 and order dated 30.7.2016 in Petition No. 279/GT/2014). They have further submitted that a similar observation has been recorded by the Commission in order dated 30.7.2016 in Petition No. 279/GT/2014, that from Aug 2014, onwards sampling for measurement "as received" GCV is being taken from secondary crusher, as under:

"The Commission vide ROP of the hearing dated 20.5.2016 directed the petitioner to submit the GCV of coal on "as received" basis. In response, the petitioner vide affidavit dated 21.6.2016 has submitted that from Aug 2014, onwards sampling for measurement of 'as received' GCV is being taken from secondary crusher."

98. The respondents have further submitted that the Commission after taking cognizance of non-compliance of its Orders by NTPC, had 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. It has submitted that the aforesaid finding contained in the order dated 30.7.2016 is binding on all the generating companies including the petitioner and has therefore requested the Commission to direct the petitioner to modify and recalculate the GCV on "as received" basis, in terms of the aforesaid adjustment formulae provided by the Commission. Further, the respondents have submitted that as per Form 15 of the Bills issued by the petitioner from April' 2016 till July' 2016 there are certain discrepancies in price of coal charged by the petitioner from the respondent discoms corresponding to the grade and quality of fuel, accordingly the difference in ECR as calculated by respondents and ECR as billed by the petitioner work out to approximately ₹2.05/kWh. They have further submitted that the petitioner has been wrongly



declaring the quantity of coal which has been received by the petitioner during the year 2014-15 and 2015-16, till March, 2016. Accordingly, they have stated that there is a difference in the quantity of coal as dispatched by the Coal India Ltd. (CIL) and the quantity of coal as received by the petitioner. Based on this, the respondents have requested the Commission to direct the petitioner to clarify the said discrepancy in the quantity of coal dispatched and received by the petitioner.

99. We have examined the matter. It is noticed that the coal quantity referred to by the respondents and as received by the petitioner during the years 2014-15 and 2015-16 is based on the publication made by CIL on provisional basis, and thus the same cannot be considered for the purpose of tariff. Accordingly, the cost for fuel components in working capital have been computed at 83% NAPAF for 2014-15, 2015-16 and 2016-17 and 85% NAPAF for 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:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal for stock– 30 days	19410.57	19410.57	19410.57	19878.29	19878.29
Cost of Coal for generation– 30 days	19410.57	19410.57	19410.57	19878.29	19878.29
Cost of secondary fuel oil – two months	595.97	597.61	595.97	610.33	610.33

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

S. No.		Unit	2014-19
1.	Capacity	MW	1500
2	Gross Station Heat Rate	kCal/kWh	2362.99
3	Aux. Energy Consumption	%	5.25%
4	Weighted average GCV of oil (As fired)	kCal/Lt.	9450.00
5	Weighted average GCV of Coal (As Billed)	kCal/kg	5040.91
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	65574.46
8	Weighted average price of Coal	₹/MT	4628.63
9	Rate of energy charge ex-bus	₹/kWh	2.320**

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

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



101. 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

102. 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
5085.70	5571.00	5586.22	5938.52	6312.47

103. Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provides 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, 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
4820.23	5085.43	5395.73	5726.33	6077.23

Receivables

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

<i>(₹ in lakh)</i>					
	2014-15	2015-16	2016-17	2017-18	2018-19
Variable Charges (two months)	39956.68	40066.15	39956.68	40919.49	40919.49
Fixed Charges (two months)	28853.92	29478.62	29276.84	28896.50	28490.11
Total	68810.60	69544.77	69233.53	69816.00	69409.60

O&M Expenses (1 month)

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



(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
2119.04	2321.25	2327.59	2474.38	2630.20

106. The petitioner has submitted that the capital spares form a part of the Operation and Maintenance Expenses for thermal generating stations and are incurred on monthly basis. Accordingly, it has requested the Commission to allow capital spares as part of working capital. The respondent TPDDL has submitted that claiming the capital spares as a part of Annual Fixed Charges as well as the working capital is not allowed under the 2014 Tariff Regulations and hence, it is not open to the petitioner to claim the same again as it has already denied by the Commission while drafting the 2014 Tariff Regulations. In reply, the petitioner has reiterated its submissions regarding inclusion of capital spares under the working capital.

107. We have examined the matter. Similar issue was considered by the Commission in order dated in Petition No. 186/GT/2014 and the Commission had observed as under:

“46. The claim of the petitioner for O&M expenses (one month) is less than the O&M expenses (one month) worked out as per norms as the petitioner has not considered water charges as part of O&M, while computing the O&M expenses (one month) for working capital. Since water charges form part of the O&M expenses, the O&M expenses for one month has been worked out and allowed”

108. Based on this decision, the O&M expenses for 1 month is allowed as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
2008.43	2118.93	2248.22	2385.97	2532.18

Rate of interest on working capital

109. 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.”



110. 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 towards stock- 30 days	19410.57	19410.57	19410.57	19878.29	19878.29
Cost of coal towards generation- 30 days	19410.57	19410.57	19410.57	19878.29	19878.29
Cost of secondary fuel oil- 2 months	595.97	597.61	595.97	610.33	610.33
Maintenance Spares	4820.23	5085.43	5395.73	5726.33	6077.23
Receivables- 2 months	68810.60	69544.77	69233.53	69816.00	69409.60
O & M expenses- 1 Month	2008.43	2118.93	2248.22	2385.97	2532.18
Total Working Capital	115056.36	116167.87	116294.59	118295.22	118385.93
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest on Working Capital	15532.61	15682.66	15699.77	15969.85	15982.10

111. 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	37154.45	38666.17	38124.60	38124.60	38124.60
Interest on Loan	50374.19	48862.23	45758.26	41553.14	37348.02
Return on Equity	45961.10	48233.48	49099.77	49099.77	49099.77
Interest on Working Capital	15532.61	15682.66	15699.77	15969.85	15982.10
O&M Expenses	24101.15	25427.16	26978.66	28631.66	30386.16
Total	173123.49	176871.71	175661.06	173379.03	170940.66

Month to Month Energy Charges

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



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

(a) For coal based and lignite fired stations

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

Where,

AUX = Normative auxiliary energy consumption in percentage.

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

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

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

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

LC = Normative limestone consumption in kg per kWh.

LPL = Weighted average landed price of limestone in

Rupees per kg.

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

113. 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.

114. 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 Fee and Publication Expenses

115. 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. In terms of Regulation 52 of the 2014 Tariff Regulations and in line with the decision in Commission's order dated 5.1.2016 in Petition No. 232/GT/2014, we direct that the petitioner shall be entitled to recover pro rata, the filing fees and the expenses incurred on publication of notices for the period 2014-15 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.

116. 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.

117. Petition No. 266/GT/2014 is disposed of in terms of the above.

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

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



DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO (2014-19)*(₹ in lakh)*

Particulars	Interest Rate (%) (2014-19)	Loan deployed as on 1.4.2014	Additions during the tariff period	Total
PFC Drawal -1	11.030	518000.00	0.00	518000.00
PFC Drawal -2	11.380	76046.42	0.00	76046.42
PFC Drawal -3	11.220	1000.00	0.00	1000.00
PFC Drawal -4	11.220	0.00	2500.00	2500.00
PFC Drawal -5	10.990	0.00	1000.00	1000.00
PFC Drawal -6	10.880	0.00	1500.00	1500.00
PFC Drawal -7	10.970	0.00	1110.58	1110.58
PFC Drawal -8	10.370	0.00	5000.00	5000.00
PFC Drawal -9	10.060	0.00	5000.00	5000.00
PFC Drawal -10	10.040	0.00	7500.00	7500.00
PFC Drawal -11	10.110	0.00	2500.00	2500.00
PFC Drawal -12	10.060	0.00	1800.00	1800.00
PFC Drawal -13	9.740	0.00	2500.00	2500.00
PFC Drawal -14	9.830	0.00	2500.00	2500.00
PFC Drawal -15	10.030	0.00	2500.00	2500.00
PFC Drawal -16	9.850	0.00	2500.00	2500.00
PFC Drawal -17	9.830	0.00	2500.00	2500.00
Total		595046.42	40410.58	635457.00

WEIGHTED AVERAGE RATE OF INTEREST ON LOAN DURING 2014-19 TARIFF PERIOD*(₹ in lakh)*

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross loan - Opening	595046.42	622957.00	635457.00	635457.00	635457.00
Cumulative repayments of Loans upto previous year	57073.24	97319.66	139477.03	182805.73	226201.08
Net loan - Opening	537973.18	525637.34	495979.97	452651.27	409255.92
Add: drawal(s) during the Year	27910.58	12500.00	0.00	0.00	0.00
Less : Repayment(s) of Loans during the year	40246.42	42157.37	43328.69	43395.36	43395.36
Net loan - Closing	525637.34	495979.97	452651.27	409255.92	365860.56
Average Net Loan	531805.26	510808.65	474315.62	430953.60	387558.24
Rate of Interest on Loan on annual basis	11.0621%	11.0300%	11.0145%	11.0130%	11.0110%
Interest on Loan	58828.79	56342.11	52243.55	47460.72	42674.21

