CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 143/GT/2020

Coram:

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

Date of order: 29th August, 2022

IN THE MATTER OF

Petition for truing-up of tariff for the 2014-19 tariff period in respect of Bairasiul Hydroelectric Power Station (180 MW)

AND

IN THE MATTER OF

NHPC Limited,
NHPC Office Complex, Sector-33,
Faridabad (Haryana) - 121 003. ...**Petitioner**

Vs

1. Punjab State Power Corporation Limited,
The Mall, Near Kali Badi Mandir, Patiala-147001

2. Haryana Power Utilities (UHBVNL & DHBVNL),
Shakti Bhawan, Sector-6, Panchkula-134109.

3. BSES Rajdhani Power Ltd., BSES Bhawan,
Nehru Place, New Delhi-110019.

4. BSES Yamuna Power Ltd.,
Shakti Kiran Building, Karkadooma, Delhi-110072.

5. Tata Power Delhi Distribution Ltd.
Grid Sub-station Building,
Hudson Lines, Kingsway Camp, Delhi-110009.

6. Himachal Pradesh State Electricity Board,
Vidyut Bhawan, Kumar House,
Shimla - 171 004. ...**Respondents**

Parties present:

Shri Rajiv Shankar Dwivedi, Advocate, NHPC
Shri S. P. Rathour, NHPC

Shri Piyush Kumar, NHPC
Shri R.B. Sharma, Advocate, BRPL
Ms. Megha Bajpeyi, BRPL
Shri Sachin Dubey, Advocate, BYPL
Shri Mohit Mudgal, Advocate, BYPL
Shri Abhishek Srivastava, BYPL
Shri Sameer Singh, BYPL

ORDER

This Petition has been filed by the Petitioner, NHPC Limited for revision of tariff of Bairasiul Hydroelectric Power Station (3 x 60 MW) (hereinafter referred to as 'the generating station') for the period 2014-19 in terms of Regulation 8(1) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as 'the 2014 Tariff Regulations').

Background

2. The generating station with a total capacity of 180 MW comprises of three units of 60 MW each. All the three units of the generating station were declared under commercial operation on 1.4.1982. Petition No.235/GT/2014 was filed by the Petitioner for determination of tariff of the generating station for the 2014-19 tariff period and the Commission vide its order dated 17.6.2015, had approved the capital cost and annual fixed charges as under:

Capital Cost allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital cost	18908.17	19979.87	20775.97	20813.19	20928.13
Additional Capital expenditure allowed	1071.70	796.10	37.22	114.94	5.11
Capital cost as on 31st March of the year	19979.87	20775.97	20813.19	20928.13	20933.24

Annual Fixed Charges allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	947.07	982.59	1036.19	80.28	86.68
Interest on Loan	0.00	0.00	0.00	0.00	0.00

Return on Equity	1731.76	1790.25	1816.34	1821.11	1824.87
Interest on Working Capital	542.07	576.15	612.02	626.43	665.38
O&M Expenses	8696.25	9274.03	9890.19	10547.30	11248.06
Total	11917.15	12623.01	13354.74	13075.12	13824.98

Present Petition

3. The Petitioner has filed the present Petition for truing-up of tariff of the generating station for the 2014-19 tariff period, based on the actual additional capital expenditure incurred for the 2014-19 tariff period, in terms of Regulation 8(1) of the 2014 Tariff Regulations. The capital cost and annual fixed charges claimed by the Petitioner in the present petition are as under:

Capital Cost claimed

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Opening Capital Cost	18908.17	19775.98	20311.13	20411.91	20473.60
Add: Addition during the year	896.47	573.95	86.14	173.10	37.30
Less: De-capitalization during the year	32.28	78.36	40.98	117.24	38.66
Add: Discharges during the year	3.62	39.56	55.63	5.82	13.90
Closing Capital Cost	19775.98	20311.13	20411.91	20473.60	20486.13
Average	19342.07	20043.55	20361.52	20442.76	20479.87

Annual Fixed Charges claimed

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Depreciation	943.62	982.75	1061.27	62.45	60.70
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	1742.98	1791.68	1797.54	1814.77	1824.26
Interest on Working Capital	542.25	576.19	612.17	625.87	664.76
O&M Expenses	8696.25	9274.03	9890.19	10547.30	11248.06
Total	**11925.09**	**12624.65**	**13361.16**	**13050.39**	**13797.78**

4. The Petitioner has filed certain additional information vide affidavit dated 29.6.2021. Reply to the petition has been filed by the Respondent, BYPL and Respondent, BRPL vide their affidavits dated 9.7.2021 and 10.7.2021 respectively.

The matter was heard through virtual hearing on 16.7.2021 and the Commission vide ROP permitted the Petitioner to file its rejoinder to the reply of the respondents. In compliance to the same, the Petitioner has filed its rejoinder to the replies of the Respondents BRPL & BYL vide separate affidavits dated 5.8.2021. Thereafter, the Petition was heard on 4.1.2022, through virtual hearing, and the Commission, after directing the Petitioner to file certain additional information, reserved its order in the petition. The Petitioner has filed the additional information vide its affidavit dated 21.1.2022. Based on the submissions and the documents available on record, we proceed for truing-up the tariff of the generating station for the 2014-19 tariff period as stated in the subsequent paragraphs.

Capital Cost

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

"9 (3) The Capital cost of an existing project shall include the following:
(a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;
(b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and
(c) expenditure on account of renovation and modernization as admitted by this Commission in accordance with Regulation 15.
xxx'

6. Clause (3) of Regulation 9 of the 2014 Tariff Regulations provides that the capital cost as determined by the Commission after prudence check in accordance with this regulation shall form the basis of determination of tariff for existing and new projects. The Commission vide its order dated 17.6.2015 in Petition No. 235/ GT/2014 had allowed the capital cost of Rs. 18908.17 lakh for the generating station as on 31.3.2014. Since the Petitioner has also claimed the opening capital cost of Rs. 18908.17 lakh as on 1.4.2014 for the purpose of tariff, the same. is considered for truing-up of tariff for the 2014-19 tariff period.

Additional capital expenditure for the 2014-19 tariff period

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

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

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

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

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

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

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

(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 powerhouse attributable to the negligence of the generating company) and due to geological reasons after adjusting the proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation;

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

(x) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receiving system arising due to non-materialization of coal supply corresponding to full coal linkage in respect of thermal

generating station as result of circumstances not within the control of the generating station:

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

7. The Petitioner, in Form- 9C, has submitted the reconciliation statement of the actual additional capital expenditure as against capital additions, as per book of accounts for the 2014-19 tariff period as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Closing Gross Block	22607.39	22521.71	22741.31	23013.27	23039.53
Less: Opening Gross Block	21032.06	22607.39	22521.71	22741.31	23013.27
Total Additions as per books	1575.33	(-)85.68	219.60	271.96	26.27
Less: Additions pertaining to other Stages (give Stage wise breakup)	0.00	0.00	0.00	0.00	0.00
Net Additions pertaining to the project/Unit/Stage	1575.33	(-) 85.68	219.60	271.96	26.27
Less: Exclusions (items not allowable / not claimed)	646.52	(-) 703.44	165.07	183.77	18.82
Less: Undischarged Liability	41.51	59.62	0.00	15.41	0.00
Less: Assumed Deletion	23.12	62.54	9.37	16.91	8.81
Net Additional Capital Expenditure Claimed	864.18	495.60	45.15	55.87	(-)1.36

8. The projected additional capital expenditure allowed for the 2014-19 tariff period in order dated 17.6.2015 in Petition No. 235/GT/2014 and the actual additional capital expenditure claimed by the Petitioner, in this petition, are as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Projected additional capital expenditure allowed in order dated 17.6.2015 in Petition No. 235/GT/2014	1071.70	796.10	37.22	114.94	5.11
Actual additional capital expenditure claimed	867.81	535.16	100.78	61.69	12.54

9. The break-up of the actual additional capital expenditure claimed by the Petitioner is as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Add: Addition during the year / period	896.47	573.95	86.14	173.10	37.30	1766.96
Less: De-capitalization during the year / period	32.28	78.36	40.98	117.24	38.66	307.53
Net Additional capitalization during the year	864.19	495.59	45.16	55.86	(-)1.36	1459.43
Add: Discharges during the year / period	3.62	39.56	55.63	5.82	13.90	118.53
Net additional capitalization during the year	867.81	535.16	100.78	61.69	12.54	1577.96

10. The Petitioner has submitted that certain capital expenditure, which were not projected earlier, had been incurred by the Petitioner, due to site specific requirements for successful and efficient operation of the generating station and the same is required to be included as part of the capital base for the purpose of tariff. The Respondent BRPL and Respondent BYPL have submitted that the Petitioner has claimed additional capitalization under Regulation 14(3)(viii) of the 2014 Tariff Regulations, and the claim under this Regulation can be justified only if such a claim is on account of damage caused by natural calamities and due to geological reasons. They have submitted that since the claim does not arise from such calamities or reasons, the same may be rejected. The Respondents have further submitted that claim of the Petitioner is also not permissible under Regulation 14(3)(iii) of the 2014 Tariff Regulations, since the same is allowable only on account of advice or direction by appropriate agency. In response, the Petitioner has submitted that additional capital expenditure incurred, which has become necessary for successful and efficient operation of the plant is not restricted to the expenditure on account of damage caused by natural calamities. The matter has been considered. In our view,

Regulation14(3)(viii) of the 2014 Tariff Regulations provides for additional capitalization of expenditure which has become necessary on account of damage caused by natural calamities and due to any additional work which has become necessary for successful and efficient plant operation. Accordingly, based on the reconciliation, the year-wise admissibility of the additional capital expenditure under various heads is discussed in the subsequent paragraphs.

2014-15

11. The additional capital expenditure claimed by the Petitioner for 2014-15 on cash basis, are examined below:

(Rs. in lakh)

Head	Amount
Items already allowed (a)	881.91
Items additionally claimed as per actual site requirements (b)	14.56
Sub-total (c)=(a)+(b)	896.47

(a) Items already allowed

12. The Petitioner has claimed additional capitalization of Rs.881.91 lakh in 2014-15, in respect of works such as LT Control Panels, Loader cum Excavator, Replacement of 11 KV Oil ckt Breakers with Vacuum ckt Breaker, Construction of Type-II quarters at Surangani, DG set (100/125 KVA) for Dam site and two nos. submersible pump for drainage system under Regulation 14(3)(viii) of the 2014 Tariff Regulations. It is noticed that the additional capital expenditure claimed for the above assets/ works were allowed by the Commission, on projection basis in 2014-15, vide order dated 17.6.2015 in Petition No. 235/GT/2014. Keeping in view the submissions of the Petitioner and on prudence check, we allow the claim for additional capital expenditure of these assets under Regulation 14(3)(viii) of the 2014 Tariff Regulations.

(a) Items additionally claimed as per actual site requirements

(Rs in lakh)

Sl. No.	Asset/works	Amount Claimed	Regulation	Justification submitted by the Petitioner	Remarks on admissibility	Amount allowed
1	Newly Constructed toilet at CISF Check Posts at Hathni & Baroh	2.80	14(3)(iii)	Security persons are deployed on round the clock basis at Hathni and Baroh check posts to achieve desired security level. Hence, toilets were required with these check posts to provide sanitation facility to the deployed persons.	The additional capital expenditure claimed is **not allowed being minor asset** as per first proviso to Regulation 14(3) of the 2014 Tariff Regulations	0.00
2	LITTMANN CARDIOLOGY III STETHOSCOPE	0.54	14(3)(viii)	New Instrument has been purchased, as they are very much required for the diagnosis of the patients. As no medical facilities are available at the location due to remoteness of site. It is required for smooth running of project hospital.	Since the additional capital expenditure incurred does not directly relate to the operation of the plant, the claim of the Petitioner is **not allowed**.	0.00
3	ECG MACHINE 12-CHANNEL	1.01	14(3)(viii)	EGC machine has been purchased against replacement of old ECG machine. Old ECG machine was purchased during 2002. The said item has been purchased, as they are very much required for the diagnosis of the patients. As no medical facilities are available at this location due to remoteness of site. It is required for smooth running of project hospital.		0.00
4	PORTABLE OXYGEN CONCENTRATOR,	2.06	14(3)(viii)	New Instrument has been purchased, as they are very much required to provide the Oxygen to the Indoor patients and also used for emergencies. As no medical facilities are available at this location due to remoteness of site. It is required for smooth running of project hospital and power station.		0.00
5	BOOM BARRIER WITH BOOM LENGTH OF 3M, ELECTRO MECHANICAL TYPE,	1.95	14(3)(iii)	It is required for safety and security of power station. The IB has also recommended for strengthening of security of power station.	In view of the submissions of the Petitioner and considering the fact that the additional capital expenditure incurred is for the safety and security of the generating station, the same	1.95

Sl. No.	Asset/works	Amount Claimed	Regulation	Justification submitted by the Petitioner	Remarks on admissibility	Amount allowed
6	ELECTRIC SIREN, SINGLE PHASE, 220/250 V,	3.06	14(3)(iii)	The purchased system was required for advance flood warning system in the downstream areas' Inhabitants.	is **allowed** under Regulation 14(3)(iii) of the 2014 Tariff Regulations.	3.06
7	SUBMERSIBLE/SLUDGE PUMP	3.14	14(3)(viii)	Old pump was purchased in 1982 and beyond the economic repair. This pump required for dewatering of pits to facilitate repair and maintenance of various power station's installations. Hence, the new pump was purchased against replacement of old pump.	Considering the fact that this asset/work will facilitate the successful and efficient operation of plant, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old replaced asset/work has been considered under 'De-capitalization' in 2014-15.	3.14
	Total amount clamed	**14.56**				
	Total amount allowed					**8.14**

13. Accordingly, the total additional capital expenditure allowed in 2014-15 is Rs. 890.05 lakh (Rs. 881.91 lakh + Rs. 8.14 lakh).

2015-16

14. The additional capital expenditure claimed by the Petitioner for 2015-16, on cash basis, are examined below:

(Rs. in lakh)

Head	Amount
Items already allowed (a)	545.38
Items additionally claimed as per actual site requirements (b)	28.57
Sub-total (c)=(a)+(b)	573.95

(a) Items already allowed

15. The Petitioner has claimed additional capitalization of Rs.545.38 lakh in 2015-16, in respect of works such as Generator Transformer, 25MVA, 11kV/220 kV, Submersible pump for drainage system (1 No.), Numerical protection Relay for line, Pumps for water supply and Purchase of portable diesel operated Air compressor

under Regulation 14(3)(viii) of the 2014 Tariff Regulations. It is noticed that the additional capital expenditure claimed for the above assets/ works, were allowed by the Commission, on projection basis, vide order dated 17.6.2015 in Petition No. 235/GT/2014. Keeping in view the submissions of the Petitioner and on prudence check, we allow the claim for additional capital expenditure of these assets under Regulation 14(3)(viii) of the 2014 Tariff Regulations.

(b) Items additionally claimed as per actual site requirements

(Rs in lakh)

Sl. No.	Asset/works	Amount Claimed	Regulation	Justification submitted by the Petitioner	Remarks on admissibility	Amount allowed
	2015-16					
1	VERTICAL MULTISTAGE PUMP CAPACITY	2.90	14(3)(viii)	The existing pump was being used for the water supply to the office, hospital and other installations of Power Station and has outlived its useful life hence the Vertical Multistage Pump was purchased as replacement.	Considering the fact that this asset/work will facilitate the successful and efficient operation of plant, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old replaced asset/work has been considered under 'De-capitalization' in 2015-16.	2.90
2	Upgradation of LAN at Power Station	7.36	14(3)(viii)	For upgradation and renew the existing LAN, LAN components were purchased and installed for smooth functioning of LAN at Power Station.	Considering the fact that this asset/work will facilitate the successful and efficient operation of plant, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	7.36
3	1.3 MP CMOS BULLET ANALOG CCTV CAMERA, MAKE- SAMSUNG,	0.21	14(3)(viii)	The said cameras were purchased and installed at Dam as per the Safety & Security Requirement.		0.21
4	ONLINE WATER LEVEL MONITORING SYSTEM	0.00	14(3)(viii)	Earlier water in reservoir was monitored manually. For accurate and quick monitoring of water level in reservoir, new online water level monitoring system has been installed at Dam for smooth operation of Power Station.	Considering the fact that this asset/work will facilitate the successful and efficient operation of plant, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The undischarged liability of Rs 7.06 lakh allowed subject to its discharge. The gross value of old replaced asset/work has been considered under 'De-capitalization' in 2015-16.	0.00

Sl. No.	Asset/works	Amount Claimed	Regulation	Justification submitted by the Petitioner	Remarks on admissibility	Amount allowed
5	Biometric System for recording attendance	1.15	14(3)(viii)	Vide Part-I Office Order No. 64/2014 Dated 21.11.2014 of Chief (HR), Corporate Office, it was made mandatory to mark the attendance of the employees posted in the Power Station through biometric means. Accordingly, in compliance to the order, finger print system along with accessories were purchased and installed.	Considering the fact that this asset/work will facilitate the successful and efficient operation of plant, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	1.15
6	220V DC,500AH LEAD ACID BATTERY BANK WITH ALL ACCESSORIES	16.95	Regulation 14(3)(viii)	The Petitioner has claimed the same on replacement basis.	Considering the fact that this asset/work will facilitate the successful and efficient operation of plant, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old replaced asset/work has been considered under 'De-capitalization' in 2015-16.	16.95
	Total amount claimed	**28.57**				
	Total amount allowed					**28.57**

16. Accordingly, the total additional capital expenditure allowed is Rs. 573.95 lakh (Rs. 545.38 lakh + Rs. 28.57 lakh) in 2015-16.

2016-17

17. The additional capital expenditure claimed by the Petitioner for 2016-17, on cash basis, are examined below:

(Rs. in lakh)

Head	Amount
Items already allowed (a)	52.28
Items additionally claimed as per actual site requirements (b)	33.86
Sub-total (c)=(a)+(b)	86.14

(a) Items already allowed

18. The Petitioner has claimed additional capitalization of Rs. 52.28 lakh in 2016-17, in respect of works such as Purchase of Fire Tender and CCTV with recording facility for Powerhouse, Dam, Siul & bhaledh sites under Regulation 14(3)(viii) of the

2014 Tariff Regulations. It is noticed that the additional capital expenditure claimed for above assets/ works were allowed by the Commission, on projection basis, vide order dated 17.6.2015 in Petition No. 235/GT/2014. Keeping in view the submissions of the Petitioner and on prudence check, we allow the claim for additional capital expenditure of these assets under Regulation 14(3)(viii) of the 2014 Tariff Regulations.

(b) Items additionally claimed as per actual site requirements (in Rs lakh)

Sl. No.	Asset/works	Amount Claimed	Regulation	Justification submitted by the Petitioner	Remarks on admissibility	Amount allowed
1	DG SET 100 KVA, 415 VOLT, WATER COOLED, SILENT TYPE -	18.11	14(3)(viii)	Since old DG sets (40 KVA) lying at Dam sites are incompetent to meet the load requirements/ power supply of Bhaledh Dam and Siul weir site. Hence 02 Nos. DG SET 100 KVA, 415 VOLT, has been purchased during the year 2016-17 to meet additional load requirements of Dam site (01 No. DG Set at Bhaledh Dam Site and 01 No. DG Set at Siul Weir). The said items are required to cater the uninterrupted power supply for O&M of hydraulic structures. Required to cater the uninterrupted power supply for O&M of hydraulic structures at Power Station	Considering the fact that this asset/work will facilitate the successful and efficient operation of plant, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The Gross value has been considered under 'Assumed Deletions'.	18.11
2	MARUTI SUZUKI CIAZ ZXI	9.77	14(3)(viii)	The purchase of vehicle is required as existing vehicle has outlived its useful life. Assumed De-capitalizations value of Old Ambassador Car is indicated in Form 9B(i) 2016-17. Old Ambassador Car has been actually decapitalized during the year 2017-18	Since the expenditure incurred are in the nature of O&M expenses and does not directly relate to the operation of the plant, the claim of the Petitioner is **not allowed**	0.00
3	NETWORK ATTACHED STORAGE 04 BAY WITH 12 TB (03TB HDD X 04) CAPACITY - NETGEAR READY NAS 2120 131250 411804 NETWORK ATTACHED	4.57	14(3)(viii)	For securing and safety of data, Network Attached Storage (NAS) 12 bay with 12 TB is purchased as a Centralized data storage management system for storage and retrieval of data i.e. Power House historical events technical information during R&M of Power House,	Considering the fact that this asset/work will facilitate the successful and efficient operation of plant, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value has been	4.57

Sl. No.	Asset/works	Amount Claimed	Regulation	Justification submitted by the Petitioner	Remarks on admissibility	Amount allowed
	STORAGE 12 BAY WITH 12 TB			Design, Drawings and P&C related data as well as sharing of data.	considered under assumed deletion'	
4	DOOR FRAME AND METAL DETECTOR (DFMD)	1.41	14(3)(iii)	New Door Frame and Metal Detector (DFMD) is essentially required for the safety of Powerhouse	The Petitioner has submitted that the asset/ work is necessary for the safety and security of the generating station and has also furnished the relevant documentary evidence. In view of this, the additional capital expenditure claimed is **allowed** under Regulation 14(3)(iii) of the 2014 Tariff Regulations.	1.41
	Total amount claimed	33.86				
	Total amount allowed					**24.09**

19. Accordingly, the total additional capital expenditure allowed is Rs. 76.37 lakh (Rs. 52.28 lakh + Rs. 24.09 lakh) in 2016-17.

2017-18

20. The additional capital expenditure claimed by the Petitioner for 2017-18, on cash basis, are examined below:

(Rs. in lakh)

Head	Amount
Items already allowed (a)	142.63
Items additionally claimed as per actual site requirements (b)	30.47
Sub-total (c)=(a)+(b)	173.10

(a) Items already allowed

21. The Petitioner has claimed additional capitalization of Rs. 142.63 lakh in 2017-18, in respect of works such as Replacement of 1 no JCB back hoe loader, Pumps for water supply, Numerical protection Relay for line and GI Pipe Gravity Water Pipe Lines from Rakhalu Mata Mandir to Tank Pump House under Regulation 14(3)(viii)

of the 2014 Tariff Regulations. It is noticed that the additional capital expenditure claimed for above assets/ works were allowed by the Commission, on projection basis, vide order dated 17.6.2015 in Petition No. 235/GT/2014. Keeping in view the submissions of the Petitioner and on prudence check, we allow the claim for additional capital expenditure of these assets under Regulation 14(3)(viii) of the 2014 Tariff Regulations.

(b) Items additionally claimed as per actual site requirements

(Rs in lakh)

Sl. No.	Asset/works	Amount Claimed	Regulation	Justification submitted by the Petitioner	Remarks on admissibility	Amount allowed
	FY 2017-18					
1	Construction of 02 Nos. CISF MORCHA AT DAM	1.26	14(3)(iii)	CISF Morcha at Dam is required to enhance the security as per the CISF requirement.	The Petitioner has submitted that the asset/ work is necessary for the safety and security of the generating station and has also furnished the relevant documentary evidence. In view of this, the additional capital expenditure claimed is **allowed** under Regulation 14(3)(iii) of the 2014 Tariff Regulations.	1.26
2	Main and Standby Float Cum Boost Battery Charger DC 220 Volt, 100 AMP	17.14	14(3)(viii)	The existing FCBC were installed for charging of battery bank installed at Powerhouse to provide DC supply for control, protection, emergency lights etc. The existing chargers have become very old and have outlived their useful life. Hence the same are required to replace the old one.	Considering the fact that this asset/work will facilitate the successful and efficient operation of plant, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value has been considered under assumed deletion.	17.14
3	CYBEROAM CR100ING APPLIANCE	2.37	14(3)(viii)	To secure the powerhouse network from external threat like spam, spy-wares, Trojans and viruses, high end hardware-based firewall proxy solution to prevent cyber-attack CYBEROAM CR100ING APPLIANCE is purchased in addition to the existing CYBEROAM CR50ia	The additional capital expenditure claimed is **not allowed** as per the first proviso of Regulation 14(3) of the 2014 Tariff Regulations	0.00

Sl. No.	Asset/works	Amount Claimed	Regulation	Justification submitted by the Petitioner	Remarks on admissibility	Amount allowed
				which is now a day obsolete and not upgradable and will reach the end of life cycle on 01.04.2019 and it was useful for only 35-40 users and now a day, approx. 125 users having internet requirement at a time.		
4	LAN Extender	4.60	14(3)(viii)	LAN extender for Local Area Network of Powerhouse for smooth functioning of ERP, ESS, Intranet	The additional capital expenditure claimed is **not allowed** as per the first proviso of Regulation 14(3) of the 2014 Tariff Regulations	0.00
5	Items like Swings, seesaw etc. purchased and installed at Children's park in NHPC Colony for amusement of children of employees.	5.10	14(3)(viii)	Items Purchases for amusement of employee's children. Swings, seesaw etc. purchased for Children parks.	The additional capital expenditure claimed is **not allowed** as per the first proviso of Regulation 14(3) of the 2014 Tariff Regulations	0.00
	Total amount claimed	**30.47**				**18.40**
	Total amount allowed					

22. Accordingly, the total additional capital expenditure allowed is Rs. 161.03 lakh (Rs. 142.63 lakh + Rs. 18.40 lakh) in 2017-18.

2018-19

23. The additional capital expenditure claimed by the Petitioner for 2018-19, on cash basis, are examined below:

(Rs. in lakh)

Head	Amount
Items already allowed (a)	20.99
Items additionally claimed as per actual site requirements (b)	16.31
Sub-total (c)=(a)+(b)	37.30

(a) Items already allowed

24. The Petitioner has claimed additional capitalization of Rs.20.99 lakh in 2018-

19, in respect of works such as Pumps for Water Supply and Truck under Regulation 14(3)(viii) of the 2014 Tariff Regulations. It is noticed that the additional capital expenditure claimed for above assets/ works were allowed by the Commission, on projection basis, vide order dated 17.6.2015 in Petition No. 235/GT/2014. Keeping in view the submissions of the Petitioner and on prudence check, we allow the claim for additional capital expenditure of these assets under Regulation 14(3)(viii) of the 2014 Tariff Regulations.

(b) Items additionally claimed as per actual site requirements

(Rs in lakh)

Sl. No.	Asset/works	Amount Claimed	Regulation	Justification submitted by the Petitioner	Remarks on admissibility	Amount allowed
	2018-19					
1	AUTOMATIC TELEMETRY TYPE RAIN GAUGE,	2.00	14(3) (viii)	ED (O&M) vide IOM No. NH/O&M/BSPS/R&M/4117-18 Dated 27.12.2016 directed to install rain gauge for collecting rain data in Baira Dam area	Considering the fact that this asset/work will facilitate the successful and efficient operation of plant, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	2..00
2	SUB. PUMP,360 M3/HR H. 21M, CONTROL PANNEL & WATER LEVEL REGULATION SYSTEM,	12.99		Two no of flood pumps have been purchased by the power station to drain out the water in case of flooding of powerhouse. Both the pumps have been installed and put in operation. Flood pumps are mandatory requirement as per CERC Regulations.	Considering the fact that this asset/work will facilitate the successful and efficient operation of plant, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	12.99
3	Hospital Equipment's -AUTOCLAVE VERTICAL -BINOCULAR MICROSCOPE, -ICU BED WITH MATTRESS, -MULTIPARA METER (FIVE PARA),	1.32	14(3) (viii)	The said items are required for routine sterilization of various hospital items, different Laboratory investigations, keeping track of heart conditions and vital signs of patients in emergency at Project Hospital.	Since the additional capital expenditure incurred does not directly relate to the operation of the plant, the claim of the Petitioner is **not allowed**.	0.00
	Total amount claimed	**16.31**				**14.99**
	Total amount allowed					

25. Accordingly, the total additional capital expenditure allowed is Rs. 35.98 lakh (Rs. 20.99 lakh + Rs. 14.99 lakh) in 2018-19.

Discharge of liabilities

26. The Petitioner has claimed the following discharge of liabilities:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
3.62	39.56	55.63	5.82	13.90

27. On prudence check, the assets / items which are allowed and for which the liabilities have been discharged are allowed and for those assets which are not allowed, the corresponding discharge of liabilities are also not allowed. Accordingly, the discharge of liabilities in 2014-19 tariff period is allowed as shown under:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
3.62	37.12	55.37	5.82	13.90

Decapitalization

28. Regulation 14(4) of the 2014 Tariff regulations provides as under:

"In case of de-capitalization of assets of a generating company or the transmission licensee, as the case may be, the original cost of such asset as on the date of de-capitalization shall be deducted from the value of gross fixed asset and corresponding loan as well as equity shall be deducted from outstanding loan and the equity respectively in the year such de-capitalization takes place, duly taking into consideration the year in which it was capitalized."

29. The following year-wise expenditure has been de-capitalized by the Petitioner on account of replacement of assets such as de-watering pump, jeeps-station wagons including inspection vehicles, battery bank 24V 100AH NI-CD, fire lorry, main generating equipments, 48V 200AH flooded type lead acid battery bank, satellite communications systems, minor items tool and tackles, transit camp and field hostel items, residential building (Permanent) and roads building containing workshops.

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
9.16	15.83	31.61	100.33	29.86

30. Since the assets are not in use/unserviceable, the claim of the Petitioner for de-capitalization of the above said amounts in terms of the said Regulations, is allowed.

Assumed Deletions

31. As per consistent methodology adopted by the Commission in its orders, the expenditure on replacement of assets, if found justified, is allowed for the purpose of tariff provided that the capitalization of the said asset, is followed by de-capitalization of the gross value of the old asset. However, in certain cases, where the decapitalization is proposed to be effected during the future years to the year of capitalization of the new asset, the de-capitalization of the old asset for the purpose of tariff, is shifted to the very same year in which the capitalization of the new asset is allowed. Such de-capitalization which is not a book entry in the year of capitalization is termed as "Assumed Deletions". Further, in the absence of the gross value of the asset being de-capitalized, the same is calculated by de-escalating the gross value of new asset @ 5% per annum till the year of capitalization of the old asset. The assumed deletion amount calculated by Commission's consistent methodology is more than the claim of the Petitioner i.e. assumed deletion amount calculated by the Commission (being on higher side) is considered for the purpose of the tariff. Accordingly, in terms of the above methodology, the value of "assumed deletions‟ considered for the replaced asset for the purpose of tariff, is detailed as under:

(Rs. in lakh)

Sr. no.	Assumed Deletions	Additions claimed for new asset on replacement	De-capitalization on value of old asset claimed	Assumed Deletions for old asset allowed
	2014-15			
1	411102 - MICHIGAN LOADER - 1 NO. TAG NO. 1710-007 - 1186172	25.44	11.86	11.86
3	411002 - D.G.SET 37.2 KW(40 KVA) (EQUIPMENT KIRLOSKAR MAKE, MODEL CM200M, ENGINE KIRLOSKAR MODEL 481206)	10.05	0.52	4.18
4	410713- VERTICLE TURBINE PUMP	6.99	2.26	4.29
5	411112- VERTICLE TURBINE PUMP FOR DEWATERING SPEED 1450 RPM CAPACITY 10 H	6.99	0.45	4.73
6	410701 - 11 KV Circuit Breaker replaced from Main GPM (Mother Plant)	31.64	3.37	6.64
7	410701 - CT, PT & CVT replaced from Main GPM (Mother Plant)	36.83	3.92	7.73
	Total			**39.43**
	2015-16			
1	410802 - KSB MAKE MULTI STAGE HIGH PRESSURE PUMP MODEL WK-65/4 COUPLED WITH ABB MAKE 50 HP 2900 (02 Nos. Qty.)	9.56	3.51	4.83
2	CPT AIR COMPRESSOR - 260 CFM, CP-260-R-2-260 CFM, ALU-370	8.93	1.87	2.39
3	411130- JYOTI MAKE VERTICAL TURBINE PUMP OIL SUB WITH TRUMPELLER MODEL 200T-1A-4	6.99	0.34	1.62
4	410701- Generator Transformer, 25MVA, 11KV/220KV, single phase (Qty-3)	546.47	55.10	109.22
5	410714 - 220V DC,500AH LEAD ACID BATTERY	16.95	1.71	3.39

Sr. no.	Assumed Deletions	Additions claimed for new asset on replacement	De-capitalization on value of old asset claimed	Assumed Deletions for old asset allowed
	BANK WITH ALL ACCESSORIES			
	Total			**121.45**
	2016-17			
1	411501 - AMBASSADOR CLASSIC 1800 CC, ISZ, MPFI, BU, AC, CHASIS NO. AFZ 822285, ENGINE NO. 3ELEZ063099, - 421298	4.57	4.21	4.21
2	411903 - VIDEO SURVEILLANCE & DEVICE CONTROLLER (VOIP SYSTEM) PRODUCT DESCRIPTION	19.62	5.16	12.04
	Total			**16.26**
	2017-18			
1	411102 - ESCORTS JCB 3D Excavator Loader Fitted with a Cum Loaded Bucket 0.24 Cum Excavate Or Bucket	22.06	15.26	15.26
2	410707 Main and Standby Float Cum Boost Battery Charger DC 220 Volt, 100 AMP 874599	17.49	1.65	3.17
	Total			**18.44**
	2018-19			
1	TATA LP MODEL TRUCK 1510-1599 CHASIS NO 359357GQQ116323 ENG NO 697828GQQ121894 HP44-0325	18.1	5.92	7.16
2	411112- Pump with Motor-Pump Multistage Centrifugal Pump with Bronze Impeller for clear water capacity	2.89	2.89	2.89
	Total			**10.05**

Exclusions

32. The following exclusions have been claimed by the Petitioner:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Exclusions in Additions	902.96	186.04	198.86	236.56	31.15

Exclusions in Deletions	256.44	889.48	33.79	52.79	12.32
Net exclusions claimed	646.52	(-)703.44	165.07	183.77	18.82

Exclusions in Additions (capitalized in books but not to be considered for tariff purpose)

33. The Petitioner has submitted that the expenditure as shown above has been incurred on procurement/replacement of minor assets, which are not allowed for the purpose of tariff, after the cut-off date of the generating station, in terms of the 2014 Tariff Regulations. The Petitioner has, accordingly, put these additions under exclusion category, by including the positive entries arising due to Inter-head adjustments. As such, the exclusion of such positive entries is allowed and has no impact in tariff. Hence, the same is in order and allowed.

Exclusions in deletions (de-capitalized in books but not to be considered for tariff purpose)

34. The Petitioner has de-capitalized following amounts in books of accounts pertaining to capital spares, minor assets such as computers, office equipment, furniture, ladders, pumps, etc., as these are not in use on account of their becoming unserviceable/obsolete and also deletion on account of inter-unit transfer (IUT) of minor assets, as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Minor Items	41.89	6.16	16.50	5.05	8.44
Capital spares	214.55	108.56	5.43	43.52	1.47
Disallowed Items	0.00	773.68	0.00	0.00	0.00
IUT	0.00	1.08	0.00	0.00	0.00
De-capitalization kept under exclusion as assumed deletion has been claimed in different year	0.00	0.00	11.86	4.21	0.74
Reversal of liability	0.00	0.00	0.00	0.00	1.67
Total Exclusions in Deletions claimed	**256.44**	**889.48**	**33.79**	**52.79**	**12.32**

35. The Petitioner has claimed exclusion of minor items and tools and tackles under exclusion, which are found to be in order and is therefore allowed. It is

observed that the expenditure on capital spares are not allowed to be capitalized after the cut-off date in terms of the 2014 Tariff Regulations. While the recovery of expenditure on capital spares is allowed through O&M expenses on consumption, the recovery of capital spares, as a part of additional capital expenditure and beyond the cut-off date, are not allowed to be capitalized. Accordingly, the claim of the Petitioner for exclusion of negative entries arising out of de-capitalization of capital spares is justifiable, provided that the decapitalized spares are the ones which were not considered in the capital base for the purpose of tariff in the year of capitalization. On verification of the details in the petition filed by the Petitioner in this petition, it is observed that capital spares decapitalized in books during the period 2014-19, are the ones which were not allowed in the capital cost for the purpose of tariff. In other words, positive entries arising out of their purchase were also excluded/ ignored for the purpose of tariff. In view of the above discussion, the amounts have been allowed to be excluded/ ignored for the purpose of tariff. The exclusion of negative entries arising due to claiming of assumed deletion in different years is also allowed. Further, the exclusion of negative entries arising due to inter unit transfer of minor assets are allowed, as the capitalization of these minor assets are not allowed after the cut-off date. The Petitioner has submitted that "Land" is claimed under exclusion as the Commission has disallowed the same in its order dated 31.12.2013 in Petition No.140/GT/2013. Considering the Petitioner's submission and the Regulations thereof, the exclusion is in order and the same is allowed. Since the liabilities are not allowed to form part of the capital cost for the purpose of tariff, the exclusion of reversal of liabilities is allowed. The Petitioner has linked the details of the items claimed under exclusions and the same are in order. Based on the above, the exclusion in deletions allowed for the purpose of tariff is as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Minor Items	41.89	6.16	16.50	5.05	8.44
Capital spare	214.55	108.56	5.43	43.52	1.47
Disallowed Items	0.00	773.68	0.00	0.00	0.00
IUT	0.00	1.08	0.00	0.00	0.00
De-capitalization kept under exclusion as assumed deletion has been claimed in different year	0.00	0.00	11.86	4.21	0.74
Reversal of liability	0.00	0.00	0.00	0.00	1.67
Total Exclusions in Deletions allowed	**256.44**	**889.48**	**33.79**	**52.79**	**12.32**

Net Additional capital expenditure allowed

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

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Capitalization against works projected and allowed for additional capital expenditure	881.91	545.38	52.28	142.63	20.99
Not projected/not allowed but capitalized due to actual site requirements	8.14	28.57	24.09	18.40	14.99
Total additions allowed	**890.05**	**573.95**	**76.37**	**161.03**	**35.98**
Add: Liability discharged during the year	3.62	37.12	55.37	5.82	13.90
Less: De- capitalization allowed	9.16	15.83	31.61	100.33	29.86
Less: Assumed Deletion	39.43	121.45	16.26	18.44	10.05
Additional capital expenditure allowed (Net)	**845.08**	**473.80**	**83.88**	**48.09**	**9.97**

Capital Cost allowed for the 2014-19 tariff period

37. In view of the above, the capital cost allowed for the purpose of tariff for the 2014-19 tariff period is as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	18908.17	19753.25	20227.05	20310.92	20359.01
Additional capital expenditure allowed (Net)	845.08	473.80	83.88	48.09	9.97
Closing Capital Cost	19753.25	20227.05	20310.92	20359.01	20368.98
Average Capital Cost	19330.71	19990.15	20268.98	20334.97	20364.00

Debt: Equity

38. 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 utilized for meeting the capital expenditure of the generating station or the transmission system.*

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

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

(4) In case of 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 modernization expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.

39. Gross normative loan and equity amounting to Rs.10773.46 lakh and Rs. 8134.71 lakh respectively, as on 31.3.2014, as considered in order dated 17.6.2015 in Petition No.235/GT/2014, has been considered as normative loan and equity as on 1.4.2014. De-capitalization of assets has been deducted from the corresponding loan as well as equity taking into consideration the debt equity ratio applied in the year in which it was capitalized as per Regulation 14 (4) of 2014 Tariff Regulations. The opening and closing debt and equity is as under:

	As on 31.3.2014		**Additional Capitalization**		**De-capitalization**		**As on 31.3.2019**	
	Amount (Rs. in lakh)	**(in %)**	**Amount (Rs. in lakh)**	**(in %)**	**Amount (Rs. in lakh)**	**(in %)**	**Amount (Rs. in lakh)**	**(in %)**
Debt	10773.46	56.98	1297.25	70.00	218.83	55.77	11851.88	58.19
Equity	8134.71	43.02	555.96	30.00	173.57	44.23	8517.10	41.81
Total	**18908.17**	**100.00**	**1853.21**	**100.00**	**392.40**	**100.00**	**20368.98**	**100.00**

Return on Equity

40. 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."

41. 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."

42. Accordingly, the base rate of ROE has been grossed up, based on the actual tax paid by the Petitioner for the 2014-19 period. Accordingly, in terms of the above regulations, ROE has been computed as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Notional Equity- Opening (A)	8134.71	8381.64	8503.95	8521.39	8519.69
Addition of Equity due to additional capital expenditure (B)	246.93	122.31	17.44	(1.69)	(2.59)
Normative Equity- Closing (C) =(A) + (B)	8381.64	8503.95	8521.39	8519.69	8517.10
Average Normative Equity (D) = (A+C)/2	8258.17	8442.79	8512.67	8520.54	8518.40
Return on Equity (Base Rate) (E)	16.500%	16.500%	16.500%	16.500%	16.500%
Effective Tax Rate for the year (F)	20.961%	21.342%	21.342%	21.342%	21.549%

	2014-15	2015-16	2016-17	2017-18	2018-19
Rate of Return on Equity (Pre-Tax) (G) = (E)/(1-F)	20.876%	20.977%	20.977%	20.977%	21.032%
Return on Equity (H) = (D)*(G)	**1723.98**	**1771.04**	**1785.70**	**1787.35**	**1791.59**

<u>Interest on Loan</u>

43. 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 2014-19 tariff period 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 reenactment 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."

44. The actual loan pertaining to the generating station has already been repaid. The weighted average rate of interest, as submitted by the Petitioner for the 2014-19 tariff period has been considered in this order. Interest on loan has been worked out as under:

i. The opening gross normative loan of Rs. 10773.46 lakh as on 1.4.2014 has been arrived at in accordance with Regulation 26 of the 2014 Tariff Regulations.

ii. Cumulative repayment amounting to Rs. 10773.46 lakh as on 31.3.2014 as considered in order dated 17.6.2015 in Petition No. 235/GT/2014 has been considered as on 1.4.2014;

iii. The repayment for the respective years of the 2014-19 tariff period has been considered equal to the depreciation allowed for that year.

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

iv. Interest on loan has been calculated on the normative average loan of the year by applying the last available weighted average rate of interest in line with first proviso of Regulation 26 (5) of the 2014 Tariff Regulations.

45. Accordingly, Interest on loan has been computed as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Gross opening loan (A)	10773.46	11371.61	11723.10	11789.54	11839.32
Cumulative repayment of loan up to previous year (B)	10773.46	11371.61	11723.10	11789.54	11759.95
Net Loan Opening (C) = (A) - (B)	0.00	0.00	0.00	0.00	79.37
Addition due to additional capital expenditure (D)	598.15	351.49	66.44	49.78	12.56
Repayment of loan during the year (E)	632.16	447.58	99.94	53.55	54.79
Less: Repayment adjustment on a/c of de-capitalization (F)	34.01	96.09	33.50	83.14	27.94
Repayment of Loan during the period (Net) (H) = (E) – (F)	598.15	351.49	66.44	-29.58	26.86
Net Loan Closing (I) = (C)+(D)–(H)	-	-	-	79.37	65.07
Average Loan (J) = (C+I)/2	-	-	-	39.68	72.22
Weighted Average Rate of Interest of loan (K)	12.50%	12.50%	12.50%	12.50%	12.50%
Interest on Loan (L) = (J)*(K)	**-**	**-**	**-**	**4.96**	**9.03**

Depreciation

46. 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 maybe, shall not be allowed to be recovered at a later stage during the useful life and the extended life.

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

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

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

(6) In case of the existing projects, the balance depreciable value as on1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to 31.3.2014 from the gross depreciable value of the assets.

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

depreciation on capital expenditure during the fag end of the project.

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

47. Depreciation for the 2014-19 tariff period has been computed based on the methodology adopted in order dated 17.6.2015 in Petition No. 235/GT/2014. Accordingly, depreciation on the additional capitalization allowed during 2014-19 has been calculated by spreading over the depreciable asset value over the extended life of the generating station, i.e. 25 years. However, for the depreciable value as on 1.4.2009, depreciation has been allowed till the completion of 35 years, i.e. till 2016-17. Accordingly, the depreciation worked-out is as follows:

(Rs. in lakh)

A- Without the impact of additional capitalization during 2014-19					
	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Average gross block (A)	18908.17	18908.17	18908.17	18908.17	18908.17
Weighted Average Rate of Depreciation (WAROD) (B)	0.00%	0.00%	0.00%	0.00%	0.00%
Balance Useful Life (C)	3.00	2.00	1.00	-	-
Depreciable Value (D) = (A) * 90%	16883.96	16883.96	16883.96	16883.96	16883.96
Remaining Depreciable Value (E)	2783.36	1892.95	1058.34	41.35	146.81
Depreciation (F) = (A) * (B)	927.78	946.47	1058.34	**-**	**-**
Cumulative Depreciation (at the end of the period) (G)	15028.39	15937.48	16883.96	16842.61	16737.15
Cumulative Depreciation reduction due to decapitalization (H)	37.38	111.87	41.35	105.46	35.29
Cumulative Depreciation after adjustment due to decapitalization (at the end of the period) (I) = (G-H)	14991.01	15825.61	16842.61	16737.15	16701.86

(Rs. in lakh)

B:- Depreciation on additional capitalization during 2014-19					
	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Average gross block (A)	422.54	1081.98	1360.81	1426.80	1455.83
Balance Useful Life (C)	25.00	24.00	23.00	22.00	21.00
Depreciable Value (D) = (A) * 90%	380.29	973.78	1224.73	1284.12	1310.24
Remaining Depreciable Value (E)	380.29	958.57	1169.58	1178.11	1150.69
Depreciation (F)	15.21	39.94	50.85	53.55	54.79

B:- Depreciation on additional capitalization during 2014-19					
	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Cumulative Depreciation (at the end of the period) (G)	15.21	55.15	106.00	159.55	214.35
Cumulative Depreciation reduction due to decapitalization (H)	0.00	0.00	0.00	0.00	0.00
Cumulative Depreciation after adjustment due to decapitalization (at the end of the period) (I) = (G-H)	15.21	55.15	106.00	159.55	214.35

(Rs. in lakh)

Total Depreciation allowed during 2014-19					
	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
A:- Without considering the impact of additional capitalization during 2014-19	927.78	946.47	1058.34	0.00	0.00
B:- Depreciation on additional capitalization during 2014-19	15.21	39.94	50.85	53.55	54.79
Total depreciation allowed (A+B)	942.99	986.41	1109.19	53.55	54.79

O&M Expenses

48. As regards normative O&M expenses, Regulation 29(3)(a) of the 2014 Tariff Regulations provides as under:

> *"29. Operation and Maintenance Expenses:*
> *(a) Following operations and maintenance expense norms shall be applicable for hydro generating stations which have been operational for three or more years as on 01.04.2014:*
>
> ***(Rs. in lakh)***

2014-15	2015-16	2016-17	2017-18	2018-19
8696.25	9274.03	9890.19	10547.30	11248.06

49. The Petitioner has claimed O&M expenses for the 2014-19 tariff period in terms of Regulation 29(3)(a) of the 2014 Tariff Regulations and as allowed vide order dated 17.6.2015 in Petition No. 235/GT/2014. Accordingly, the claim for O&M expenses is allowed.

Additional O&M expenses

Impact of Goods & Services Tax

50. The Petitioner has also claimed reimbursement of the additional tax paid due

to implementation of GST in respect of generating station as additional O&M expenses and for this purpose, has prayed for relaxation of the provisions of Regulation 29(3) in exercise of the powers under Regulation 54 and Regulation 55 of the 2014 Tariff Regulations. The Petitioner has further submitted that the implementation of GST is a "change in law" event and the impact of the same should be passed through in tariff. As such, the tax paid in O&M expenses of plants (service portion) is claimed over and above the O&M expenses of the respective power stations. The Petitioner has submitted that it had filed Petition No. 133/MP/2019, which was disposed of by the Commission vide its order dated 22.8.2019, granting liberty to the Petitioner to raise the claim for reimbursement of additional tax on O&M expenses due to implementation of GST Act, 2017 along with the truing up petition for the 2014-19 tariff period. The additional impact of GST in 2017-18 (1.7.2017 to 31.3.2018) and 2018-19 as submitted by the Petitioner, duly certified by statutory auditors, are as under:

(Rs. in lakh)

2017-18	**2018-19**		**Total**
	1.4.2018 to 31.12.2018	**1.1.2019 to 31.3.2019**	
4347193	4809226	2375734	11532153

51. The matter has been considered. It is observed that the Commission while specifying the O&M expense norms for the 2014-19 tariff period had considered taxes to form part of the O&M expense calculations and, accordingly, had factored the same in the said norms. This is evident from paragraph 49.6 of the SOR (Statement of Objects and Reasons) to the 2014 Tariff Regulations, which is extracted hereunder:

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

52. Further, the escalation rates considered in the O&M expense norms under the

2014 Tariff Regulations is only after accounting for the variations during the period from FY 2008-09 to FY 2012-13, which in our view, takes care of any variation in taxes also. It is pertinent to mention that in case of reduction of taxes or duties, no reimbursement is ordered. In this background, we find no reason to allow the prayer for grant of additional O&M expenses towards payment of GST.

Capital Spares

53. The capital spares claimed by the Petitioner are as under:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18
215.69	63.00	5.43	43.52

54. We have examined the list of spares furnished by the Petitioner. It is pertinent to mention that the term 'capital spares' has not been defined in the 2014 Tariff Regulations. The term capital spares, in our view, is a piece of equipment, or a spare part, of significant cost that is maintained in inventory for use in the event that a similar piece of critical equipment fails or must be rebuilt. Keeping in view the principle of materiality and to ensure standardized practices in respect of earmarking and treatment of capital spares, the value of capital spares exceeding Rs.1.00 lakh, on prudence check of the details furnished by the Petitioner in the Petition, has been considered for the purpose of tariff. Based on this, the details of capital spares consumption allowed for the 2014-19 tariff period is summarized as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18
Total capital spares consumed claimed	215.69	63.00	5.43	43.52
Less: Value of capital spares below Rs.1.00 lakh disallowed on individual basis	3.76	0.15	0.00	0.00
Net total value of capital spares considered	**211.93**	**62.85**	**5.43**	**43.52**

55. Further, we are of the view that spares do have a salvage value. Accordingly,

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

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Net total value of capital spares considered	211.93	62.85	5.43	43.52	0.00
Less: Salvage value @ 10%	21.19	6.28	0.54	4.35	0.00
Net capital spares allowed	**190.73**	**56.56**	**4.88**	**39.17**	**0.00**

Interest on Working Capital

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

> *"28 (1) (c) Hydro generating station including pumped storage hydroelectric generating station and transmission system including communication system:*
>
> *(i) Receivables equivalent to two months of fixed cost;*
> *(ii) Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 29; and*
> *(iii) Operation and maintenance expenses for one month."*

Working capital for Receivables

57. Accordingly, Receivable's component of working capital has been worked out on the basis of two months of fixed cost as under:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
2017.71	2111.16	2233.87	2176.61	2294.59

Working capital for Maintenance Spares

58. Maintenance spares @ 15% of O&M expenses are worked out and allowed

as under:

				(Rs. in lakh)
2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
1333.05	1399.59	1484.26	1587.97	1687.21

Working capital for O&M Expenses

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

				(Rs. in lakh)
2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
740.58	777.55	824.59	882.21	937.34

Rate of Interest on Working Capital

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

> *"(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."*

61. In terms of the above regulations, the Bank Rate of 13.50% (Base Rate + 350 Basis Points) as on 1.4.2014 has been considered by the Petitioner. This has been considered in the calculations for the purpose of tariff.

62. Accordingly, interest on working capital is allowed as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Working capital for O & M expenses	740.58	777.55	824.59	882.21	937.34
Working capital for Maintenance Spares	1333.05	1399.59	1484.26	1587.97	1687.21
Working capital for Receivables	2017.71	2111.16	2233.87	2176.61	2294.59
Total Working Capital	4091.34	4288.30	4542.72	4646.79	4919.14
Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
Total Interest on Working capital	**552.33**	**578.92**	**613.27**	**627.32**	**664.08**

<u>Annual Fixed charges</u>

63. Accordingly, the annual fixed charges approved for the generating station

for the 2014-19 tariff period are summarized as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	942.99	986.41	1109.19	53.55	54.79
Interest on Loan	0.00	0.00	0.00	4.96	9.03
Return on Equity	1723.98	1771.04	1785.70	1787.35	1791.59
O&M Expenses	8886.98	9330.59	9895.07	10586.47	11248.06
Interest on Working Capital	552.33	578.92	613.27	627.32	664.08
Total	**12106.28**	**12666.96**	**13403.23**	**13059.65**	**13767.55**

Normative Annual Plant Availability Factor

64. Clause (4) of Regulation 37 of the 2014 Tariff Regulations provides for Normative Annual Plant Availability Factor (NAPAF) for hydro generating stations already in operation. Accordingly, NAPAF of 90% has been considered for the generating station.

Design Energy

65. The Commission in its order dated 17.6.2015 in Petition No.235/GT/2014 had allowed the annual Design Energy (DE) of 779.28 Million Units for the 2014-19 tariff period in respect of this generating station. The same has been considered in this order, as per month-wise details below:

Month	Design Energy (MUs)
April	97.85
May	106.00
June	92.8
July	109.24
August	115.08
September	59.86
October	35.39
November	25.22
December	22.21
January	23.81
February	29.43
March	62.39
Total	**779.28**

Summary

66. The annual fixed charges claimed and allowed for the 2014-19 tariff period are summarized below:

(Rs. in lakh)

Annual fixed charges	2014-15	2015-16	2016-17	2017-18	2018-19
Claimed	11917.15	12623.01	13354.74	13075.12	13824.98
Allowed	**12106.28**	**12666.96**	**13403.23**	**13059.65**	**13767.55**

67. The difference between the annual fixed charges recovered in terms of the order dated 17.6.2015 in Petition No.235/GT/2014 and the annual fixed charges determined by this order, shall be adjusted in terms of Regulation 8 (13) of the 2014 Tariff Regulations.

68. Petition No. 143/GT/2020 is disposed of in terms of the above.

Sd/-	Sd/-	Sd/-
(Pravas Kumar Singh)	**(Arun Goyal)**	**(I. S. Jha)**
Member	**Member**	**Member**