

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 291/GT/2020**

**Coram:**

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

**Date of Order: 6<sup>th</sup> January 2024**

**IN THE MATTER OF**

Petition for truing-up of tariff for the period 2014-19 and determination of tariff for the period 2019-24 in respect of Chamara-II Hydroelectric Project (300 MW).

**AND**

**IN THE MATTER OF**

NHPC Limited,  
NHPC Office Complex, Sector-33,  
Faridabad (Haryana)- 121003

**...Petitioner**

**Vs**

1. Punjab State Power Corporation Limited,  
The Mall, Near Kali Badi Mandir,  
Patiala- 147001 (Punjab)
2. Haryana Power Purchase Center,  
Shakti Bhawan, Sector 6  
Panchkula 134109 (Haryana)
3. BSES Rajdhani Power Limited,  
BSES Bhawan, Nehru Place,  
New Delhi- 110019.
4. BSES Yamuna Power Limited,  
Shakti Kiran building,  
Karkardooma,  
Delhi – 110072
5. Tata Power Delhi Distribution Limited,  
33 kV Sub-Station Building,  
Hudson Lane, Kingsway Camp  
New Delhi – 110009



6. Power Development Department,  
New Secretariat,  
Jammu – 180001 (J&K)
7. Uttar Pradesh Power Corporation Limited,  
Shakti Bhawan, 14 Ashik Marg,  
Lucknow– 226001 (Uttar Pradesh)
8. Ajmer Vidyut Vitaran Nigam Limited,  
Old Powerhouse, Hatthi Bhatta,  
Jaipur Road, Ajmer– 305001 (Rajasthan)
9. Jaipur Vidyut Vitaran Nigam Limited,  
Vidyut Bhawan, Janpath,  
Jaipur– 302005 (Rajasthan)
10. Jodhpur Vidyut Vitaran Nigam Limited,  
New Powerhouse, Industrial Area,  
Jodhpur– 342003 (Rajasthan)
11. Uttaranchal Power Corporation Limited,  
Urja Bhawan, Kumar House,  
Dehradun– 248001 (Uttarakhand)
12. Engineering Department,  
1<sup>st</sup> Floor, UT Secretariat, Sector 9-D,  
Chandigarh - 160009
13. Himanchal State Electricity Board,  
Vidyut Bhawan, Kumar House  
Shimla – 171004 (Himachal Pradesh)

...Respondents

**Parties Present:**

Shri Sachin Datta, Senior Advocate, NHPC  
Shri Ajay Shrivastava, NHPC  
Shri Piyush Kumar, NHPC  
Shri R.B. Sharma, Advocate, BRPL  
Ms. Megha Bajpeyi, BRPL  
Shri Mohit Mudgal, Advocate, BYPL  
Shri Sachin Dubey, Advocate, BYPL



## **ORDER**

This Petition has been filed by the Petitioner, NHPC Limited for truing-up of tariff of Chamera -II Hydroelectric Project (300 MW) (in short “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 (in short “the 2014 Tariff Regulations”) and for determination of tariff of the generating station for the period 2019-24, in accordance with the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (in short “the 2019 Tariff Regulations”). The generating station located in the State of Himanchal Pradesh comprises of three units of 100 MW capacity each, which was declared under commercial operation on 2.11.2003, 1.1.2004 and 31.3.2004.

2. The Petitioner had filed Petition No. 233/GT/2014 for truing up of tariff for the period 2009-14 and determination of annual fixed charges of the generating station for the period 2014-19 and the Commission vide order dated 17.6.2016 approved the capital cost and annual fixed charges, based on the capital cost of Rs. 200106.10 lakh as on 31.3.2014, as under:

### ***Capital Cost allowed***

	<b>(Rs. in lakh)</b>				
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Opening Capital Cost	200106.10	200188.02	200413.90	200979.75	200979.75
Admitted additional capitalization	81.92	225.88	565.85	0.00	0.00
Closing Capital Cost	200188.02	200413.90	200979.75	200979.75	200979.75

### ***Annual Fixed Charges allowed***

	<b>(Rs. in lakh)</b>				
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Return on Equity	12810.21	12819.84	12844.64	12862.36	12862.36
Interest on Loan	2261.75	1808.91	1144.30	901.16	635.81



	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	10321.76	10329.70	2423.73	2435.31	2435.31
Interest on Working Capital	985.38	1002.00	833.70	859.06	885.26
O&M Expenses	7256.54	7738.66	8252.82	8801.14	9385.89
<b>Total</b>	<b>33635.64</b>	<b>33699.12</b>	<b>25499.19</b>	<b>25859.03</b>	<b>26204.62</b>

### **TRUING UP OF TARIFF FOR THE PERIOD 2014-19**

4. In terms of Regulation 8(1) of the 2014 Tariff Regulations, the Petitioner vide affidavit dated 23.10.2019 has filed the present Petition for truing up of tariff of the generating station for the period 2014-19. Thereafter, the Petitioner vide affidavit dated 29.6.2021 has revised its claim for additional capital expenditure and has accordingly claimed the capital cost and annual fixed charges as under:

#### ***Capital Cost claimed***

(Rs. in lakh)

	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Opening capital cost	200106.10	200226.95	200485.69	201059.51	201206.65
Add: Additional during the year	138.24	308.62	670.34	138.21	122.84
Less: De-capitalisation during the year	35.39	71.98	133.01	49.66	19.98
Add: Discharges during the year	18.00	22.11	36.49	58.60	20.72
<b>Closing capital cost</b>	<b>200226.95</b>	<b>200485.69</b>	<b>201059.51</b>	<b>201206.65</b>	<b>201330.23</b>
<b>Average capital cost</b>	<b>200166.52</b>	<b>200356.32</b>	<b>200772.60</b>	<b>201133.08</b>	<b>201268.44</b>

#### ***Annual Fixed Charges claimed***

(Rs. in lakh)

	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	10,322.77	10,366.36	2,854.78	2,873.06	2,880.27
Interest on Loan	2,216.40	1,781.97	1,088.91	802.49	497.39
Return on Equity	12,942.14	12,985.48	12,909.09	13,018.71	13,078.49
Interest on Working Capital	987.40	1,006.03	843.83	870.47	897.29
O&M Expenses	7,256.54	7,738.66	8,252.82	8,801.14	9,385.89
<b>Total</b>	<b>33,725.25</b>	<b>33,878.50</b>	<b>25,949.43</b>	<b>26,365.86</b>	<b>26,739.33</b>

5. The Respondents UPPCL, BYPL and BRPL have filed their replies vide affidavits dated 29.6.2021, 23.7.2021 and 27.10.2021 respectively and the Petitioner has filed its rejoinders to the said replies, vide affidavits dated 30.7.2021 and



22.11.2021, respectively. The Petitioner has also submitted additional information vide affidavit dated 29.6.2021 after serving copy to the Respondents. This Petition was heard on 31.3.2022, and the Commission after hearing the parties, reserved its order in the matter. Based on the submissions of the parties and documents available on record and after prudence check, we proceed for truing up the tariff of the generating station for the period 2014-19 along with determination of tariff for the period 2019-24, as stated in the subsequent paragraphs.

### **Capital Cost**

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

*“9. Capital Cost:*

*(3) The Capital cost of an existing project shall include the following:*

- (a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;*
- (b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and*
- (c) expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15.”*

7. The Commission vide its order dated 17.6.2016 in Petition No. 233/GT/2014 had approved the opening capital cost of Rs.200106.10 lakh as on 31.3.2014. The Petitioner in this petition has also claimed opening capital cost of Rs.200106.10 lakh as on 1.4.2014. Accordingly, the capital cost of Rs. 200106.10 lakh has been considered as the opening capital cost as on 1.4.2014, for the purpose of truing-up of tariff for the period 2014-19.

### **Additional Capital Expenditure**

8. Regulation 14 of the 2014 Tariff Regulations provides as under:

*14. Additional Capitalisation and De-capitalisation:*

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



*the Commission, subject to prudence check:*

- (i) Undischarged liabilities recognized to be payable at a future date;*
- (ii) Works deferred for execution;*
- (iii) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 13;*
- (iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law; and*
- (v) Change in law or compliance of any existing law:*

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

*(2) The capital expenditure incurred or projected to be incurred in respect of the new project on the following counts within the original scope of work 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) Deferred works relating to ash pond or ash handling system in the original scope of work; and*
- (iv) Any liability for works executed prior to the cut-off date, after prudence check of the details of such undischarged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.*

*(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 undischarged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.;*
- (vi) Any liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;*
- (vii) Any additional capital expenditure which has become necessary for efficient operation of generating station other than coal / lignite-based stations or transmission system as the case may be. The claim shall be substantiated with the technical justification duly supported by the documentary evidence like test results carried out by an independent agency in case of deterioration of assets, report of an independent agency in case of damage caused by natural calamities, obsolescence of technology, up-gradation of capacity for the technical reason such as increase in fault level;*
- (viii) In case of hydro generating stations, any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding*



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

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

(x) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receiving system arising due to non-materialisation 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.

(4) In case of de-capitalisation 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-capitalisation 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-capitalisation takes place, duly taking into consideration the year in which it was capitalised."

9. We now examine the actual additional capital expenditure claimed by the Petitioner for the period 2014-19 as under:

### **2014-15**

<b>(Rs. in lakh)</b>					
<b>S. No</b>	<b>Details of the claim</b>	<b>Amount claimed</b>	<b>Justification submitted by the Petitioner</b>	<b>Remarks on admissibility</b>	<b>Amount Allowed</b>
<b>A. Items already approved by the Commission in 2014-15</b>					
1	Construction of stores at Dam site for Civil/HM/Elect complex	9.67	The Petitioner has submitted that the additional capital	It is observed that the additional capital expenditure under	9.67





S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
2	Construction of Dining hall and Kitchen for CISF	16.35	expenditure under these heads have been approved by the Commission vide order dated 17.6.2016 in Petition 233/GT/2014	these heads has already been allowed by the Commission vide order dated 17.6.2016 in Petition 233/GT/2014 under Regulation 14(3)(viii) of the 2014 Tariff Regulations. In view of this, the additional capital expenditure claimed @ sl nos. 1 to 4 are allowed.	16.35
3	Construction of 01 nos. Security huts (Retiring rooms) at TRT	4.21			4.21
4	Construction of Store building at Powerhouse	36.49			36.49
5	Fiber Boat for Dam site	3.80		It is observed that the additional capital expenditure under these heads has already been allowed by the Commission vide its order dated 17.6.2016 in Petition 233/GT/2014 under Regulation 14(3)(viii) of the 2014 Tariff Regulations. In view of this, the additional capital expenditure claimed is allowed. The corresponding de-capitalization has been considered under assumed deletion.	3.80
<b>Sub-Total (A)</b>		<b>70.53</b>			<b>70.53</b>
<b>B. Items Allowed by Commission in different years, but capitalised in 2014-15</b>					
1	Replacement of Drainage VT pumps with submersible pump.	23.34	The Petitioner has submitted that the Commission has allowed this additional expenditure in 2015-16 vide order dated 17.6.2016 in Petition 233 /GT/2014, however due to urgency the same was capitalized in 2014-15.	It is observed that the additional capital expenditure under these heads has already been allowed by the Commission vide order dated 17.6.2016 in Petition 233/GT/2014 under Regulation 14(3)(viii) of the 2014 Tariff Regulations. In view of this, the additional capital expenditure claimed is allowed. The corresponding de-	23.34





S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
				capitalization has been considered under assumed deletion	
2	Pendant operated EOT crane for new store building at Powerhouse	0.87		It is observed that the additional capital expenditure under these heads has already been allowed by the Commission vide order dated 17.6.2016 in Petition 233/GT/2014 under Regulation 14(3)(viii) of the 2014 Tariff Regulations. In view of this, the additional capital expenditure claimed is allowed.	0.87
	<b>Sub-Total (B)</b>	<b>24.21</b>			<b>24.21</b>
<b>C. Additional items which were not claimed earlier</b>					
1	Full HD 1080p video conferencing equipment including full DD camera and accessories, cisco sx20	3.67	For improving the efficiency and performance of power station by better co-ordination between Power Station and Corporate Office, video conferencing facility was needed. Accordingly, the required equipment for the same have been purchased and installed.	It is observed that the additional capital expenditure claimed by the Petitioner is not directly related to the operation of the plant. Hence, the claim of the Petitioner @ sl. Nos 1 & 2 is <b>not allowed</b> .	0.00
2	Construction of Office Room at Central Stores, Karian	4.65	There were only 02 rooms available in Central Store for office purpose. One of them was being used as office for Petrol Pump and another one for staff posted in Central Store. One more room was required for officer looking after the work of store and petrol pump, accordingly, the same has been constructed.		0.00
3	Purchase of 600 LPH, Movable, High Vacuum Transformer Oil Filtration Plant	6.13	Presently total 11 nos. of ONAN cooled 11/0.415 KV transformers are available in CPS-II	Considering the fact that the expenditure claimed is in the nature of O&M expenses, the	0.00



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			installed at different location like colony, dam, butterfly valve, surge shaft, adits etc. Filtration of oil of these transformers is essential for enhancing life of oil & transformers. Earlier, the oil of these transformers was being filtered through Oil Filtration Plant of Main Generator Transformer, which is of large size (designed for GT application) and its transportation to different sites for above distribution transformer was very difficult. Accordingly, new small filtration plant of 600 LPH capacity was purchased.	claim is <b>not allowed</b> .	
4	Purchase of additional sirens and their power back-up arrangements	1.02	As per instructions of District Administration (Letter dated 21/12/2013 & 01/04/2016), additional sirens and their back up arrangements for various locations along Ravi River have been purchased in phased manner, to alert local public, about release of water from dam/ powerhouse. Total expenditure incurred for the same in 2014-15, 2015-16, 2016-17, 2017-18 & 2018-19 has been Rs 2.38 Lakh (Item No. C4 of 9A_14-15), Rs 0.78 Lakh (Item No. C3 of 9A_15-16), Rs 15.51 Lakh (Item No. 11 of 9A_16-17), Rs 4.63 Lakh (Item No. 9 of 9A_17-18) & Rs 1.5 Lakh (Item No. 12 of 9A_18-19) respectively.	As these works are required for the successful and efficient operation of plant, and as the same is claimed on the basis of recommendations of CISF, the same are <b>allowed</b> under Regulation 14(3)(iii) of the 2014 Tariff Regulations.	1.02
5	Bullet proof mobile	0.08	2 No. Bullet Proof mobile		0.08



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
	morchha (2 no.)		Morchha have been purchased for CISF to strengthening the security of the Power Station.		
6	Replacement of Servers (INTEL XEON Server 6C Proc.E5-2630,32GB, SAS HDD 4x 600 GB, WINSVRSTD 2012 SNGL OLP, DELL PowerEdge R720) (2 Nos.)	4.12	Old servers, purchased in 2004, were giving frequent technical problems and had become obsolete. So, there was a need of new servers for proper functioning of IT infrastructure. Accordingly, new servers have been purchased in replacement of old servers, whose actual decapitalisation has been done in 2017-18 (refer Item No. 13 of 9B(i)_17-18)). Same decapitalisation value of Rs. 11.3 Lakh of gross block of old servers have been shown in Form-9B(i) in 2014-15 (refer Item No. 50)	Considering the fact that the expenditure claimed is minor in nature, the additional capital expenditure claimed is <b>not allowed</b> in terms of the first proviso to Regulation 14(3) of the 2014 Tariff Regulations. The corresponding decapitalization is also <b>not allowed</b> .	0.00
7	Oil transfer unit, 1.5 kw motor, operating pressure 4.5 bar maxm	0.30	Turbine Oil transfer Unit is required in Powerhouse for maintenance works. Earlier, there was only one oil-transfer Unit in the Power Station since commissioning. However, during annual maintenance works, requirement of an additional oil transfer unit, was felt for taking up maintenance works on two fronts simultaneously (to minimize maintenance period). Accordingly, an additional oil transfer unit has been purchased.	Considering the fact that the expenditure claimed is in the nature of O&M expenses, the claim is <b>not allowed</b> .	0.00
8	Purchase of Micro Calibration Bath,	5.13	To monitor the temperatures in	Considering the fact that the expenditure	0.00



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
	MODEL: CTB9100-165, MAKE : WIKA		Generator & Generator's Transformers, RTDs & TSDs have been installed. For ensuring that the temperatures are being monitored accurately, these RTDs & TSDs are required to be calibrated on annual basis. For Calibration of RTDs & TSDs in a scientific/Professional manner, isothermal oil bath was required and purchased.	claimed is minor in nature, the additional capital expenditure claimed is <b>not allowed</b> in terms of the first proviso to Regulation 14(3) of the 2014 Tariff Regulations. The corresponding decapitalization is also not allowed.	
9	Submersible pumps of various capacities (3HP- 4Nos, 1.5HP- 2Nos, 3HP- 2Nos) for drainage of turbine pits, on replacement basis	3.45	The high silt in the river result in erosion of underwater parts and consequently leakage from turbine increases manifold and therefore to dewater the turbine pit submersible pumps are required so that damages to other parts like TGB pads, journal & housing are avoided and draining of oil is also eliminated. Further, due to high silt, these pumps become unserviceable in 5-10 years. So, new pumps have been purchased against replacement of old pumps, whose actual de-capitalisation has been done during 2018-19 (Sl no. 11-18 of 2018-19). However, same de-capitalisation value of Rs. 3.28 lakh (for 8 nos pumps) of old pumps have been shown in Form-9B(i) in 2014-15 (Sl. No. 42-49) as assumed deletion.	As these works are required for the successful and efficient operation of plant, the claims of the Petitioner @sl nos. 9 & 10, are <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding de-capitalization has been considered under assumed deletion in subsequent section.	3.45
10	Purchase of Governor Main distributing Valve, D-50 (ALSTOM)	14.96	This item was capitalised along with mother plant. The item is in use for last		14.96



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			11 year and due to wear it had become beyond economical repair. Hence its replacement has been done. Actual de-capitalisation has been done during 2017-18 (refer item no. 7). However, same de-capitalisation value of Rs 7.41 Lakh has been shown in Form-9B(i) in 2014-15 (Sl. No 52) as assumed deletion.		
	<b>Sub-Total C</b>	<b>43.51</b>			<b>19.51</b>
	<b>Total amount (A+B+C)</b>	<b>138.24</b>			<b>114.24</b>

10. Based on the above, the total additional capital expenditure of Rs. 114.24 lakh is allowed in 2014-15.

### **2015-16**

11. The details of the additional capital expenditure claimed under the provisions of Regulation 14 of the 2014 Tariff Regulations are examined below:

<i>(Rs. in lakh)</i>					
S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
<b>A. Items already approved by the Commission in 2015-16</b>					
<b>1</b>	Purchase of oil mist Exhauster	8.96	In justification to the claim the Petitioner has submitted that these assets were already allowed by the Commission vide order dated 17.6.2016 in Petition 233/GT/2014.	It is observed that the additional capital expenditure under these heads has already been allowed by the Commission vide order dated 17.6.2016 in Petition 233/GT/2014 under Regulation 14(3)(viii) of the 2014 Tariff Regulations. In view of this, the additional capital expenditure claimed @sl nos. 1 to 3 are <b>allowed</b> .	8.96
<b>2</b>	Purchase of DG set 500	50.03		As these works are	50.03



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
	KVA - 2 No. along with AMF panel			required for the successful and efficient operation of plant, the same are <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding de-capitalization has been considered under assumed deletion in subsequent section	
3	Purchase of one 380 KVA DG Set for Dam	24.03			24.03
4	Bolero - 02 Nos	1.47		As these works are required for the successful and efficient operation of plant, the claim of the Petitioner is <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding de-capitalization has been considered under de-capitalization.	1.47
5	100 KVA DG set with acoustic enclosure and AMF panel.	5.51		It is observed that the additional capital expenditure under these heads has already been allowed by the Commission vide order dated 17.6.2016 in Petition 233/GT/2014 under Regulation 14(3)(viii) of the 2014 Tariff Regulations. In view of this, the additional capital expenditure claimed is <b>allowed</b> .	5.51
6	Replacement of Drainage VT pumps with submersible pump.	23.36		As these works are required for the successful and efficient operation of plant, the claim is <b>allowed</b> under Regulation 14(3)(viii)	23.36



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
				of the 2014 Tariff Regulations. The corresponding de-capitalization has been considered under assumed deletion.	
	<b>Sub-Total (A)</b>	<b>113.36</b>			<b>113.36</b>
<b>B. Allowed by CERC in different years, but capitalised during 2015-16</b>					
1	Submersible Drainage Pump with panel and pipeline for Disaster Management Programme	7.05	The Petitioner has submitted that the Commission has allowed installation of drainage pump with panels in Powerhouse under Disaster Management Plan in 2016-17 with total cost of Rs 150 Lakh. Total expenditure for this item has been Rs 161.13 Lakh ('Rs 8.86 Lakh for transformer panel as per Item No. B(1) of 9A_15-16' + 'Rs 152.27 Lakh for pump as per Item No. A1 of 9A_16-17') as per market prices discovered after tendering.	It is observed that the additional capital expenditure under these heads has already been allowed by the Commission vide order dated 17.6.2016 in Petition 233/GT/2014 under Regulation 14(3)(viii) of the 2014 Tariff Regulations. In view of this, the additional capital expenditure claimed is <b>allowed</b> .	7.05
	<b>Sub-Total B</b>	<b>7.05</b>			<b>7.05</b>
<b>C. Additional items which were not claimed earlier</b>					
1	Fabrication of 2 No Inspection Bridge Down stream of Radial Gate pier	14.38	There are 4 nos of radial gates at Dam. For inspection, there are only two inspection bridge over the radial piers of radial gates no 1 and 2 in the downstream side. There is no inspection bridge in the downstream side of gate no 3 & 4. For inspection of these gates from downstream side, inspection bridges were required and made.	As the assets/items claimed @sl nos. 1 & 2 are required for the successful and efficient operation of plant, the claims are <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	14.38
2	Construction of Bachelor Accommodation for CISF Sub-Officers	33.33	As per Guidelines for "Provision and planning of hostels, CISF accommodation and other amenity buildings in township of public sector		33.33





S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			enterprises," (copy attached) dated 06July1978, accommodation is to be provided to CISF. The posted strength of Sub-Officers of CISF at CPS-II is 18 Nos. No separate bachelor hostel was provided to Sub-Officers and they were accommodated along with other ranks, which was not as per the discipline and decorum of the force. As per the guidelines/norms of the force, sub-officers have to be provided separate bachelor accommodation as requested by DC in letter dated 16/08/13. Hence, a separate field hostel for bachelor accommodation for CISF officials was constructed. Expenditure of Rs 33.33 Lakh in 2015-16 for civil works (Item No. C2 of 9A_15-16) & Rs 2.61 Lakh in 2016-17 for electrification (Item No. C6 of 9A_16-17) has been incurred.		
3	Purchase of additional sirens and their power back-up arrangements	0.78	As per instructions of District Administration (Letter dated 21/12/2013 & 01/04/2016), additional sirens and their back up arrangements for various locations along Ravi River have been purchased in phased manner, to alert local public, about release of water from dam/ powerhouse. Total expenditure incurred for the same in 2014-15, 2015-16, 2016-17, 2017-18 & 2018-19 has been Rs 2.38 Lakh (Item No. C4 of	As the assets/items claimed @ sl nos. 3 & 4 are required for the successful and efficient operation of plant, the claims are <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	0.78



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			9A_14-15), Rs 0.78 Lakh (Item No. C3 of 9A_15-16), Rs 15.51 Lakh (Item No. 11 of 9A_16-17), Rs 4.63 Lakh (Item No. 9 of 9A_17-18) & Rs 1.5 Lakh (Item No. 12 of 9A_18-19) respectively.		
4	Purchase of 48V battery bank along with Charger	8.35	An External Enquiry Committee was constituted for basic protection audit in view of grid failure on 30.7.2012 and 31.7.2012. The committee made recommendation that a 48 V DC battery bank may be installed for PLCC communication. Expenditure of Rs10.38 Lakh in 2015-16 for supply portion (refer Item No. C4 of 9A_15-16) & Rs 0.26 Lakh in 2016-17 as per Item No. C5 of 9A_16-17 for commissioning has been incurred.		8.35
5	Replacement of micro-SCADA server system of Powerhouse & Supply & Installation of SCADA Software for Revival of Rockwell Desktop installed at Dam site	85.75	Chamera-II is SCADA based automatic power station. Operation of the generating units is done only through the SCADA. The plant was commissioned in 2003-2004 and the existing installed SCADA system was based upon 15 years old technology which became obsolete. Also, proper support for the same was not available from the OEM. Problems like frequent hanging of servers and software related problems, were affecting the operation of generating units and the performance of the Power Station. Up gradation was needed to cope with the	As the assets/items claimed @sl nos. 5 & 6 are required for the successful and efficient operation of plant, the claims are <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The de capitalization of the old asset has been considered under assumed deletion in subsequent sections.	85.75



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			obsolescence and adopting new technology so that interruption in the plant operation and electricity generation could be avoided. Expenditure of Rs 109.84 Lakh in 2015-16 (Item No. C5 of 9A_15-16) & Rs 35.55 Lakh in 2016-17 (Item No. C3 of 9A_16-17) has been incurred, for the required upgradation work. The originally installed system was included in the total E&M package and its acquisition cost is not available. So, replacement value of this item has been calculated on the basis of CI Index of 2003-04 and 2015-16 & 2016-17. Rs. 47.14 lakh's decapitalisation has been shown as Assumed Deletion in Form-9B(i) in 2015-16 (Sl. No. 23). Rs 14.68 lakh's decapitalisation has been shown as Assumed Deletion in Form-9B(i) in 2016-17 (Sl. No. 119).		
6	Boom Barrier UP TO 6M, Godrej G6000	1.41	Old boom barrier provided had not been working properly and needed replacement as brought out in the report of CISF. For restoration of safety and security arrangement and to restrict entry in the premises, the new boom barrier was installed. Rs. 0.56 lakh i.e. gross block of old boom barrier's decapitalisation has been shown as Assumed Deletion in Form-9B(i) in 2015-16 (Sl. No. 24).		1.41
7	Monoblock Water Pump with motor 7.5 HP/5.5	0.66	The Potable water is being fed to Karian Township by	Considering the fact that the expenditure	0.00



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
	KW, on replacement basis		pumping through the bore wells at Pump House and further it is distributed through water treatment plant. New pump has been purchased for replacement of faulty pump. Rs. 0.25 lakh i.e. gross block of old pump's decapitalisation has been shown as Assumed Deletion in Form-9B(i) in 2015-16 (Sl. No. 25).	incurred is not directly related to the operation of the generating station and is in the nature of O&M expenses, the additional capital expenditure claimed is <b>not allowed</b> .	
8	40 HP Pump only SCT/80/30 Module 1 HEAD 100 metre size 80/100 MM, Model No-SCT/80/30	3.71	Existing pump installed at Pump house had worn out due to continuous use and required to be replaced for smooth functioning of water supply system. New pump has been purchased for replacement of faulty pump. Rs. 1.90 lakh i.e. gross block of old pump' de-capitalisation has been shown as Assumed Deletion in Form-9B(i) in 2015-16 (Sl. No. 26).	As these works are required for the successful and efficient operation of plant, the same are <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The de capitalization of the old asset has been considered under assumed deletion in subsequent sections.	3.71
9	Purchase of additional submersible pumps of 5 HP & 3 HP capacity for drainage of turbine pit	3.29	The high silt in the river result in erosion of underwater parts and consequently leakage from turbine increases manifold and therefore to dewater the turbine pit submersible pumps are required so that damages to other parts like TGB pads, journal & housing are avoided and draining of oil is also eliminated. Further, due to high silt, these pumps give frequent problems and with aging of plant, leakage tend to increase, necessitating additional pumps, to avoid flooding. So, additional pumps have been purchased for successful	As these works are required for the successful and efficient operation of plant, the same are <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	3.29



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			operation of the plant		
10	Providing Sewerage Treatment Plant for Powerhouse	4.51	<p>The existing sewerage treatment plant of Powerhouse for collection and disposal of sewage (working since commissioning of the powerhouse) had become non-effective and started emanating foul smell inside the power house which resulted in unhygienic conditions for the employees working inside the power house. Consequently, a site visit was made by the consultant. In the inspection report of the consultant, it was stated that the STP was of obsolete technology and the repairs of installed equipment's shall be uneconomical. The work was necessary for successful and efficient operation of the power house, hence new STP was installed. Also, a functional STP is essential for compliance of pollution control by-laws. Expenditure of Rs 8.76 Lakh in 2015-16 for supply portion (Item No. C10 of 9A_15-16) &amp; Rs 0.97 Lakh in 2016-17 for commissioning (Item No. C2 of 9A_16-17) has been incurred.</p> <p>The originally installed system was included in the turn-key package and its acquisition cost is not available. So, replacement value of this item has been calculated on the basis of CI Index of 2003-04 and 2015-16 &amp; 2016-17. Rs</p>	As the said work is required for the successful and efficient operation of plant, the same are <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The de capitalization of the old asset has been considered under assumed deletion in subsequent sections.	4.51



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			3.76 lakh's decapitalisation has been shown as Assumed Deletion in Form-9B(i) in 2015-16 (Sl. No. 27) and Rs 0.40 lakh's decapitalisation has been shown as Assumed Deletion in Form-9B(i) in 2016-17 (Sl. No. 118).		
11	Purchase of ECG Machine & foetal Doppler for Hospital	0.91	Earlier existing ECG machine was purchased in 2005. ECG machine is mandatory life saving equipment for hospitals. In case of problem of one machine/ multiple patients, arrangement of additional machine was essential. Accordingly, the same has been purchased. Further, to check up heart sound and health status of child during pregnancy, Foetal Doppler is essential. Foetal Doppler was not available earlier in the Power Station. Since the item is lifesaving equipment and essential, so the same has been purchased.	It is observed that the assets @ sl nos. 11 & 12 claimed under this head are not directly related to efficient operation of the plant. Hence, the claims are <b>not allowed</b> .	0.00
12	Purchase of Portable Oxygen Concentrator, Model-INOGEN ONE G3, Make- NIDEK	3.03	During emergencies such as cardiac arrest/ COPD, portable oxygen concentrator is needed for shifting of patient from site to project hospital or referral centre. Earlier the item was not available in project hospital. Since the item is lifesaving equipment and essential, so the same has been purchased. Similarly, To check up heart sound and health status of child during pregnancy, Foetal Doppler is essential. Foetal		0.00



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			Doppler was not available earlier in the Power Station. Since the item is lifesaving equipment and essential, so the same has been purchased.		
13	Additional Automatic Water Level Monitoring system (2 Nos.)	1.13	As per report of Dam Safety Team, 2 additional Automatic web-based water Level Recorders (one at Gauge and Discharge site, Baloo and another at suspension bridge downstream of TRT Outfall) were to be installed, so that data can be monitored in real time. Accordingly, water level recorders were installed at the identified locations for preparation of gauge discharge curve (Rating curve). Expenditure of Rs 1.84 Lakh in 2015-16 for civil works (Item No. C13 of 9A_15-16) & Rs 3.13 Lakh in 2016-17 for supply & commissioning (Item No. C19 of 9A_16-17) has been incurred.	As these works are required for the successful and efficient operation of plant, the claim is <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	1.13
14	Drilling of deep bore wells for cooling water system of Power House (2 Nos.) on replacement basis	2.31	Since commissioning, there was two borewells for supplying clean water for cooling of various guide bearings and transformer oil cooling. Due to choking/ drying of these borewells, new borewells have been drilled, on replacement basis. Expenditures of Rs 2.31 Lakh (refer Item No. C14 of Form 9A_15-16) and Rs 4.12 Lakh (refer Item No. C15 of Form 9A_16-17) have been incurred on cash basis. Rs 0.99 lakh's decapitalisation has been shown as Assumed	As these works are required for the successful and efficient operation of plant, the same are <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The de capitalization of the old asset has been considered under assumed deletion in subsequent sections.	2.31





S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			Deletion in Sl no. 28 of Form-9B(i) in 2015-16 and Rs 1.70 lakh's decapitalisation has been shown as Assumed Deletion in Form-9B(i) in 2016-17 (Sl. No. 120).		
15	Replacement of LT Distribution Panel, Incomer-MCCB-250A,415V,3 Phase.	1.43	Since commissioning, changeover switches were being used for street lights and VIP Guest House. With the passage of time the load increased and changeover switches becomes old and giving frequent tripping. In order to strengthen the system, higher rating MCCB's have been installed considering the load requirement. Replacement value of old item amounting Rs 0.61 Lakh is provided in Form-9B(i) (refer item no. 29, 2015-16)	It is observed that the asset claimed under this head are not directly related to efficient operation of the plant and accordingly, the same is <b>not allowed</b> .	0.00
16	UPS 7.5 KVA	6.65	The control supply of the various equipment installed in the butterfly valve chamber has been sourced from single UPS of 5 KVA. The failure of control supply/UPS initiates the shutdown of the machines and causes loss of generation. To provide redundancy in the power supply to the equipment, additional UPS was purchased for backup.	Considering the fact that the expenditure claimed is in the nature of minor items, the claim of the Petitioner is <b>not allowed</b> in terms of the first proviso to Regulation 14(3) of the 2014 Tariff Regulations. The corresponding decapitalization is also not allowed.	0.00
17	Runner upper rotating labyrinth forged ring (unfinished, 102X205), DWG NO.1-15111-001 (2 Nos.)	9.49	These items were capitalised along with mother plant. The items are in use for last 12 years and due to wear, these had become beyond economical repair. Hence, replacement has been done. Actual de-	As these works are required for the successful and efficient operation of plant, the claims @ sl nos. 17 & 18 are <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff	9.49
18	Runner lower rotating lower Labyrinth forged (unfinished), DWG NO.1-15115-001 (2 Nos.)	7.08			7.08



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			capitalisation has been done during 2017-18 (refer item nos. 8 & 9). However, same de-capitalisation value of Rs 7.1 Lakh has been shown in Form-9B(i) in 2015-16 (Sl. No. 30-31) as assumed deletion.	Regulations. The de capitalization of the old asset has been considered as de-capitalization.	
	<b>Sub-Total C</b>	<b>188.20</b>			<b>175.53</b>
	<b>Total amount (A+B+C)</b>	<b>308.62</b>			<b>295.94</b>

12. Based on the above, the total additional capital expenditure of Rs. 295.94 lakh is allowed in 2015-16.

### **2016-17**

(Rs. in lakh)

S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
<b>A. Items already approved by the Commission in 2015-16</b>					
<b>1</b>	Submersible Drainage Pump with panel and pipeline for Disaster Management Programme	137.03	In justification to the claim the Petitioner has submitted that these assets were already allowed by the Commission vide order dated 17.6.2016 in Petition 233/GT/2014.	It is observed that the additional capital expenditure claimed @ sl nos. 1& 2 under this head has already been allowed by the Commission vide order dated 17.6.2016 in Petition 233/ GT/ 2014 under Regulation 14(3)(viii) of the 2014 Tariff Regulations. In view of this, the additional capital expenditure is allowed.	137.03
<b>2</b>	Multipurpose Fire Tender	36.60	The Petitioner in justification to its claim has submitted that Commission has allowed amount Rs. 34 lakhs for purchase of fire tender, the price was based on estimation basis. Present price is discovered through tendering process.		36.60
	<b>Sub-Total A</b>	<b>173.63</b>			<b>173.63</b>
<b>B. Allowed by CERC in different years, but capitalised in 2016-17</b>					
<b>1</b>	Construction of Store building at Powerhouse (Electrical works)	1.49	Commission has allowed Rs 36.49 Lakh in 2014-15. Expenditure of Rs 36.49 Lakh in 2014-15 for civil works (Refer Item#A4 of Form 9A_14-15) & Rs 1.49 Lakh in 2016-17 for	It is observed that the additional capital expenditure for the assets @ sl nos. 1 to 3 under this head had been allowed vide Commission's vide	1.49



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			electrification completed in FY 2016-17 (Refer Item#B1 of Form 9A_16-17) has been incurred.	order dated 17.6.2016 in Petition 233/ GT/ 2014 under Regulation 14(3)(viii) of the 2014 Tariff Regulations. In view of this, the additional capital expenditure is allowed.	
2	Purchase of DG set 500 KVA - 2 No. Along with AMF panel (Installation-charges)	0.16	Allowed by Commission in 2015-16, for new asset costing Rs 89.44 Lakh against replacement of old asset of of Rs 1.67 Lakh. Purchase cost amounting to Rs 83.21 Lakh (refer Item No. A3 of 9A (15-16)) has been capitalised in 2015-16 and Installation charges amounting to Rs 2.41 Lakh has been capitalised during 2016-17 (refer Item No. B2 of 9A(16-17)). Rs. 1.67 lacs i.e. gross block of old 1000kVA DG Set's decapitalisation has been shown as Assumed Deletion in Form-9B(i) in 2015-16 (Sl. No. 21).		0.16
3	Installation charges of 380 KVA D.G. Set	0.10	Allowed by Commission in 2015-16, for new asset costing Rs 38.12 Lakh against replacement of old asset of of Rs 5.20 Lakh. Purchase cost amounting to Rs 35.24 Lakh (refer Item No. A4 of 9A(15-16)) has been capitalised in 2015-16 and Installation charges amounting to Rs 1.02 Lakh has been capitalised during 2016-17 (refer Item No. B3 of 9A(16-17)). Rs. 5.2 lacs i.e. gross block of old 400kVA DG Set's decapitalisation has been shown as Assumed Deletion in Form-9B(i) in 2015-16 (Sl. No. 22)		0.10
4	Two nos. Gasoline Engine operated power pack each type each for radial Gate-	16.39	Allowed by Commission in 2015-16 for purchase of new assets costing Rs 17.0 Lakh against	It is observed that the additional capital expenditure for the assets @ sl nos. 4 to	16.39



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
	I&II power pack and Radial Gate III&IV power pack.		replacement of old asset of gross block of Rs 0.9 Lakh. Due to delay in tendering process, item was purchased during 2016-17 (refer Item No. B4 of 9A(16-17)) with purchase value of Rs. 16.39 lakh. Assumed deletion of old asset has been shown in 2016-17 in Form-9B(i) at Sl. No. 117)	5 under this head had been allowed vide Commission's vide order dated 17.6.2016 in Petition 233/ GT/ 2014 under Regulation 14(3)(viii) of the 2014 Tariff Regulations. In view of this, the additional capital expenditure is allowed. The corresponding de-capitalization of old assets has been considered under assumed deletion in subsequent paragraphs.	
5	Replacement of drainage pump with submersible pump	27.74	Commission has allowed replacement of VT pumps amounting to Rs. 49.00 lakh in FY:2015-16 against replacement old pumps of Rs. 2.56 lakh. But due the urgency of work/ site requirements, pumps have been purchased in phased manner from 2014-15. Expenditure during 2014-15, 2015-16 & 2016-17 amounting Rs23.34 Lakh (Item#B1 of Form 9A_14-15), Rs23.36 Lakh (Item#A9 of Form 9A_15-16) & Rs27.74 Lakh (Item#B5 of Form 9A_16-17) respectively has been incurred. Approval of COMMISSION for this supply/ work was taken for an amount of Rs 49.00 Lakh on estimation basis, while actual total expenditure of Rs74.44 lakh is as per market prices discovered after tendering. Rs. 2.56 lacs i.e., gross block of old pumps' decapitalisation has been shown as Assumed Deletion in Form-9B(i) in 2014-15 (Sl. No. 51).		27.74
	<b>Sub-Total B</b>	<b>45.88</b>			<b>45.88</b>
	<b>New Items</b>				
1	Construction of Boat	2.75	The Petitioner has		0.00



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
	Stand		submitted that Commission has allowed boat purchase in 2014-15 (Refer Item# A5 of Form-9A_14-15). Earlier there was Kuchcha approach path to the anchor point of boat, which often got slippery and muddy, resulting in high risk for the persons handling the boat. Concrete path and proper anchor point was essential for safety of the persons maintaining and operating the boat. Accordingly, boat-stand has been made for safety & proper operation of the boat.		
2	Sewage treatment plant	0.97	The existing sewerage treatment plant of Powerhouse for collection and disposal of sewage (working since commissioning of the powerhouse) had become non-effective and started emanating foul smell inside the power house which resulted in unhygienic conditions for the employees working inside the power house. Consequently, a site visit was made by the consultant. In the inspection report of the consultant, it was stated that the STP was of obsolete technology and the repairs of installed equipment's shall be uneconomical. The work was necessary for successful and efficient operation of the powerhouse, hence new STP was installed. Also, a functional STP is essential	As these works @ sl nos. 2 & 3 are required for the successful and efficient operation of plant, the claims are <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding de-capitalization of the old asset has been considered under assumed deletion in subsequent paragraphs.	0.97



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			<p>for compliance of pollution control by-laws. Expenditure of Rs8.76 Lakh in 2015-16 for supply portion (Item No. C10 of 9A_15-16) &amp; Rs0.97 Lakh in 2016-17 for commissioning (Item No. C2 of 9A_16-17) has been incurred.</p> <p>The originally installed system was included in the turn-key package and its acquisition cost is not available. So, replacement value of this item has been calculated on the basis of CI Index of 2003-04 and 2015-16 &amp; 2016-17. Rs 3.76 lakh's decapitalisation has been shown as Assumed Deletion in Form-9B(i) in 2015-16 (Sl. No. 27) and Rs 0.40 lakh's decapitalisation has been shown as Assumed Deletion in Form-9B(i) in 2016-17 (Sl. No. 118).</p>		
3	Micro Scada server items (server pc 3 nos, client pc- 3 nos, modem - 3 nos & software)	26.81	<p>Chamera-II is SCADA based automatic power station. Operation of the generating units is done only through the SCADA. The plant was commissioned in 2003-2004 and the existing installed SCADA system was based upon 15 years old technology which became obsolete. Also, proper support for the same was not available from the OEM. Problems like frequent hanging of servers and software related problems, were affecting the operation of generating units and the performance of the Power</p>		26.81



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			<p>Station. Up gradation was needed to cope with the obsolescence and adopting new technology so that interruption in the plant operation and electricity generation could be avoided. Expenditure of Rs109.84 Lakh in 2015-16 (Item No. C5 of 9A_15-16) &amp; Rs35.55 Lakh in 2016-17 (Item No. C3 of 9A_16-17) has been incurred, for the required upgradation work.</p> <p>The originally installed system was included in the total E&amp;M package and its acquisition cost is not available. So, replacement value of this item has been calculated on the basis of CI Index of 2003-04 and 2015-16 &amp; 2016-17. Rs. 47.14 lakh's decapitalisation has been shown as Assumed Deletion in Form-9B(i) in 2015-16 (Sl. No. 23). Rs 14.68 lakh's decapitalisation has been shown as Assumed Deletion in Form-9B(i) in 2016-17 (Sl. No. 119).</p>		
4	Installation of Remote Data Acquisition System (including software and supporting hardware) for Powerhouse & other civil structures' stability monitoring in real time	17.80	Remote Data Acquisition System is installed for monitoring stability of critical civil structures like Dam Power House and adits. Earlier the stability was monitored through manual reading. The locations from where the reading is to be taken were not easily accessible and hence the readings were taken on weekly basis. For accessing data on real time basis and better accuracy, automatic	As these works are required for the successful and efficient operation of plant, the claims @ sl nos 4 to 6 are <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	17.80





S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			data acquisition system was installed, for efficient operation and safety of critical civil structures of the plant.		
5	Purchase of 48V battery bank along with Charger	0.26	An External Enquiry Committee was constituted for basic protection audit in view of grid failure on 30.7.2012 and 31.7.2012. The committee made recommendation that a 48 V DC battery bank may be installed for PLCC communication. Expenditure of Rs10.38 Lakh in 2015-16 for supply portion as per Item No. C4 of 9A_15-16 & Rs0.26 Lakh in 2016-17 as per Item No. C5 of 9A_16-17 for commissioning has been incurred.		0.26
6	Construction of Bachelor Accommodation for CISF Sub-Officers	2.61	As per Guidelines for "Provision and planning of hostels, CISF accommodation and other amenity buildings in township of public sector enterprises,"(copy attached) dated 06July1978, accommodation is to be provided to CISF. The posted strength of Sub-Officers of CISF at CPS-II is 18 Nos. No separate bachelor hostel was provided to Sub-Officers, and they were accommodated along with other ranks, which was not as per the discipline and decorum of the force. As per the guidelines/norms of the force, sub-officers have to be provided separate bachelor accommodation as		2.61



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			requested by DC in letter dated 16/08/13. Hence, a separate field hostel for bachelor accommodation for CISF officials was constructed. Expenditure of Rs33.33 Lakh in 2015-16 for civil works (Item No. C2 of 9A_15-16) & Rs2.61 Lakh in 2016-17 for electrification (Item No. C6 of 9A_16-17) has been incurred.		
7	High mast lighting system	6.72	The existing illumination outside area of power house where GIS, pot headyard, security post, stores etc are located was not sufficient at certain locations such as river side views, PH-front yard area etc., from safety & security point of view. CISF, which has been deployed for safety & security of the persons as well as Power station had also highlighted the issue of illumination in their report (OCT-2014) considering the security of the Power House, installation of High Mast lighting system has been done. Report of CISF attached. Expenditures of Rs 11.70 Lakh in 2016-17 and Rs 1.44 Lakh in 2017-18 (refer Item No. 12 of Form 9A_17-18) have been incurred for the work.	As this work is required for the successful and efficient operation of the plant, the claim is <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	6.72
8	Purchase of submersible Pump for Dam	1.45	Due to high silt and aging, existing pumps need frequent repair. So, an additional pump for dam site area, as per site requirement, has been purchased.	As the said work is required for the successful and efficient operation of plant, the claim is <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff	1.45



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
				Regulations	
9	Construction of portico & protection work at the entrance of Dam control room	17.90	The hill slope at the entry of Dam control room is of fractured rock mass and therefore often loose rock falls from the slopes. Therefore, steel grill portico was essential for ensuring safety of the staff and dam control equipment's from the rock falls.	Considering the fact that the expenditure claimed is in the nature of O&M expenses, the claim is <b>not allowed</b> .	0.00
10	Template for runner and guide vanes	21.96	Refurbishment/ repair of runner and guide vanes to original profile and dimensions to the extent possible is essential to avoid any major breakdown of units. Presently templates of runner and guide vane are not available and for maintaining the exact profile, thickness etc. templates are needed. With help of templates, we can check runner and guide vanes before and after repair. This helps in extending life of critical underwater parts runner and guide vanes. Further, maintaining profile of these underwater parts, helps in maintaining efficiency of the machines.	As the said work is required for the successful and efficient operation of plant, the claim is <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	21.96
11	Purchase of additional sirens and their power back-up arrangements	15.51	As per instructions of District Administration (Letter dated 21/12/2013 & 01/04/2016), additional sirens and their back up arrangements for various locations along Ravi River have been purchased in phased manner, to alert local public, about release of water from dam/ powerhouse. Total expenditure incurred for the same in 2014-15,	As the said work is required for the successful and efficient operation of plant, the claim is <b>allowed</b> under Regulation 14(3)(iii) of the 2014 Tariff Regulations.	15.51



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			2015-16, 2016-17, 2017-18 & 2018-19 has been Rs 2.38 Lakh (Item No. C4 of 9A_14-15), Rs 0.78 Lakh (Item No. C3 of 9A_15-16), Rs 15.51 Lakh (Item No. 11 of 9A_16-17), Rs 4.63 Lakh (Item No. 9 of 9A_17-18) & Rs 1.5 Lakh (Item No. 12 of 9A_18-19) respectively.		
12	Purchase of 4 Nos. Additional submersible pump for collecting water sample for silt analysis at Dam.	1.30	During pre-monsoon Dam safety visit, the team suggested to install pump at intake, radial gate, SFT outfall for collecting water sample for silt analysis at Dam.	As these said works @ sl nos. 12 & 13 are required for the successful and efficient operation of plant, the claims are <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	1.30
13	Cast Iron Ballast Brick for Spillway stoplogs	77.23	During various periodic inspections of dam, it was repeatedly brought out by Dam Safety Team (copy of the report enclosed) that cast iron ballasts for the stoplogs of the gates of the dam are not available and therefore, placement of stoplog gates would be very difficult in case of flowing condition due to heavy leakage or failure of radial gates. Accordingly, as per advise of Dam Safety Team, ballasts have been purchased and installed to ensure readiness in case of eventuality of emergent placement of stoplogs in spilway gates.		77.23
14	Purchase of fire Pump	6.39	Two fire-pumps are installed in Power-house, for pumping water from Draft-tubes to fire-fighting water tanks. These pumps are critical for fire-safety purpose. However, due to aging, pumps were giving frequent problems and need of an additional	As the said work is required for the successful and efficient operation of plant, the claim is <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	6.39



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			pump was felt, to keep fire safety system healthy. Accordingly, one additional fire pump has been purchased/ installed.		
15	Drilling of deep bore well for cooling water system of Powerhouse (2 Nos.)	4.12	Since commissioning, there were two borewells for supplying clean water for cooling of various guide bearings and transformer oil cooling. Due to choking/drying of these borewells, new borewells have been drilled, on replacement basis. Expenditures of Rs 2.31 Lakh (refer Item No. C14 of Form 9A_15-16) and Rs 4.12 Lakh (refer Item No. C15 of Form 9A_16-17) have been incurred on cash basis. Rs 0.99 lakh's decapitalisation has been shown as Assumed Deletion in Form-9B(i) in 2015-16 (Sl. No. 28) and Rs 1.70 lakh's decapitalisation has been shown as Assumed Deletion in Form-9B(i) in 2016-17 (Sl. No. 120).	As the said work is required for the successful and efficient operation of plant, the claim is <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding de-capitalization of the asset has been considered under assumed deletion.	4.12
16	Construction of LMG Morcha at Powerhouse	4.34	As per meeting held with IB officials & CISF, it was directed to construct LMG morchas for CISF (1 No. at Powerhouse and 1 No. at Dam site) for security reasons. Accordingly, the same have been constructed (CISF Letter attached)	As the said works are required for the successful and efficient operation of plant, the claims & sl nos. 16 & 17 are <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	4.34
17	Construction of Security Post at Powerhouse	1.11	During the landslides above Main Access Tunnel (MAT) Portal at Power-house in the month of March 2015, the CISF Security Post near the MAT Portal got completely damaged. Consequently, it		1.11



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			was advised by CISF officials to construct new Security Post at a safer location, to prevent any such damages in future. Accordingly, for safety/ security reasons, a new security post has been constructed near Power House.		
18	Supply, installation & calibration of Rexroth make CIMS (Cylinder Integrated Measurement System) position indicating system of radial gates, flap Gate at dam	42.63	CIMS (Cylinder Integrated Measurement System) based Gate position indicators were installed in the radial gates, flap gate and Silt flushing tunnel gates at the time of commissioning in the year 2003. These sensors are essentially required for smooth remote monitoring / operation of these gates and ARMAC system at dam control room. These Gate position indicating system is critical in gate operation particularly in monsoon season when discharge becomes very high. The existing CIMS position indicating system (installed in the year 2003) has been phased out and its spares are not available from OEM. Keeping in view of criticality of the system, the faulty sensors were replaced with new one. CIMS based Gate position indicating system was replaced for Radial gate no. 1, 2, 4 and Flap gate in the year 2016-17. Expenditures of Rs 48.29 Lakh (refer Item No. C18 of Form 9A_16-17) and Rs 2.35 Lakh (refer Item No. C10 of Form 9A_17-18) have been incurred on replacement.	As the said work is required for the successful and efficient operation of plant, the claim is <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding de-capitalization of the asset has been considered under assumed deletion.	42.63



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			Rs. 20.91 Lakh i.e. gross block of old asset decapitalisation has been shown as Assumed Deletion in Form-9B(i) in 2016-17 (Sl. No. 121).		
19	Automatic water level monitoring system (2 nos.)	3.13	As per report of Dam Safety Team, 2 additional Automatic web-based water Level Recorders (one at Gauge and Discharge site, Baloo and another at suspension bridge downstream of TRT Outfall) were to be installed, so that data can be monitored in real time. Accordingly, water level recorders were installed at the identified locations for preparation of gauge discharge curve (Rating curve). Expenditure of Rs1.84 Lakh in 2015-16 for civil works (Item No. C13 of 9A_15-16) & Rs 3.13 Lakh in 2016-17 for supply & commissioning (Item No. C19 of 9A_16-17) has been incurred.	As the said works are required for the successful and efficient operation of plant, the claims @ sl nos. 19 & 20 are <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	3.13
20	Installation of CCTV systems at various locations of the Power Station	12.40	Intelligence Bureau vide Letter No. 20/IS/2014(37)-HP dated 27.07.2015 followed by CISF Letter Dated 29.04.2016 had recommended for installation of CCTV systems at various locations of the Power Station, for strengthening the safety & security aspects. Accordingly, these systems have been installed.		12.40
21	Biomatrix attendance system	2.46	As per Govt/ Corporate Office Guidelines, Bio-matrix Attendance System has been installed in the plant, for smooth capturing of attendance.	Considering the fact that the expenditure claimed is in the nature of minor items, the additional capital expenditure claimed	0.00





S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			Expenditure of Rs5.23 Lakh in 2016-17 & Rs0.98 Lakh in 2017-18 for commissioning (Item No. 11 of 9A_17-18) has been incurred.	is <b>not allowed</b> in terms of the first proviso to Regulation 14(3) of the 2014 Tariff Regulations. The corresponding decapitalization is also <b>not allowed</b> .	
22	Head cover fixed labyrinth as per drg. No- 1-13203-001 item no-2	9.31	These items were capitalised along with mother plant. These items are in use for last 13 year and due to wear they are beyond economical repair. Hence replacement of these item has been done. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 4-11 of 2016-17)	As these works & sl nos. 22 to 29 are required for the successful and efficient operation of plant, the claims are <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding deletion of old assets has been considered under de-capitalization.	9.31
23	Bottom ring upper labyrinth drg no1-13103-003	9.45			9.45
24	Runner upper rotating labyrinth forged ring (unfinished, 102x205), dwg no.1-15111-001	22.15			22.15
25	Runner lower rotating lower labyrinth forged (unfinished), dwg no.1-15115-001	10.11			10.11
26	Headcover wearing plate drg no1-13205-001	19.13			19.13
27	Head cover lower labyrinth drg no1-13203-002	20.34			20.34
28	Bottom ring wearing plate drg no 1-13105-001	17.93			17.93
29	Bottom ring lower labyrinth drg no 1-13103-002	15.52			15.52
30	Firefighting pipe line od 168 mm, thick 6.3mm, max w.p. 12 bar compl. With coating, valves, bends etc	13.74	After continuous use for over 13 years in moist conditions the originally installed pipeline has become prone to damage at several locations. Healthiness of firefighting pipes and systems are very essential for safety of costly generators, transformers, excitation system, control system etc. Complete replacement in phased	As the said work is required for the successful and efficient operation of plant, the claim is <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding deletion of old assets has been considered under de-capitalization.	13.74



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			manner with coated pipeline is envisaged to ensure reliable and trouble-free operation. Accordingly, expenditure of Rs. 13.74 lakh in 2016-17 & Rs15.25 lakh in 2017-18 has incurred in phased manner. Balance work shall be carried out in 2019-24. Replacement values of old item indicated in Form-9B(i) (refer item no 12 of 2016-17 & refer item no 3 of 2017-18).		
31	Numerical transformer protection relay type ret670 along with retrofitting materials (2 units)	7.25	The existing relays in generator panel (REG316 & REM543) and in GT panel (RET 521) were purchased along with mother plant. Sometime these relays malfunction and create frequent trouble. Moreover, these relays are of old version and not compatible with IEC61850 universal protocol. Being old version relays, the support from OEM is also not available. Hence, new relays have been purchased against replacement of old relays for unit No. 3. The new generation (REG670 and RET 670) relays are required for Generator and Generator transformer protections respectively. Decapitalisation value of old item are provided in Form-9B(i) (refer item no. 13) in FY 2016-17	As the said work is required for the successful and efficient operation of plant, the claim is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding deletion of old assets has been considered under de-capitalization.	7.25
32	S.S sleeve for turbine shaft seal drawing no-1-15202-001	4.46	These items were capitalised along with mother plant. The items are in use for last 12 years and due to wear, these had become beyond	As the said work is required for the successful and efficient operation of plant, the claim is <b>allowed</b> under	4.46



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			economical repair. Hence, replacement has been done for unit no. 3. Actual de-capitalisation has been done during 2017-18 (refer item no. 11). However, same de-capitalisation value has been shown in Form-9B(i) in 2016-17 (Sl. No. 122) as assumed deletion.	Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding deletion of old assets has been considered under assumed deletion.	
33	Bottom ring lower labyrinth drg no 1-13103-002 (2 no.)	15.52	These items were capitalised along with mother plant. The items are in use for last 12 years and due to wear, these had become beyond economical repair. Hence, replacement has been done. Actual de-capitalisation has been done during 2017-18 (refer item no 12). However, same de-capitalisation value has been shown in Form-9B(i) in 2016-17 (Sl. No. 124) as assumed deletion.	As the said works @ sl nos. 33 to 35 are required for the successful and efficient operation of plant, the claims are <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding deletion of old assets has been considered under assumed deletion.	15.52
34	Bottom ring upper labyrinth drg no1-13103-003 (2 no.)	9.49	These items were capitalised along with mother plant. The items are in use for last 12 years and due to wear, these had become beyond economical repair. Hence, replacement has been done. Actual de-capitalisation has been done during 2017-18 (refer item no. 10). However, same de-capitalisation value has been shown in Form-9B(i) in 2016-17 (Sl. Nos. 123) as assumed deletion.		9.49
35	Excitation transformer management relay	6.56	Old relay installed in mother plant since 2003-04 had become obsolete, so its replacement has been done. Actual de-		6.56



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			capitalisation has been done during 2018-19 (refer item no. 5). However, same de-capitalisation value of Rs 2.71 Lakh has been shown in Form-9B(i) in 2016-17 (Sl. No. 125) as assumed deletion.		
	<b>Sub-Total C</b>	<b>450.83</b>			<b>427.72</b>
	<b>Total amount (A+B+C)</b>	<b>670.34</b>			<b>647.23</b>

13. Based on the above, the total additional capital expenditure of Rs. 647.23 lakh is allowed in 2016-17.

### **2017-18**

(Rs. in lakh)

S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
<b>A. Additional items which were not claimed earlier</b>					
1	Replacement of relay for Unit Protection panel (01 no REG670 and 01 No RET 670) (4775200009-10)	17.84	The existing relays in generator panel (REG316 & REM543) and in GT panel (RET 521) were purchased along with mother plant. Sometime these relays malfunction and create frequent trouble. Moreover, these relays are of old version and not compatible with IEC61850 universal protocol. Being old version relays, the support from OEM is also not available. Hence, new relays have been purchased against replacement of old relays for unit#1 (main), Unt#2(main) and Unit#3(main). The new generation (REG670 and RET 670) relays are required for Generator and Generator transformer protections respectively. The purchase of new	As the said work is required for the successful and efficient operation of plant, the claim is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding deletion of old assets has been considered under de-capitalization.	17.84



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			relays has been done in 2017-18 & the installation cost of Rs 343450/- of these relays has been capitalised during 2018-19 (refer item no. 7). Decapitalisation of gross value of old relays against actual deletion amounting Rs 7.74 Lakh has been shown in Form-9B(i) (refer item nos. 4 & 5 of 2017-18).		
2	Replacement of Raw water-cooling pump (2004040090)	45.94	Raw cooling water pumps and clean cooling water pumps are used for circulating water from draft tube for cooling of bearings, transformer and generators. As power station has already completed more than 14 yrs of operation and the frequency of breakdown of these pumps is also in the increasing trend. In order to meet any emergency situation and for continuous operation of generating units, 01 no raw cooling pump has been purchased on replacement basis in 2017-18 to avoid outage and continuity of generation. Assumed deletion amounting Rs 18.41 Lakh of gross value of old pump has been shown in Form-9B(i) (refer item no 54 of 2017-18).	As the said work is required for the successful and efficient operation of plant, the claim is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding deletion of old assets has been considered under assumed deletion.	45.94
3	Replacement of existing firefighting pipelines & accessories (Shifted from BE 16-17) (3501020002)	13.28	After continuous use for over 13 years in moist conditions the originally installed pipeline has become prone to damage at several locations. Healthiness of firefighting pipes and systems are	As the said work is required for the successful and efficient operation of plant, the claim is allowed under Regulation 14(3)(viii) of the 2014 Tariff	13.28



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			very essential for safety of costly generators, transformers, excitation system, control system etc. Complete replacement in phased manner with coated pipeline is envisaged to ensure reliable and trouble-free operation. Accordingly, expenditure of Rs. 13.74 lakh in 2016-17 & Rs15.25 lakh in 2017-18 has incurred in phased manner. Balance work shall be carried out in 2019-24. Replacement value against expenditure of Rs 15.25 Lakh in 2017-18 has been indicated in Form-9B(i) (refer item no 3 of of 2017-18, actual deletion amounting Rs 6.11 Lakh)	Regulations. The corresponding deletion of old assets has been considered under de-capitalization.	
4	Purchase of additional borewell pumps for Power House	2.43	There are two borewells in Powerhouse Complex for supplying clean water for cooling of various guide bearings and transformer oil cooling, with one spare pump. During operation of pumps, frequent problems have been observed due to high silt content in water. The system is critical for the power-plant and so additional pumps have been purchased for strengthening the system.	It is observed that the asset under this head is of spare in nature. Since no spares are allowed as additional capital expenditure after cut-off date hence, the additional capital expenditure is <b>not allowed</b> .	0.00
5	Purchase of Pump motor set for HVAC system	0.6	Five water pumps are installed for Power House HVAC (Heating, Ventilation and Air Conditioning) System. Out of these, one pump -motor set had become unserviceable, during use of more than 13 years. Accordingly, one new pump motor set has been	As the said work is required for the successful and efficient operation of plant, the claim is <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding deletion of old assets	0.60



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			purchased on replacement basis. Assumed deletion amounting Rs 0.24 lakh of gross value of old pump has been shown in Form-9B(i) (refer item no 55 of 2017-18).	has been considered under assumed deletion.	
6	Supply of automatic plumblin XY co-ordinator, data logger including back panel PC.	34.35	Earlier, to monitor information about dam stability through Pendulum readout system, readings were taken manually. Dam Safety Review Panel headed by Ex-Chairman CWC advised to review the functioning of instruments installed at Dam. Accordingly, in order to improve the data accuracy of readings by obviating manual interface, the automatic pendulum readout systems (XY Coordinator) were installed at Normal & Inverted Plumblin of Dam Gallery.	As the said work is required for the successful and efficient operation of plant, the claim is <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	34.35
7	WiFi System, Switches & Firewall (Networking Devices & Server) 63096020002,10-14,16,6309600032-33,6309190021-32,6301010012)	8.05	Control based WiFi System for Power House, VIP GH, Hospital, DAM, Admin. Building, SCADA Hall, Field Hostel etc was installed, to take advantage of new technology, for efficient working.	Considering the fact that the expenditure claimed is in the nature of minor items, the additional capital expenditure claimed is <b>not allowed</b> in terms of the first proviso to Regulation 14(3) of the 2014 Tariff Regulations.	0.00
8	Boom Barrier at Dam, Door Frame Metal Detector, Fire Extinguishers & Other safety equipment's.	4.32	Old boom barrier and DFMD provided had not been working properly and needed replacement as brought out in Minutes of Meeting with State Intelligence Bureau Team. For restoration of safety and security arrangement and to restrict entry in the premises, the new boom	As the said work is required for the successful and efficient operation of plant, the claim is <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding deletion of old assets	4.32





S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			barrier and DFMD have been installed. Assumed deletion of Rs 0.60 Lakh of old boom barrier have been shown in Form-9B(i) in 2017-18 at Sl. No. 56.	has been considered under assumed deletion.	
9	Purchase of additional sirens and their power back-up arrangements	4.63	As per instructions of District Administration (Letter dated 21/12/2013 & 01/04/2016), additional sirens and their back up arrangements for various locations along Ravi River have been purchased in phased manner, to alert local public, about release of water from dam/ powerhouse. Total expenditure incurred for the same in 2014-15, 2015-16, 2016-17, 2017-18 & 2018-19 has been Rs 2.38 Lakh (Item No. C4 of 9A_14-15), Rs 0.78 Lakh (Item No. C3 of 9A_15-16), Rs 15.51 Lakh (Item No. 11 of 9A_16-17), Rs 4.63 Lakh (Item No. 9 of 9A_17-18) & Rs 1.5 Lakh (Item No. 12 of 9A_18-19) respectively.	As the said works is required for the successful and efficient operation of plant, the claim is <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	4.63
10	Supply and installation & calibration of Rexroth make CIMS position indicating system of radial gates, Flap Gate at dam	2.35	CIMS (Cylinder Integrated Measurement System) based Gate position indicators are installed in the radial gates and Silt flushing tunnel gates, for remote monitoring/ operation of these gates. The Gate position indicating system is critical in gate operation particularly in monsoon season when discharge becomes very high. The sensors system became non-functional during use of more than 10 years since commissioning and needed to be replaced as	As the said work is required for the successful and efficient operation of plant, the claim is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding deletion of old assets has been considered under assumed deletion.	2.35





S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			per recommendations of Dam Safety Team/ Technical Inspection Team. Accordingly, new CIMS were installed at radial gates of the dam. Expenditures of Rs 48.29 Lakh (refer Item No. C18 of Form 9A_16-17) and Rs 2.35 Lakh (refer Item No. C10 of Form 9A_17-18) have been incurred on replacement. Rs. 20.91 Lakh i.e. gross block of old asset decapitalisation has been shown as Assumed Deletion in Form-9B(i) in 2016-17 (Sl. No. 121).		
11	Fingerprint reader with smart card reader facility, in-built display, annex secure / as-biomi-7011	0.98	As per Govt/ Corporate Office Guidelines, Bio-matrix Attendance System has been installed in the plant, for smooth capturing of attendance. Expenditure of Rs 5.23 Lakh in 2016-17 (Item No. C21 of 9A_16-17) & Rs 0.98 Lakh in 2017-18 for commissioning has been incurred.	Considering the fact that the expenditure claimed is in the nature of minor items, the additional capital expenditure claimed is not allowed in terms of the first proviso to Regulation 14(3) of the 2014 Tariff Regulations.	0.00
12	High Mast Lighting, Length 16 meter (2 No.)	1.44	The existing illumination outside area of power house where GIS, pot headyard, security post, stores etc are located was not sufficient at certain locations such as river side views, PH-front yard area etc., from safety & security point of view . CISF, which has been deployed for safety & security of the persons as well as Power station had also highlighted the issue of illumination in their report (OCT-2014) considering the security of the Power House,	As the said work is required for the successful and efficient operation of plant, the claim is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	1.44



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			installation of High Mast lighting system has been done. Report of CISF attached. Expenditures of Rs 11.70 Lakh in 2016-17 (refer Item No. C7 of Form 9A_16-17) and Rs 1.44 Lakh in 2017-18 have been incurred for the work.		
13	S.S. Sleeve for Turbine Shaft Seal Drawing No-1-15202-001 (2 No.)	2.00	These items were capitalised along with mother plant. The items are in use for last 13 years and due to wear, these had become beyond economical repair. Hence, replacement has been done for unit#1. Actual de-capitalisation of old sleeve done during 2017-18 (refer item no. 6 of Form-9B(i)) has been claimed.	As the said work is required for the successful and efficient operation of plant, the claim is <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding deletion of old assets has been considered under de-capitalization has been considered in subsequent paragraphs.	2.00
	<b>Total amount (A+B+C)</b>	<b>138.21</b>			<b>126.75</b>

14. Based on the above, the total additional capital expenditure of Rs. 126.75 lakh is allowed in 2017-18.

### **2018-19**

(Rs. in lakh)					
S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
<b>A. Additional items which were not claimed earlier</b>					
1	Providing CGI Shed Roof over Assembly and basketball ground areas at Kendriya Vidyalaya, CPS-2, Karian (Pkg.C-682)	10.24	In Kendriya Vidyalaya existing in project town ship, during the assembly and other activity time, direct sunlight & rains falling on the open area used to create problems for the children standing	It is observed that the additional capital expenditure claimed by the Petitioner is not directly related to the efficient operation of the plant. Accordingly, the	0.00



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			there. Therefore, it was necessary to cover to the assembly by providing roof there.	additional capital expenditure claimed is <b>not allowed</b> .	
2	Construction of LMG Morcha at Main Barrier and Security Room near Old Gate at Karian TS (PkgC-700)	4.59	Deputy Inspector General/NZ-1CISF on one of his visits to Power Station, has pointed out regarding construction of concrete morcha near old gate & LMG morcha at main barrier of the Karian colony for the security and safety of residential complex CPS-II.	As the said works @ sl nos. 2 & 3 are required for the successful and efficient operation of plant, the claims are <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	4.59
3	Laying of Water Pipe Line from Jarangala Nallah to Fire Fighting Tank at Power House, CPS-2(Pkgc-667)	8.60	There are 2 electrically operated firefighting pumps in CPS-II. It was noted during review of safety aspects, that electricity outage may occur in case of fire incidents. In such cases, alternate source of water for fire-fighting is essential. Accordingly, an alternative arrangement, by tapping clean water of around 300 LPM from a natural source (Jarangla Nallah), has been made. This water comes by gravity, through pipe-lines to fire-fighting-tank and would be helpful in emergency situation.		8.60
4	Water Level sensor (Radar level Transmitter)- 3 Nos.	25.16	Radar Type Water Level sensors are originally installed at dam site at reservoir and intake gates for monitoring the water level. These are integral parts of Remote-Control System of Dam and Power House for smooth operation of power station. Some of the sensors had become faulty and same were essentially required to be replaced with new one for proper operation of	As the said work is required for the successful and efficient operation of plant, the claim is <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The deletion of the old asset has been considered under de-capitalization.	25.16



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			dam. Deletion of old items in 2018-19 in Form- 9B (i) has been claimed at Sl. No. 1.		
5	Laying of Additional Water Pipe Line from TRT/NH Junction to Water Treatment Plant, Karian CPS2(PkgC-663)	6.37	The existing old pipe line (more than 20 years old) was experiencing frequent problems and the repair of the existing pipeline is very difficult as it is passing through market area of Karian. Hence, a new additional alternative pipeline (which bypasses the market area) was essential for uninterrupted services to NHPC Establishment. So, the same has been installed.	It is observed that the additional capital expenditure claimed by the Petitioner is not directly related to the efficient operation of the plant. Accordingly, the additional capital expenditure claimed is <b>not allowed</b> .	0.00
6	Mechanical Gate Position Indicators For Spillway Radial Gates (4 NOS.)	9.30	Gate Position Indicators are very vital for operation of Dam. Earlier, there were only electronic gate position indicators, available at Dam. However, frequent problems in these electronic gate position indicators were observed. Accordingly, installation of additional mechanical gate position indicators was recommended by Dam Safety Team, for smooth/reliable operation of dam gates. So, the same have been installed.	As the said work is required for the successful and efficient operation of plant, the claim is <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	9.30
7	Installation of Numerical Generator Protection Relay, ABB REG 670	3.43	The existing relays in generator panel (REG316 & REM543) and in GT panel (RET 521) were purchased along with mother plant. Sometime these relays malfunction and create frequent trouble. Moreover, these relays are of old version and not compatible with IEC61850 universal	As the said work is required for the successful and efficient operation of plant, the claim is <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	3.43



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			protocol. Being old version relays, the support from OEM is also not available. Hence, new relays have been purchased against replacement of old relays. The new generation (REG670 and RET 670) relays are required for Generator and Generator transformer protections respectively for unit #3 (main1). The purchase of new relays has been done in 2017-18 & the installation cost of Rs. 343450/- of these relays has been capitalised during 2018-19 (refer item no. 7). Decapitalisation of gross value of old relays against actual deletion amounting Rs 7.74 Lakh has been shown in Form-9B(i) (refer item nos. 4 & 5 of 2017-18).		
8	Replacement of Clean Water Pump, KSB, Model-RDLV 150-340 A	37.31	Raw cooling water pumps and clean cooling water pumps are used for circulating water from draft tube for cooling of bearings, transformer and generator. As power station has already completed more than 14 yrs of operation and the frequency of breakdown of these pumps is also in the increasing trend. In order to meet any emergency situation and for continuous operation of generating units, 01 no clean cooling water pump has been purchased on replacement basis in 2018-19 to avoid outage and continuity of generation.	As the said work is required for the successful and efficient operation of plant, the claim is <b>allowed</b> under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The corresponding deletion of old assets has been considered under assumed deletion.	37.31



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			Assumed deletion amounting Rs 14.52 Lakh of gross value of old pump has been shown in Form-9B(i) (refer Sl. No. 212 of 2018-19).		
9	Pumps for Water Supply System (40 HP Monoblock- 2 NOS. & 5 HP Submersible- 2 NOS.) on replacement basis	3.91	Water supply system for Karian Township consists of lifting of raw water from borewell to Water Treatment Plant. Old Monoblock & submersible pumps (more than 15 years old) had already reached their useful life and used to get choked regularly even after constant repair. So, new pumps have been purchased on replacement basis. Assumed deletion amounting Rs 1.52 Lakh of gross value of old pump has been shown in Form-9B(i) (refer Sl No. 213 of 2018-19).	It is observed that the additional capital expenditure claimed by the Petitioner @ sl nos. 9 to 11 are not directly related to the efficient operation of the plant. Accordingly, the additional capital expenditure claimed are <b>not allowed</b> .	0.00
10	Providing Bore well for potable water at CPS-II, Karian (Pkg. No. C-690)	3.38	02 Nos. of Borewells were installed during 2003-04 for the supply of water to the residents of power station in Karian colony. Discharge of water from these borewells has reduced due to continuous use since 15 years and is unable to fulfil the water demand of NHPC Establishment, Karian, on day-to-day basis. To provide sufficient water, new borewell has been installed.		0.00
11	Modification work of Sewage Treatment Plant 200CMD capacity, Karian Township (Pkg C-678)	9.03	As per latest requirement of Himachal Pradesh State Pollution Control Board, treated water was not to be discharged to the river channel and was required to be re-used in watering plants in Karian township.		0.00



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			Therefore, existing Sewage Treatment Plant was modified accordingly to comply with the directives of Pollution Control Board.		
12	Purchase of additional sirens and their power back-up arrangements	1.50	As per instructions of District Administration (Letter dated 21/12/2013 & 01/04/2016), additional sirens and their back up arrangements for various locations along Ravi River have been purchased in phased manner, to alert local public, about release of water from dam/ powerhouse. Total expenditure incurred for the same in 2014-15, 2015-16, 2016-17, 2017-18 & 2018-19 has been Rs 2.38 Lakh (Item No. C4 of 9A_14-15), Rs 0.78 Lakh (Item No. C3 of 9A_15-16), Rs 15.51 Lakh (Item No. 11 of 9A_16-17), Rs 4.63 Lakh (Item No. 9 of 9A_17-18) & Rs 1.5 Lakh (Item No. 12 of 9A_18-19) respectively.	As the said work is required for the successful and efficient operation of plant, the claim is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	1.50
	<b>Total amount (A)</b>	<b>122.84</b>			<b>89.91</b>

15. Based on the above, the total additional capital expenditure of Rs. 89.91 lakh is allowed in 2018-19.

### **Discharge of liabilities**

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

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
18.00	22.11	36.49	58.60	20.72



17. The un-discharged liabilities corresponding to the assets/works allowed, has been considered with their respective discharges made by the Petitioner, on prudence check. Accordingly, the discharge of liabilities allowed is as under:

		<i>(Rs. in lakh)</i>				
		2014-15	2015-16	2016-17	2017-18	2018-19
A	Opening undischarged liabilities	8.22	12.01	85.44	88.48	35.71
B	Liabilities corresponding to additional capital expenditure allowed during the year	12.01	85.44	39.34	3.45	1.60
C	Discharges of liabilities during the year	8.22	12.01	36.17	56.22	19.74
D	Reversal of liabilities	0.00	0.00	0.13	0.00	0.00
E	<b>Closing undischarged liabilities (A+B-C-D)</b>	<b>12.01</b>	<b>85.44</b>	<b>88.48</b>	<b>35.71</b>	<b>17.56</b>

**Exclusions (additions/deletions incurred, capitalized in books of accounts but not to be claimed for tariff purpose) as per reconciliation with books of account**

18. The year-wise net expenditure on exclusions as claimed by the Petitioner as per (Form 9C) reconciliation, with books of accounts are as follows:

		<i>(Rs. in lakh)</i>				
SI No.		2014-15	2015-16	2016-17	2017-18	2018-19
A	Exclusions in additions	56.01	182.50	248.18	216.75	67.17
B	Exclusions in Deletions	(-)173.88	(-)146.79	(-)189.55	(-) 66.61	(-)80.76
C	FERV Adjustment	(-)734.39				
D	<b>Net Exclusions claimed</b>	<b>(-)852.26</b>	<b>35.71</b>	<b>58.62</b>	<b>150.14</b>	<b>(-)13.58</b>

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

19. The Petitioner has submitted that the expenditure as stated in the table above is incurred on procurement/ replacement of minor assets and capital spares 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. As such, the exclusion of such positive entries is allowed and has no impact on tariff. Hence, the same is in order and allowed.

<b>(Rs. in lakh)</b>				
<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
56.01	182.50	248.18	216.75	67.17

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

20. The Petitioner has de-capitalized amounts in books of accounts pertaining to minor assets such as computers, office equipment, furniture, ladders, pumps, fixed assets of minor value less than Rs. 5000 etc., as these are not in use on account of their becoming unserviceable/obsolete and also deletion on account of inter-unit transfer of assets including FERV adjustment. It is observed that the same is in order and hence allowed.

<b>(Rs. in lakh)</b>					
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Claimed	(-)173.88	(-)146.79	(-)189.55	(-)66.61	(-)80.76
FERV adjustment	(-)734.39	0.00	0.00	0.00	0.00
Not Allowed	0.00	0.00	0.00	0.00	0.00
Allowed	<b>(-)908.27</b>	<b>(-)146.79</b>	<b>(-)189.55</b>	<b>(-)66.61</b>	<b>(-)80.76</b>

### **De-capitalization**

21. As regards de-capitalization, Regulation 14(4) of the 2014 Tariff Regulations, provides as under:

*“In case of de-capitalisation 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-capitalisation 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-capitalisation takes place, duly taking into consideration the year in which it was capitalised.”*



22. The Petitioner has claimed de-capitalization against assets such as purchase of buses, travelling telescope, automatic weather station, air compressors etc. The de-capitalization claimed are as under:

	<i>(Rs. in lakh)</i>				
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Decapitalization	(-)4.24	(-)2.75	(-)79.45	(-)30.42	(-)3.94
Assumed deletions	(-)31.15	(-)69.23	(-)53.56	(-)19.25	(-)16.05
<b>Total</b>	(-)35.39	(-)71.98	(-)133.01	(-)49.66	(-)19.98

23. Based on the submissions of the Petitioner, the “decapitalization” of certain items allowed as replacement of additional capital expenditure during the period 2014-19 has been allowed after considering assumed deletions. Further, in 2014-15, the de-capitalization corresponding to replacement of servers is also not allowed as the corresponding capitalization is not allowed. The Petitioner has claimed corresponding de-capitalization in 2017-18 and the same has been deducted from the de-capitalization in 2017-18. Accordingly, the de-capitalization allowed is as under:

	<i>(Rs. in lakh)</i>				
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
	(-)4.24	(-)2.75	(-)79.45	(-)26.62	(-)3.94

### **Assumed Deletion**

24. As per consistent methodology adopted by the Commission, the expenditure on replacement of assets, if found justified, is to be allowed for the purpose of tariff, provided that the capitalization of the said asset is followed by the de-capitalization of the original value of the old asset. However, in certain cases, where decapitalization is affected in books during the following years, to the year of capitalization of 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 Deletion”. Further, in absence of the gross value of the asset as per books 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.

25. It is observed that the Petitioner, while claiming certain additional capital expenditure during 2014-19, has not provided the actual de-capitalization value of old asset as per books for some of the items which are being replaced. The Petitioner has indicated the decapitalized value of these assets under ‘Assumed Deletion’ based on indexation method. However, we have considered the consistent methodology adopted by the Commission as explained in above paragraph, accordingly, based on above methodology, the decapitalization value of old asset has been worked out as shown below.

<i>(Rs. in lakh)</i>			
SI no	Asset	Additional Capitalization Allowed	Assumed deletion allowed
	<b>2014-15</b>		
1	Fiber Boat for Dam site	3.80	2.45
2	Replacement of Drainage VT pumps with submersible pump.	23.34	13.65
3	Submersible pumps of various capacities (3HP- 4Nos, 1.5HP- 2Nos, 3HP- 2Nos) for drainage of turbine pits, on replacement basis	3.45	3.28
4	Purchase of Governor Main distributing Valve, D-50 (ALSTOM)	14.96	7.41
	<b>Total</b>		<b>26.78</b>
	<b>2015-16</b>		
1	Purchase of DG set 500 kva - 2 no. Along with amf panel	50.03	27.86
2	Purchase of one 380 kva dg set for dam	24.03	14.75
3	Replacement of micro Scada server system of powerhouse & supply & installation of scada software for revival of rockwell desktop installed at dam site	85.75	47.75
4	Boom barrier up to 6m, godrej g6000	1.41	0.79



5	40 hp pump only sct/80/30 module 1 head 100 metre size 80/100 mm, model no-sct/80/30	3.71	2.07
6	Providing sewerage treatment plant for powerhouse	4.51	2.51
7	Drilling of deep bore wells for cooling water system of powerhouse (2 nos.) On replacement basis	2.31	1.29
8	Runner Upper Rotating Labyrinth Forged Ring (unfinished, 102X205), DWG NO.1-15111-001 (2 Nos.)	9.49	3.04
9	Runner Lower Rotating Lower Labyrinth Forged (unfinished), DWG NO.1-15115-001 (2 Nos.)	7.08	4.07
	<b>Total</b>		<b>104.12</b>
	<b>2016-17</b>		
1	Two nos. Gasoline engine operated power pack each type each for radial gate-i&ii power pack and radial gate iii&iv power pack.	16.39	8.69
2	Sewage treatment plant	0.97	0.51
3	Microscada server items (server pc 3 nos, client pc- 3 nos, modem - 3 nos & software)	26.81	14.22
4	Drilling of deep bore well for cooling water system of power house (2 nos.)	4.12	2.18
5	Supply, installation & calibration of rexroth make cims (cylinder integrated measurement system) position indicating system of radial gates, flap gate at dam	42.63	22.61
6	S.Sleeve for turbine shaft seal drawing no-1-15202-001	4.46	2.37
7	Bottom ring lower labyrinth drg no 1-13103-002 (2 no.)	15.52	8.23
8	Bottom ring upper labyrinth drg no1-13103-003 (2 no.)	9.49	5.04
9	Excitation transformer management relay	6.56	3.48
	<b>Total</b>		<b>67.33</b>
	<b>2017-18</b>		
1	Replacement of raw water-cooling pump (2004040090)	45.94	23.20
2	Purchase of pump motor set for HVAC system	0.6	0.30
3	Boom barrier at dam, door frame metal detector, fire extinguishers & other safety equipment's	4.32	2.18
4	Supply and installation & calibration of Rexroth make cims position indicating system of radial gates, flap gate at dam	2.35	1.19
	<b>Total</b>		<b>26.87</b>



	<b>2018-19</b>		
1	Replacement of clean water pump, ksb, model-RDLV 150-340 a	37.31	17.95
	<b>Total</b>		<b>17.95</b>

26. Based on the above, the net additional capital expenditure allowed for the period 2014-19 is as under:

		<i>(Rs. in lakh)</i>				
		<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
A	Additions allowed	114.24	295.94	647.23	126.75	89.91
B	Decapitalization allowed	(-)4.24	(-)2.75	(-)79.45	(-)26.62	(-)3.94
C	Assumed Deletion allowed	(-)26.78	(-)104.12	(-)67.33	(-)26.87	(-)17.95
D	Discharge of Liabilities	8.22	12.01	36.17	56.22	19.74
E	Net Additional Capitalization allowed (E=A-B-C+D)	<b>91.44</b>	<b>201.08</b>	<b>536.62</b>	<b>129.48</b>	<b>87.77</b>

### **Capital cost allowed for the period 2014-19**

27. Accordingly, the capital cost allowed 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 (a)	200106.10	200197.54	200398.62	200935.24	201064.72
Net additional capital expenditure allowed during the year/ period (b)	91.44	201.08	536.62	129.48	87.77
<b>Closing Capital Cost (a)+(b)</b>	<b>200197.54</b>	<b>200398.62</b>	<b>200935.24</b>	<b>201064.72</b>	<b>201152.49</b>

### **Debt: Equity Ratio**

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

*“19. Debt-Equity Ratio: (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 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 the 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."*

29. Gross normative loan and equity amounting to Rs.138543.65 lakh and Rs.61351.03 lakh, respectively, as on 31.3.2014, as considered in order dated 17.6.2016 in Petition No.233/GT/2014, has been considered as the normative loan and equity as on 1.4.2014. The debt: equity ratio was considered as 70:30, in terms of Regulation 19 of the 2014 Tariff Regulations, for the purpose of additional capitalization. The 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 19 (4) of 2014 Tariff Regulations.



## **Return on Equity**

30. 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.”*

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

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

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

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





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

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

32. We have considered the submissions of the Petitioner. Accordingly, the base rate of Return on Equity (ROE) has been grossed up, based on the MAT rate of the Petitioner, for the 2014-19 tariff period. Hence, 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
Opening Equity (A)	61351.03	61378.30	61438.01	61598.03	61636.52
Addition of Equity due to additional capital expenditure (B)	27.27	59.72	160.02	38.49	26.19
Normative Equity- Closing (C) =(A) + (B)	61378.30	61438.01	61598.03	61636.52	61662.71
Average Equity (D)= (A+C)/2	61364.66	61408.15	61518.02	61617.28	61649.62
Base Rate (%) (E)	16.500%	16.500%	16.500%	16.500%	16.500%
Effective Tax Rate (%) (F)	20.961%	21.342%	21.342%	21.342%	21.549%
Effective ROE Rate (%) (G)	20.876%	20.977%	20.977%	20.977%	21.032%
<b>Return on Equity (H)= (D)*(G)</b>	<b>12810.49</b>	<b>12881.59</b>	<b>12904.64</b>	<b>12925.46</b>	<b>12966.15</b>

### Interest on Loan

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

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





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

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

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

(5) *The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized. Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered: Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered*

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

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

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

(9) *In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute: Provided that the beneficiaries or the long term transmission customers /DICs shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan."*

34. Interest on loan has been computed as under:

- i) The gross normative loan amounting to Rs. 138543.65 lakh as on 31.3.2014, as considered in order dated 17.6.2016 in Petition No. 233/GT/2014, has been considered as on 1.4.2014.
- ii) Cumulative repayment amounting to Rs.106803.21 lakh has been considered as on 1.4.2014.



- iii) Accordingly, the net normative opening loan as on 1.4.2014 works out to Rs.31740.44 lakh.
- iv) Addition to normative loan on account of additional capital expenditure approved above have been considered.
- v) The Petitioner has claimed interest on loan considering weighted average rate of interest (WAROI) of 8.3766% in 2014-15 and 10.9674% in 2015-19, and the same has been considered for tariff.
- vi) Depreciation allowed has been considered as repayment of normative loan during the respective year of the period 2014-19. Further, repayments have been adjusted for de-capitalization of assets considered for the purpose of tariff.

35. Necessary Interest on loan has been worked out as under:

	(Rs. in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Gross opening loan	138543.65	138607.83	138749.19	139125.79	139216.78
Cumulative repayment of loan upto previous year	106803.21	117103.11	127360.40	129673.87	132063.13
Net Loan Opening	31740.44	21504.72	11388.79	9451.93	7153.66
Addition due to additional capital expenditure	64.18	141.36	376.60	90.99	61.58
Repayment of loan during the year	10316.86	10321.14	2405.59	2423.41	2429.69
Less: Repayment adjustment on account of de-capitalization	16.96	63.85	92.13	34.15	14.22
Net Repayment of loan during the year	10299.90	10257.29	2313.46	2389.26	2415.46
Net Loan Closing	21504.72	11388.79	9451.93	7153.66	4799.77
Average Loan	26622.58	16446.75	10420.36	8302.79	5976.71
Weighted Average Rate of Interest of loan	8.377%	10.967%	10.967%	10.967%	10.967%
<b>Interest on Loan</b>	<b>2230.06</b>	<b>1803.79</b>	<b>1142.85</b>	<b>910.60</b>	<b>655.49</b>

### **Depreciation**

36. 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 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 decapitalized asset during its useful services."*



37. The COD of the generating station is 31.3.2004. As the generating station has completed 12 years of operation on 31.3.2016, the remaining depreciable value has been spread over the balance useful life of the project from 2016-17 onwards.

Accordingly, depreciation has been computed as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross block (A)	200106.10	200197.54	200398.62	200935.24	201064.72
Net Additional capital expenditure during 2014-19 (B)	91.44	201.08	536.62	129.48	87.77
Closing gross block (C=A+B)	200197.54	200398.62	200935.24	201064.72	201152.49
Average gross block (D)=(A+C)/2	200151.82	200298.08	200666.93	200999.98	201108.61
Value of Free Hold Land (FH)	609.48	609.48	609.48	609.48	609.48
Land Under Reservoir (R)	83.43	83.43	83.43	83.43	83.43
Depreciable Value (E= (D-FH+R) *90%))	179663.19	179794.83	180126.79	180426.54	180524.30
Remaining Depreciable Value at the beginning of the year (F=E-Cum Dep at 'L' at the end of previous year)	75422.22	65253.96	55328.63	53314.91	51023.42
Balance useful Life (G)	25.00	24.00	23.00	22.00	21.00
Rate of Depreciation (H)	5.1545%	5.1529%			
<b>Depreciation (I=D*H)/ (F/G for 2016-19)</b>	<b>10316.86</b>	<b>10321.14</b>	<b>2405.59</b>	<b>2423.41</b>	<b>2429.69</b>
Cumulative Depreciation at the end of the year (J=I+ cumulative depreciation at 'L' at the end of previous year*)	114557.83	124862.01	127203.76	129535.03	131930.57
Less: Depreciation adjustment on account of de-capitalization (K)	16.96	63.85	92.13	34.15	14.22
<b>Cumulative Depreciation at the end of the year (L)</b>	<b>114540.87</b>	<b>124798.16</b>	<b>127111.63</b>	<b>129500.89</b>	<b>131916.35</b>

\*Cumulative depreciation as on 31.3.2014 is Rs.104240.97 lakh

### **Operation & Maintenance Expenses**

38. The generating station is in operation for three or more years as on 1.4.2014. As regards 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)

Sl. No.	Name of Station	2014-15	2015-16	2016-17	2017-18	2018-19
<b>A. NHPC</b>						
8	Chamera II	7256.54	7738.66	8252.82	8801.14	9385.89

39. The above O&M expenses was allowed by the Commission vide order dated 17.6.2016 in Petition No. 233/GT/2014. As the Petitioner has claimed O&M expenses for the period 2014-19 in terms of Regulation 29(3)(a) of the 2014 Tariff Regulations as above, the same is allowed.

### **Capital Spares**

40. The last proviso to Regulation 29(2) of the 2014 Tariff Regulations provides as under:

*“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 capitalization or consumption of stores and spares and renovation and modernization”.*

41. In terms of the above proviso, capital spares consumed are admissible separately, at the time of truing up of tariff, based on the details furnished by the Petitioner. The capital spares claimed by the Petitioner are as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Capital spares (not part of capital cost)	169.34	144.93	0.00	0.00	0.00
Capital spares (part of capital cost)	0.00	0.00	0.00	0.00	0.00

42. We have considered the submissions of the Petitioner. Based on the submissions 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 Form-17 of the Petition, has been considered for the purpose of tariff. Based on this, the details of capital spares consumption allowed for the period 2014-19 before adjusting the salvage value of old spare is summarized as under:

	<i>(Rs. in lakh)</i>				
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Total capital spares consumed claimed	169.34	144.93	0.00	0.00	0.00
Value of capital spares above Rs.1.00 lakh allowed on individual basis	169.34	144.93	0.00	0.00	0.00
<b>Net total value of capital spares considered</b>	169.34	144.93	0.00	0.00	0.00

43. Further, we are of the view that spares do have salvage value. Accordingly, in line with the practice of considering salvage value, presumed to be recovered by the Petitioner on sale of other 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 in Form-17 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	2017-18
Net total value of capital spares considered	169.34	144.93	0.00	0.00	0.00
Less: Salvage value @ 10%	16.93	14.49	0.00	0.00	0.00
<b>Net capital spares allowed</b>	<b>152.40</b>	<b>130.44</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

44. The Petitioner has submitted that it has filed Petition No. 236/MP/2019 claiming the recovery of impact of wage revision of its employees, deputed employees of KV staff/DAV and Central Industrial Security Force (CISF) in respect of this generating station for the period from 1.1.2016 to 31.3.2019. In view of this, the additional O&M claim in respect of the generating station during the period 1.1.2016 to 31.3.2019, will be guided by our decision in order dated 10.11.2022 in Petition No. 236/MP/2019.

### **Interest on Working Capital**

45. 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  
(c) Hydro generating station including pumped storage Hydro Electric 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 expense specified in regulation 29; and  
(iii) Operation and maintenance expenses for one month.”*

### ***Working Capital for Receivables***

46. The Receivable component of working capital has been worked out based on two months of fixed cost as under:

(Rs. in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
5626.55	5647.66	4256.75	4320.18	4387.53

### ***Working Capital for Maintenance Spares***





47. 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
1111.34	1180.37	1237.92	1320.17	1407.88

### **Working capital for O&M Expenses**

48. 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
617.41	655.76	687.74	733.43	782.16

### **Rate of Interest on Working Capital**

49. 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.”*

50. Accordingly, interest on working capital is worked out and allowed as under:

(Rs. in lakh)					
	2014-15	2015-16	2016-17	2017-18	2018-19
Working capital for O&M Expenses (one month of O&M Expenses)	617.41	655.76	687.74	733.43	782.16
Working capital for Maintenance Spares (15% of operation and maintenance expense)	1111.34	1180.37	1237.92	1320.17	1407.88
Working capital for Receivables (two months of fixed cost)	5626.55	5647.66	4256.75	4320.18	4387.53
<b>Total working capital</b>	<b>7355.31</b>	<b>7483.78</b>	<b>6182.41</b>	<b>6373.78</b>	<b>6577.57</b>
Rate of Interest (%)	13.500%	13.500%	13.500%	13.500%	13.500%
<b>Interest on Working Capital</b>	<b>992.97</b>	<b>1,010.31</b>	<b>834.63</b>	<b>860.46</b>	<b>887.97</b>

### **Annual Fixed Charges for the period 2014-19**





51. Based on the above, the annual fixed charges approved for the generating station for the period 2014-19 is summarized as under:

	<b>(Rs. in lakh)</b>				
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	10316.86	10321.14	2405.59	2423.41	2429.69
Interest on Loan	2230.06	1803.79	1142.85	910.60	655.49
Return on Equity	12810.49	12881.59	12904.64	12925.46	12966.15
Interest on Working Capital	992.97	1010.31	834.63	860.46	887.97
O&M Expenses	7408.94	7869.10	8252.82	8801.14	9385.89
<b>Total</b>	<b>33759.32</b>	<b>33885.93</b>	<b>25540.52</b>	<b>25921.06</b>	<b>26325.19</b>

*\*All figures under each head have been rounded off. The figure in total column in each year is also rounded off. As such the sum of individual items may not be equal to the arithmetic total of the column.*

### **Normative Annual Plant Availability Factor (NAPAF)**

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

### **Design Energy**

53. The Commission in its order dated 27.1.2012 in Petition No.66/2010 had approved the annual Design Energy (DE) of 1499.89 million units for the period 2009-14 in respect of this generating station. This DE has been considered for this generating station for the period 2014-19 as per month-wise details as under:

<b>Month</b>	<b>Design Energy (MUs)</b>
Apr	188.65
May	212.04
Jun	149.31
Aug	212.04
Sept	152.23
Oct	69.95
Nov	48.98
Dec	39.55
Jan	39.39
Feb	56.43



Mar	119.38
<b>Total</b>	<b>1499.89</b>

54. Accordingly, the DE of 1499.89 MUs has been considered and allowed.

### **Summary**

55. The annual fixed charges allowed vide order dated 17.6.2016 in Petition No. 233/GT/2014 and the annual fixed charges allowed in this order (after truing-up) for the period 2014-19 in respect of the generating station is summarized below:

	<i>(Rs. in lakh)</i>				
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Annual fixed charges allowed vide order dated 17.6.2016 in Petition No. 233/GT/2014	33635.64	33699.12	25499.19	25859.03	26204.62
Annual fixed charges allowed in this order	33759.32	33885.93	25540.52	25921.06	26325.19

56. The difference between the annual fixed charges recovered by the Petitioner in terms of our order dated 17.6.2016 in Petition No. 233/GT/2014 and the annual fixed charges determined by this order, shall be adjusted in terms of the provisions of Regulation 8(13) of the 2014 Tariff Regulations.

### **DETERMINATION OF TARIFF FOR THE PERIOD 2019-24**

57. The Petitioner, in this petition, has also sought determination of tariff of the generating station for the period 2019-24, in terms of the provisions of the 2019 Tariff Regulations. The annual fixed charges claimed by the Petitioner for the 2019-24 tariff period are as under:

#### ***Annual Fixed Charges claimed***

	<i>(Rs. in lakh)</i>				
	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Depreciation	2316.53	2334.48	2351.95	2369.12	2385.13
Interest on Loan	171.60	47.32	0.00	0.00	0.00
Return on Equity	12349.25	12368.48	12387.85	12405.34	12422.24



	2019-20	2020-21	2021-22	2022-23	2023-24
Interest on WC	796.37	821.28	849.52	879.80	911.47
O&M Expenses	12192.74	12753.22	13361.17	13998.09	14665.37
<b>Total</b>	<b>27826.48</b>	<b>28324.79</b>	<b>28950.48</b>	<b>29652.35</b>	<b>30384.22</b>

### **Capital Cost**

58. Clause (1) of Regulation 19 of the 2019 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. However, capital cost for an existing project is governed as per clause (3) of Regulation 19 of the 2019 Tariff Regulations, which provides as under:

*“The Capital cost of an existing project shall include the following:*

*(a) Capital cost admitted by the Commission prior to 1.4.2019 duly trued up by excluding liability, if any, as on 1.4.2019;*

*(b) Additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with these regulations;*

*(c) Capital expenditure on account of renovation and modernization as admitted by this Commission in accordance with these regulations;*

*(d) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;*

*(e) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of generating station but does not include the transportation cost and any other appurtenant cost paid to the railway; and*

*(f) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries....”*

59. The Petitioner vide Form-1i of the petition has claimed capital cost as follows:

		<b>(Rs. in lakh)</b>				
		<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
A	Opening Capital Cost	<b>201330.23</b>	201863.50	202179.56	202514.65	202762.71
B	Addition during the year / Period	608.73	485.00	515.00	375.00	450.00
C	De-capitalisation during the year/period	78.47	172.00	179.91	126.94	147.30
D	Discharges during the year	3.01	3.06	0.00	0.00	12.69
E	Closing Capital Cost (A+B-	<b>201863.50</b>	<b>202179.56</b>	<b>202514.65</b>	<b>202762.71</b>	<b>203078.10</b>



		2019-20	2020-21	2021-22	2022-23	2023-24
	C+D)					

60. The Commission in this order has allowed the closing capital cost of Rs. 201152.49 lakh, as on 31.3.2019. Accordingly, in terms of Regulation 19 of the 2019 Tariff Regulations, the capital cost of Rs. 201152.49 lakh, as on 31.3.2019 has been considered as the opening capital cost as on 1.4.2019, for the purpose of determination of tariff for the 2019 tariff period.

### **Additional Capital Expenditure**

61. Clause (2) of Regulation 9 of the 2019 Tariff Regulations provides that the application for determination of tariff shall be on admitted capital cost including additional capital expenditure already admitted and incurred up to 31.3.2019 (either based on actual or projected additional capital expenditure) and estimated additional capital expenditure for the respective years of the 2019-24 tariff period along with the true up for the 2014-19 period in accordance with the 2014 Tariff Regulations.

62. Regulation 25(1) of the 2019 Tariff Regulations provides as under:

*“25. Additional Capitalization within the original scope and after the cut-off date:*

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

- (a) Liabilities to meet award of arbitration or for compliance of the directions or order of any statutory authority, or order or decree of any court of law;*
- (b) Change in law or compliance of any existing law;*
- (c) Deferred works relating to ash pond or ash handling system in the original scope of work;*
- (d) Liability for works executed prior to the cut-off date;*
- (e) Force Majeure events;*



(f) *Liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments; and*

(g) *Raising of ash dyke as a part of ash disposal system.*

(2) *In case of replacement of assets deployed under the original scope of the existing project after cut-off date, the additional capitalization may be admitted by the Commission, after making necessary adjustments in the gross fixed assets and the cumulative depreciation, subject to prudence check on the following grounds:*

(a) *The useful life of the assets is not commensurate with the useful life of the project and such assets have been fully depreciated in accordance with the provisions of these regulations;*

(b) *The replacement of the asset or equipment is necessary on account of change in law or Force Majeure conditions;*

(c) *The replacement of such asset or equipment is necessary on account of obsolescence of technology; and*

(d) *The replacement of such asset or equipment has otherwise been allowed by the Commission.*

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

*26. Additional Capitalization beyond the original scope*

(1) *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 beyond the original scope, may be admitted by the Commission, subject to prudence check:*

(a) *Liabilities to meet award of arbitration or for compliance of order or directions of any statutory authority, or order or decree of any court of law;*

(b) *Change in law or compliance of any existing law;*

(c) *Force Majeure events;*

(d) *Need for higher security and safety of the plant as advised or directed by appropriate Indian Government Instrumentality or statutory authorities responsible for national or internal security;*

(e) *Deferred works relating to ash pond or ash handling system in additional to the original scope of work, on case to case basis:*

*Provided also that if any expenditure has been claimed under Renovation and Modernization (R&M) or repairs and maintenance under O&M expenses, the same shall not be claimed under this Regulation;*

(f) *Usage of water from sewage treatment plant in thermal generating station.*

(2) *In case of de-capitalisation 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-capitalisation 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-capitalisation takes place with corresponding adjustments in cumulative depreciation and cumulative repayment of loan, duly taking into consideration the year in which it was capitalized.*



64. The Petitioner has submitted that the projected additional capital expenditure has been claimed under various provisions of Regulation 25 and Regulation 26 of the 2019 Tariff Regulations, wherein, some of the admitted capital works have spilled over from the period 2014-19. Further, the Petitioner vide affidavit dated 29.6.2021 has submitted revised tariff forms of additional capital expenditure for the period 2019-24. Based on this, the details of additional capital expenditure claimed by the Petitioner vide affidavit dated 29.6.2021 are examined below:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
608.73	424.20	184.60	375.00	450.00

### **2019-20**

(Rs. in lakh)

S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
<b>A. Allowed by Commission during the period 2014-19</b>					
1	Fabrication & purchase of additional Draft tube gate Size 5.13x4.6 mtr, 20 ton & Purchase, Erection & Commissioning of additional Two nos. Draft tube Gantry crane 35 ton, power cables and SSB rack extension at PH	340.00	The Petitioner has submitted that Item was already allowed in FY 2016-17 by the Hon'ble Commission. However, purchase got delayed in tendering/ execution as mentioned under. Supply order for "Supply, Installation and Commissioning of 1 No. Additional Draft Tube Gate and 1 No. 35 Ton and 1 No. 45 Ton Capacity Fixed Rope Drum Hoist for Draft Tube Gates" amounting to Rs. 2,12,10,383/- was placed to M/s Precision India Private Limited (PIPL), Ahmedabad, Gujarat vide order no. NH/CH-II/P-21 of 2016-17/PO10817/2/SO-04/17/230-236 dated	It is observed that the additional capital expenditure claimed by the Petitioner was approved by Commission in order dated 17.6.2016 in Petition 233/GT/2014. However, due to certain difficulties the Petitioner was not able to capitalize the same during the period 2014-19 and hence the capitalization has been claimed as spill over works. In view of the submissions, the projected additional capital expenditure claimed is allowed under Regulation 26(1)(d) of the 2019	340.00



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			21.04.2017 which was later amended on dated 13.08.2018 amounting to Rs. 2,29,09,248/- due to implementation of GST. During load testing, both 35 Ton and 45 Ton capacity hoists, failed and could not pass the test. As such, M/s PIPL was requested to change the gear box design by D&E Division, C.O. and LOA was once again amended vide order no. NH/CH-II/P-21 of 2016-17/19/685 dated 02.09.2019 amounting to Rs. 3,02,35,566/- on account of quantity variation due to change in design. In view of above the material delivery was delayed and M/s PIPL supplied the complete material by 01.10.2019. After delivery of complete material, the erection work started on 09.10.2019 and completed on 27.12.2019 and was successfully tested on 17.01.2020 and 28.01.2020.	Tariff Regulations.	
	<b>Sub Total (A)</b>	<b>340.00</b>			<b>340.00</b>
<b>B. Replacement of assets deployed under the original scope of the existing project after cut-off date (Regulation 25)</b>					
1	Replacement of shaft seal cooling system by replacement of pipelines, filtration units etc	120.00	Most of the pipelines and filtration units of existing shaft seal cooling system have completed their life and have become unserviceable in last 10 years of operation, due to high silt content in River Water. For replacement of the faulty pipelines and filtration units, along with installation of additional components/ pumps, supply-work package has	Considering the submissions of the Petitioner and keeping in view that the expenditure is on account of replacement of asset /work due to obsolescence of technology, the claims of the Petitioner @ sl nos. 1 to 6 is <b>allowed</b> under Regulation 25(2)(c) of	<b>120.00</b>





S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			been planned in 2019-20. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 1 of 2019-20). Claim amount is on the basis of supply order placed.	the 2019 Tariff Regulations. The de-capitalization of old asset/work has been considered under assumed deletion.	
2	Replacement of Numerical Protection Relays for bus-bars, Generating unit, GSU transformer and lines	23.00	Numerical Protection Relays for bus-bar, generating unit, GSU transformer and lines, installed at the time of commissioning have become obsolete and need to be changed. Protection Relays of transformers & generators of Unit#2 & 3 (total 4 relays) have already been changed during 2014-19. Protection Relays of transformer & generator of Unit#1 (total 2 relays) have already been received in 2019-20 against Supply Order dated 2018. Replacement of relays of lines & bus bar (2*2 + 1= 3), along with replacement of original obsolete spare relays (5 relays) and software Upgradation, expenditure of Rs 90 Lakh is envisaged in phased manner. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 2 of 2019-20)		23.00
3	Replacement of fire-fighting pipelines and accessories	25.00	The existing firefighting pipelines were installed at the time of commissioning of the power plant. With time, the pipes have got eroded/rusted resulting in leakages at various points creating a potential to disrupt the entire firefighting system of the		25.00



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			PH. As the firefighting apparatus is of vital importance to safeguard the installation from fire hazard, the pipe lines and relevant accessories are being replaced in phased manner with new/better substitutes (on replacement basis). Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 3 of 2019-20). Claim amount is on the basis of supply order placed.		
4	RTU for Data telemetry	15.00	The existing RTU system installed by M/s Alstom in GIS in year 2003 (at the time of commissioning) has been phased out and its spares are not available from OEM. Keeping in view of criticality of the system and non-availability of modules i.e. CPU, Analog card, Digital cards etc. from the OEM (as replenishment), telemetry data of Power House shall be affected in case of any fault in RTU Panel. The proposal of up-gradation of existing RTU Panel may also be considered on account of advance features of communication protocol for telemetry, spares & service support for further period of 12-15 years or more. The same has been recommended by NRPC and implemented by Power Grid accordingly. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 4 of 2019-20)		15.00



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
5	Replacement of Automatic Change-over Panels for auxiliary-supply for various locations of Power Station	10.00	Many of the critical equipment/installations installed in the Power station are located at a fair distance from each other. These are not manned and loss of power to the equipment installed at these installations causes tripping of the generating units. The redundancy of the electrical supply is available at these installations but the automatic changeover panels shall suitably allow seamless/automatic change-over to the available power source so that unwanted tripping of the units is avoided. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 5 of 2019-20)		10.00
6	Purchase of Automatic weather Station (on replacement basis)	5.85	Existing automatic weather station (AWS) has become old & obsolete and spares of the same are not available in the market. Hence, this system is required to be replaced. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 6 of 2019-20) Year of purchase: 2011-12 Date of installation: 12-Jul-2011		5.85
	<b>Sub-Total (B)</b>	<b>198.85</b>			<b>198.85</b>
<b>C. Assets beyond the original scope of the existing project after cut-off date (Regulation 26)</b>					
1	Strengthening for CCTV/ Security System (by additional nvrs, PA System etc)	10.00	In the monsoon of 2018-19, the PowerStation experienced huge mud slides on the road leading to the Powerhouse and Dam which also resulted in the severing off of the recording of the CCTV	As the expenditure is related to the security and safety of the generating station and the Petitioner has furnished documentary evidence in support	10.00



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			cameras at Powerhouse and Dam due to breakage of the OFC cable etc. In order to mitigate the same, necessary NVR etc. is being proposed at these locations so that the recording of the CCTV cameras installed in the PH and Dam continuous unhindered. Further, necessary alarm/PA systems are also proposed to be installed in the Powerhouse (vital installation) so that communication is kept through in case of any potential terrorist attack etc. and loss of life etc. can be averted.	of its claim, the same is <b>allowed</b> under Regulation 26(1)(d) of the 2019 Tariff Regulations.	
2	Construction of ramp at Kendriya Vidyalay	20.00	It is a statutory compliance under Sugamya Bharat Abhiyaan to help the differently challenged people to reach to the places with minimum inconvenience.	The Petitioner has claimed projected additional capital expenditure under change in law. However, it is observed that the claim is not related the operation of the plant. Accordingly, the additional capital expenditure claimed is <b>not allowed</b> .	<b>0.00</b>
3	Purchase of Explosive Vapour Detector (2 Nos) and Hand-Held explosive detector	29.00	Both the Security gadgets are essential for checking at Powerhouse and Dam. The same has been necessitated during CISF Security Audit conducted by DIG, CISF New Delhi (HQ) during Security Audit, Nov 2016.	As the expenditure incurred is related to the security and safety of the generating station and the Petitioner has furnished documentary evidence in support of its claims @ sl nos. 3 & 4, the same are <b>allowed</b> under Regulation 26(1)(d) of the 2019 Tariff Regulations.	<b>29.00</b>
4	Purchase of pumps at Dam site - under DMP.	10.88	Under the disaster management programme, it is proposed to purchase 02 no pump for dewatering purposes in case of emergency situation arises at dam .		<b>10.88</b>



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
	<b>Sub-Total (C)</b>	69.88			<b>49.88</b>
	<b>Grand Total amount (A+B+C)</b>	<b>608.73</b>			<b>588.73</b>

65. In view of the above, the total additional capital expenditure allowed under original scope, change in law and other than original scope of work is Rs.198.85 lakh, and Rs.389.88 lakh respectively.

### **2020-21**

*(Rs. in lakh)*

S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
<b>A. Replacement of assets deployed under the original scope of the existing project after cut-off date (Regulation 25)</b>					
1	Replacement of excitation system for all 3 machines in 2019-24 (2 machine in 2020-21)	139.20	The existing excitation system installed in year 2003 (at the time of commissioning) has been phased out and its spares are not available from OEM. Keeping in view of criticality of the system and non-availability of the spares from the OEM (as replenishment), faults in the excitation system shall lead to prolonged generation loss. The proposal of up-gradation of excitation system may also be considered on account of arrival of new technology, spares & service support for a further period of 12-15 years or more. So, it is proposed to replace excitation systems of the generating units. The excitation system of two units have been replaced in 2020-21 (Unit#2 and Unit#3). The replacement of excitation system in Unit#1 shall be done in FY	Considering the submissions of the Petitioner and keeping in view that the expenditure is on account of replacement of asset/work due to obsolescence of technology, the claims of the Petitioner @sl nos. 1 to 6 are allowed under Regulation 25(2)(c) of the 2019 Tariff Regulations. The de-capitalization of old asset/work have been considered under assumed deletion.	<b>139.20</b>



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			2021-22. LOA already placed to the firm. The letter from OEM citing discontinuation of the services and spares of the excitation system is enclosed. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 1 of 2020-21)		
2	Inverters/ UPS for excitation system, GIS, Pothead Yard, emergency lighting etc (on replacement basis)	25.00	The existing inverters were installed in year 2003 (at the time of commissioning) and have got obsolete and its spares are not available from OEM. So, it is proposed to replace the inverters for the excitation system, GIS, Pothead Yard, emergency lighting etc (on replacement basis). Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 2 of 2020-21).		25.00
3	Replacement of Numerical Protection Relays for bus-bars, Generating unit, GSU transformer and lines	42.00	Numerical Protection Relays for bus-bar, generating unit, GSU transformer and lines, installed at the time of commissioning have become obsolete and need to be changed. Protection Relays of transformers & generators of Unit#2 & 3 (total 4 relays) have already been changed during 2014-19. Protection Relays of transformer & generator of Unit#1 (total 2 relays) have already been received in 2019-20 against Supply Order dated 2018. Replacement of relays of lines & bus bar (2*2 + 1= 3), along with		42.00



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			replacement of original obsolete spare relays (5 relays) and software Upgradation, expenditure of Rs 90 Lakh is envisaged in phased manner. Bus bar relay being replaced in 2020-21. LOA placed to the firm. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 3 of 2020-21).		
4	Replacement of water pipeline from Jarangla to TRT and water treatment plant to residential and non-residential colony at Karian with Pumps in phased manner	35.00	The existing pipeline was laid at the time of commissioning of the power plant. With time, the pipes have got eroded/rusted resulting in leakages at various points throughout the NH creating water scarcity at offices and residence at Karian township. So, replacement of old pipeline with new pipeline, in phased manner, has been planned. The pipeline from Jarangla brings surface water to the WTP at CPS-II from where water is supplied to the residential complex. This pipeline has to be replaced in two phases. In phase I, the quantum of pipeline that has been replaced adds up to 1577 m. The work has been completed in March 2021 and final bill is under process. The liability for the work has been kept in 2020-21 for an amount of Rs.10.28 lakhs. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 4 of 2020-21).		35.00
5	Supply, Installation	78.00	CIMS Gate position		78.00





S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
	and calibration of Rexroth Bosch make CIMS position indicating system with accessories for 2 Nos regulating gate and 2 Nos Maintenance Gate of SFT 1 & 2 (on replacement basis)		indicating system of 2 Nos regulating gate and 2 Nos Maintenance Gate of SFT 1 & 2 is essentially required for smooth operation of SFT gates and ARMAC system of dam. The existing CIMS position Indicating System was installed in year 2003 (at the time of commissioning) has been phased out and its spares are not available from OEM. Keeping in view of criticality of the system and non-availability of the spares from the OEM (as replenishment), due to non-working of these sensors, actual position of gates cannot be assessed. The proposal of up-gradation of CIMS position Indicating System may also be considered on account of arrival of new technology, spares & service support for a further period of 12-15 years or more. So, it is proposed to replace CIMS position Indicating System of 2 Nos regulating gate and 2 Nos Maintenance Gate of SFT 1 & 2 in 2020-21 along with capital maintenance. The de-capitalisation value of old item are provided in Form-9B(i) (refer Item No. 5 of 2020-21).		
6	Purchase of Radar type Water Level Sensors for upstream & downstream of Intake Gates 1 & 2 (on replacement basis)	30.00	Radar Type Water Level Sensors having specific configurations of level, radar, antenna, integrated data memory, data backup functions, display etc. were installed by the consortium company at		30.00



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			the time of construction of project at upstream and downstream of Intake Gates to have digital water level readings to ensure balanced conditions of water level at upstream and downstream of Intake Gates and at left bank and right bank of reservoir to have digital data of water level of reservoir at Control Panel in the Dam Operation, for smooth power generation. The existing Radar Type water level sensor has been phased out and its spares are not available from OEM. Keeping in view of criticality of the system and non-availability of the spares from the OEM (as replenishment), due to non-working of these sensors, assessing of actual water level is not possible. So, it is proposed to replace three number Radar type Water Level Sensors in 2020-21. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 6 of 2020-21).		
7	Replacement of spares of Rockwell System with installation & commissioning of software system (new version) at dam	30.00	M/s Rockwell Automation Systems was installed in year 2003 (at the time of commissioning) in the Control Panel in the Dam Operation Control room for having specific water level of reservoir, intake gates, SFT Gate position, Radial gates, with integrated data memory, data backup functions, display etc. The system has been phased out and its spares are not available from OEM hence	It is observed from the submission of the Petitioner that the assets @ sl nos. 7& 8 is in the nature of spares. Since the capitalization of spares are not allowed beyond the cut-off date, the claims are not allowed.	0.00



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			Upgradation of software is essentially required to be done for effective operation of ARMAC system of dam. the healthiness of system is required for smooth and hassle-free dam operation, works of operation of spillway radial gates / SFT gates and in resultant effect for smooth power generation. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 7 of 2020-21).		
8	Replacement of existing industrial type passenger lift at SFT gates well.	35.00	Passenger lift at SFT gates was installed in year 2003 (at the time of commissioning), and have got obsolete and its spares are not available from OEM. So, it is proposed to replace these lifts at SFT gate site and there is no other proper access to SFT gates. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 8 of 2020-21).	Considering the submissions of the Petitioner and keeping in view that the expenditure is on account of replacement of asset /work due to obsolescence of technology, the claims of the Petitioner is allowed under Regulation 25(2)(c) of the 2019 Tariff Regulations.	35.00
	<b>Sub-Total (B)</b>	<b>414.20</b>			<b>384.20</b>
<b>B. Assets beyond the original scope of the existing project after cut-off date (Regulation 26)</b>					



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
1	Strengthening for CCTV/ Security System (by additional nvrs, PA System etc)	10.00	In the monsoon of 2018-19, the PowerStation experienced huge mud slides on the road leading to the Powerhouse and Dam which also resulted in the severing off of the recording of the CCTV cameras at Powerhouse and Dam due to breakage of the OFC cable etc. In order to mitigate the same, necessary NVR etc. is being proposed at these locations so that the recording of the CCTV camers installed in the PH and Dam continuous unhindered. Further, necessary alarm/PA systems are also proposed to be installed in the Powerhouse (vital installation) so that communication is kept through in case of any potential terrorist attack etc. and loss of life etc. can be averted.	As the expenditure is related to the security and safety of the generating station and the Petitioner has furnished documentary evidence in support of its claim, the same is <b>allowed</b> under Regulation 26(1)(d) of the 2019 Tariff Regulations.	<b>10.00</b>
	<b>Sub-Total (B)</b>	<b>10.00</b>			<b>10.00</b>
	<b>Grand Total amount (A+B)</b>	<b>424.20</b>			<b>394.20</b>

66. In view of the above, the total additional capital expenditure allowed under original scope, change in law and other than original scope of work is Rs. 384.20 lakh, Rs.10.00 lakh respectively

### **2021-22**

(Rs. in lakh)

S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
<b>A. Replacement of assets deployed under the original scope of the existing project after cut-off date (Regulation 25)</b>					
1	Replacement of excitation system for all 3 machines in	69.60	The existing excitation system installed in year 2003 (at the time of	Considering the submissions of the Petitioner and	<b>69.60</b>



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
	2019-24 (1 machines in 2021-22)		commissioning) has been phased out and its spares are not available from OEM. Keeping in view of criticality of the system and non-availability of the spares from the OEM (as replenishment), faults in the excitation system shall lead to prolonged generation loss. The proposal of up-gradation of excitation system may also be considered on account of arrival of new technology, spares & service support for a further period of 12-15 years or more. So, it is proposed to replace excitation systems of the generating units. The excitation system of two units have been replaced in 2020-21 (Unit#2 and Unit#3) The replacement of excitation system in Unit#1 shall be done in FY 2021-22 . LOA already placed to the firm. The letter from OEM citing discontinuation of the services and spares of the excitation system is enclosed. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 1 of 2021-22).	keeping in view that the expenditure is on account of replacement of asset /work due to obsolescence of technology, the claims of the Petitioner & sl nos. 1 to 5 are allowed under Regulation 25(2)(c) of the 2019 Tariff Regulations. The de-capitalization of old asset/work has been considered under assumed deletion.	
2	Inverters/ UPS for excitation system, GIS, Pothead Yard, emergency lighting etc (on replacement basis)	30.00	The existing inverters were installed in year 2003 (at the time of commissioning) and have got obsolete and its spares are not available from OEM. So, it is proposed to replace the inverters for the excitation system, GIS, Pothead Yard, emergency lighting		30.00



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			etc (on replacement basis). Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 2 of 2021-22).		
3	Replacement of Numerical Protection Relays for bus-bars, Generating unit, GSU transformer and lines	25.00	Numerical Protection Relays for bus-bar, Generating unit, GSU transformer and lines, installed at the time of commissioning have become obsolete and need to be changed. Protection Relays of transformers & generators of Unit#2 & 3 (total 4 relays) have already been changed during 2014-19. Protection Relays of transformer & generator of Unit#1 (total 2 relays) have already been received in 2019-20 against Supply Order dated 2018. Replacement of relays of lines & bus bar (2*2 + 1= 3), along with replacement of original obsolete spare relays (5 relays) and software Upgradation, expenditure of Rs 90 Lakh is envisaged in phased manner. A Line relay each (in Main 2 protection of both 400 kV lines) being replaced in 2021-22. LOA already placed to the firm. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 3 of 2021-22)		25.00
4	Replacement of HVAC pipelines, ducts, AHUs, pumps, automation system etc	25.00	The existing HVAC pipelines were installed at the time of commissioning of the power plant. With time, the various pipes in the system have got eroded/rusted resulting in		25.00



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			leakages at various points creating a potential to disrupt the various systems in the vicinity of the same. As the HVAC system is of vital importance (considering the underground Powerhouse at CPS-II) for the health of the persons deployed in the Powerhouse and also for proper working of various equipment, the pipelines/ducts (650 m) and relevant accessories are to be replaced with new/better substitutes in phased manner (on replacement basis). Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 4 of 2021-22). The basis for claim amount is estimation/budgetary offer.		
5	Replacement of water pipeline from Jarangla to TRT and water treatment plant to residential and non-residential colony at Karian with Pumps in phased manner	35.00	The existing pipeline was laid at the time of commissioning of the power plant. With time, the pipes have got eroded/rusted resulting in leakages at various points throughout the NH creating water scarcity at offices and residence at Karian township. So, replacement of old pipeline with new pipeline, in phased manner, has been planned. The pipeline from Jarangla brings surface water to the WTP at CPS-II from where water is supplied to the residential complex. This pipeline has to be replaced in two phases. In phase II, the quantum of pipeline that is being		35.00





S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			replaced adds up to 2249 m. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 5 of 2021-22).		
	<b>Sub-Total (A)</b>	<b>184.60</b>			<b>184.60</b>
	<b>Grand Total</b>	<b>184.60</b>			<b>184.60</b>

67. In view of the above, the total additional capital expenditure allowed under original scope, change in law and other than original scope of work is Rs.184.60 lakh, Rs.0.00 lakh respectively.

### **2022-23**

*(Rs. in lakh)*

S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
<b>A. Replacement of assets deployed under the original scope of the existing project after cut-off date (Regulation 25)</b>					
1	Replacement of governing system for all 3 machines in 2019-24	230.0	The existing governing system installed in year 2003 (at the time of commissioning) has been phased out and its spares are not available from OEM. Of late some problems have been encountered in electronic governor of Unit#1 and OEM has informed that the Electronic governor installed in Chamera Power Station-II has reached obsolescence. As a result, OEM has shown their helplessness to provide spare as well as repair services. However, at the same time OEM has proposed to replace existing governor with digital TSLG governor solution. So, it is proposed to replace governing systems of all the generating units. Letter from the OEM citing	Considering the submissions of the Petitioner and keeping in view that the expenditure is on account of replacement of asset /work due to obsolescence of technology, the claims of the Petitioner @sl nos. 1 to 4 are allowed under Regulation 25(2)(c) of the 2019 Tariff Regulations. The de-capitalization of old asset/work has been considered under assumed deletion.	<b>230.00</b>



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			termination of support for spares and services is enclosed. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 1 of 2022-23)		
2	Replacement of shaft seal arrangements in Unit#1 & Unit#3 in 2019-24 (One machine in 2022-23)	100.0	As per original design, radial shaft seal cooling system was installed in all 3 machines of the CPS-II. However, during operation of the machines, high leakage was observed through the shaft seals, due to damage of the seals caused by high silt content in river water. The problem is of serious nature and has resulted in significant forced outages of machines. Further, the leakage may result in flooding also. For sorting out the issue, axial shaft seal arrangements was installed in Unit#2 in year 2013-14 and its performance has been found satisfactory. So, installation of axial shaft seal arrangements in Unit#3 and Unit#1 has been planned in 2022-23 & 2023-24 respectively. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 2 of 2022-23).		100.00
3	Replacement of HVAC pipelines, ducts, AHUs, pumps, automation system etc	25.00	The existing HVAC pipelines were installed at the time of commissioning of the power plant. With time, the various pipes in the system have got eroded/rusted resulting in leakages at various points creating a potential to disrupt the various systems in the vicinity of		25.00



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			the same. As the HVAC system is of vital importance (considering the underground Powerhouse at CPS-II) for the health of the persons deployed in the Powerhouse and also for proper working of various equipment, the pipe lines/ducts (600 m) and relevant accessories are to be replaced with new/better substitutes in phased manner (on replacement basis). Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 3 of 2022-23). The basis for claim amount is estimation/budgetary offer.		
4	Replacement of water pipeline from Jarangla to TRT and water treatment plant to residential and non-residential colony at Karian with Pumps in phased manner	20.00	The existing pipeline was laid at the time of commissioning of the power plant. With time, the pipes have got eroded/rusted resulting in leakages at various points throughout the NH creating water scarcity at offices and residence at Karian township. So, replacement of old pipeline with new pipeline, in phased manner, has been planned. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No.4 of 2022-23).		20.00
	<b>Sub-Total (A)</b>	<b>375.00</b>			<b>375.00</b>
	<b>Grand Total amount</b>	<b>375.00</b>			<b>375.00</b>

68. In view of the above, the total additional capital expenditure allowed under original scope, change in law and other than original scope of work is Rs.375.00 lakh, Rs.0.00.00 lakh respectively.



**2023-24****(Rs. in lakh)**

<b>S. No</b>	<b>Details of the claim</b>	<b>Amount claimed</b>	<b>Justification submitted by the Petitioner</b>	<b>Remarks on admissibility</b>	<b>Amount Allowed</b>
<b>A. Replacement of assets deployed under the original scope of the existing project after cut-off date (Regulation 25)</b>					
<b>1</b>	Replacement of shaft seal arrangements in Unit#1 & Unit#3 in 2019-24 (One machine in 2021-22)	120.00	As per original design, radial shaft seal cooling system was installed in all 3 machines of the CPS-II. However, during operation of the machines, high leakage was observed through the shaft seals, due to damage of the seals caused by high silt content in river water. The problem is of serious nature and has resulted in significant forced outages of machines. Further, the leakage may result in flooding also. For sorting out the issue, axial shaft seal arrangements was installed in Unit#2 in year 2013-14 and its performance has been found satisfactory. So, installation of axial shaft seal arrangements in Unit#3 and Unit#1 has been planned in 2022-23 & 2023-24 respectively. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 1 of 2023-24). The claim is on the basis of estimation.	Considering the submissions of the Petitioner and keeping in view that the expenditure is on account of replacement of asset /work due to obsolescence of technology, the claims of the Petitioner @ sl nos. 1 & 2 are allowed under Regulation 25(2)(c) of the 2019 Tariff Regulations. The de-capitalization of old asset/work has been considered under assumed deletion.	<b>120.00</b>
<b>2</b>	Purchase of bottom discharge ring with DT Cone (on replacement basis)	330.00	Out of 3 bottom discharge rings (one in each machine), Unit#1's bottom discharge ring has worn out significantly and leakages are being observed from it, even after extensive repairs		<b>330.00</b>



S. No	Details of the claim	Amount claimed	Justification submitted by the Petitioner	Remarks on admissibility	Amount Allowed
			during annual maintenance. So, purchase of new bottom discharge ring on replacement basis, is required. The available Bottom Discharge Ring (BDR) & DT Cone are installed in Units. Repairability of same shall be assessed by a committee after the retrieval of same from the Unit. It has been observed during past capital maintenances that significant damages occur in BDR & DT Cone whose manual repairs take considerable time at site and results are not upto the mark. Machining facility for BDR & DT Cone and HVOF Coating facilities are not available in Power Station. But due to non-availability of spare BDR & DT Cone at Power Station, BDR (of the Unit under capital maintenance) cannot be sent to external agencies having required facilities, on account of time constraints. Decapitalisation value of old item are provided in Form-9B(i) (refer Item No. 2 of 2023-24). The claim is based on the budgetary offer.		
	<b>Sub-Total (A)</b>	<b>450.00</b>			<b>450.00</b>
	<b>Grand Total amount</b>	<b>450.00</b>			<b>450.00</b>

69. In view of the above, the total additional capital expenditure allowed under original scope, change in law and other than original scope of work is Rs.450.00 lakh, Rs.0.00 lakh respectively.



## De-capitalization

70. The Petitioner has claimed the de-capitalization, as per Form 9Bi, as under:

<i>(Rs. in lakh)</i>				
2019-20	2020-21	2021-22	2022-23	2023-24
(-)78.47	(-)149.97	(-)64.47	(-)126.94	(-)147.30

71. Since these assets are not in use, the de-capitalization as claimed by the Petitioner is allowed, keeping in view the additional capital expenditure of allowed items. It is observed that the Petitioner has claimed 'Assumed Deletions' for the said assets. Accordingly, the same has been dealt in the subsequent para.

## Assumed Deletions

72. As per consistent methodology adopted by the Commission, the expenditure on replacement of assets, if found justified, is to be allowed for the purpose of tariff, provided that the capitalization of the said asset is followed by the de-capitalization of the original value of the old asset. However, in certain cases, where decapitalization is affected in books during the following years, to the year of capitalization of 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 deletion". Further, in 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.

73. It is observed that the Petitioner, while claiming additional capital expenditure in tariff period 2019-24, has not provided the actual de-capitalization value of old asset as per books for items which are being replaced. The Petitioner has indicated the



decapitalized value of these assets under 'Assumed Deletion' based on indexation method. However, we have considered the consistent methodology adopted by the Commission as explained in above paragraph. However, the Petitioner is directed to furnish the gross value of old asset which is being decapitalized at the time of truing-up. Accordingly, based on above methodology, the decapitalization value of old asset has been worked out as shown below.

<i>(Rs. in lakh)</i>			
SI No	Asset	ACE Allowed	Assumed Deletion
<b>2019-20</b>			
1	Replacement of shaft seal cooling system by replacement of pipelines, filtration units etc	120	54.97
2	Replacement of Numerical Protection Relays for bus-bars, Generating unit, GSU transformer and lines	23	10.54
3	Replacement of fire-fighting pipelines and accessories	25	11.45
4	RTU for Data telemetry	15	6.87
5	Replacement of Automatic Change-over Panels for auxiliary-supply for various locations of Power Station	10	4.58
6	Purchase of Automatic weather Station (on replacement basis)	5.85	3.77
	<b>Total</b>		<b>92.19</b>
<b>2020-21</b>			
1	Replacement of excitation system for all 3 machines in 2019-24 (2 machine in 2020-21)	139.20	60.73
2	Inverters/ UPS for excitation system, GIS, Pothead Yard, emergency lighting etc (on replacement basis)	25	10.91
3	Replacement of Numerical Protection Relays for bus-bars, Generating unit, GSU transformer and lines	42	18.32
4	Replacement of water pipeline from Jarangla to TRT and water treatment plant to residential and non-residential colony at Karian with Pumps in phased manner	35	15.27
5	Supply, Installation and calibration of Rexroth Bosch make CIMS position indicating system with accessories for 2 Nos regulating gate and 2 Nos Maintenance Gate of SFT 1 & 2 (on replacement basis)	78.00	34.03
6	Purchase of Radar type Water Level Sensors for upstream & downstream of Intake Gates 1 & 2 (on replacement basis)	30.00	13.09





7	Replacement of existing industrial type passenger lift at SFT gates well.	35.00	15.27
	<b>Total</b>		<b>167.63</b>
	<b>2021-22</b>		
1	Replacement of excitation system for all 3 machines in 2019-24 (1 machine in 2021-22)	69.6	28.92
2	Inverters/ UPS for excitation system, GIS, Pothead Yard, emergency lighting etc (on replacement basis)	30.00	12.47
3	Replacement of Numerical Protection Relays for bus-bars, Generating unit, GSU transformer and lines	25.00	10.39
4	Replacement of HVAC pipelines, ducts, AHUs, pumps, automation system etc	25.00	10.39
5	Replacement of water pipeline from Jarangla to TRT and water treatment plant to residential and non-residential colony at Karian with Pumps in phased manner	35	14.54
	<b>Total</b>		<b>76.71</b>
	<b>2022-23</b>		
1	Replacement of governing system for all 3 machines in 2019-24	230.00	91.02
2	Replacement of shaft seal arrangements in Unit#1 & Unit#3 in 2019-24 (One machine in 2022-23)	100.00	39.57
3	Replacement of HVAC pipelines, ducts, AHUs, pumps, automation system etc	25.00	9.89
4	Replacement of water pipeline from Jarangla to TRT and water treatment plant to residential and non-residential colony at Karian with Pumps in phased manner	20.00	7.91
	<b>Total</b>		<b>148.40</b>
	<b>2023-24</b>		
1	Replacement of shaft seal arrangements in Unit#1 & Unit#3 in 2019-24 (One machine in 2021-22)	120.00	45.23
2	Purchase of bottom discharge ring with DT Cone (on replacement basis)	330.00	124.37
	<b>Total</b>		<b>169.60</b>

### **Discharge of liabilities**

74. The un-discharged liabilities for the period 2019-24, corresponding to the assets/works allowed, has been considered with their respective discharges made by the Petitioner on prudence check. Accordingly, the discharge of liabilities allowed during the period 2019-24 is as under:

						(Rs. in lakh)
		<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>



		2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening undischarged liabilities	17.56	15.04	12.69	12.69	12.69
B	Liabilities corresponding to additional capital expenditure allowed during the year	0.00	0.00	0.00	0.00	0.00
C	Discharges of liabilities during the year	2.52	2.35	0.00	0.00	12.69
D	<b>Closing undischarged liabilities (A+B-C)</b>	<b>15.04</b>	<b>12.69</b>	<b>12.69</b>	<b>12.69</b>	<b>0.00</b>

### **Additional capital expenditure allowed (Net) for the period 2019-24**

75. In view of above, the net additional capital expenditure allowed for the period 2019-24 is as under:

	(Rs. in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Additional capital expenditure allowed (a)	588.73	394.20	184.60	375.00	450.00
Less: De-capitalisation considered (b)	92.19	167.63	76.71	148.40	169.60
Discharge of liabilities (c)	2.52	2.35	0.00	0.00	12.69
<b>Net additional capital expenditure allowed (c)=(a)-(b)+(c)</b>	<b>499.07</b>	<b>228.93</b>	<b>107.89</b>	<b>226.60</b>	<b>293.09</b>

### **Capital cost allowed for the period 2019-24**

76. Accordingly, the capital cost allowed for the purpose of tariff for the period 2019-24 is as under:

	(Rs. in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	201152.49	201651.56	201880.48	201988.38	202214.98
Net Additional capital expenditure allowed during the year/ period	499.07	228.93	107.89	226.60	293.09
<b>Closing Capital Cost</b>	<b>201651.56</b>	<b>201880.48</b>	<b>201988.38</b>	<b>202214.98</b>	<b>202508.06</b>

### **Debt-Equity Ratio**

77. Regulation 18 of the 2019 Tariff Regulations provides as under:

*“18. Debt-Equity Ratio: (1) For new projects, the debt-equity ratio of 70:30 as on date of commercial operation shall be considered. 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, as the case may be, shall submit the resolution of the Board of the company or approval of the competent authority in other cases regarding infusion of funds 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 1.4.2019, debt:equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2019 shall be considered:

Provided that in case of a generating station or a transmission system including communication, system which has completed its useful life as on or after 1.4.2019, if the equity actually deployed as on 1.4.2019 is more than 30% of the capital cost, equity in excess of 30% shall not be taken into account for tariff computation;

Provided further that in case of projects owned by Damodar Valley Corporation, the debt: equity ratio shall be governed as per sub-clause (ii) of clause (2) of Regulation 72 of these regulations.

(4) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2019, the Commission shall approve the debt: equity ratio in accordance with clause (1) of this Regulation.

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2019 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."

78. The normative debt equity ratio of 70:30 has been considered for the admitted additional capital expenditure. 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.

### **Return on Equity**

79. Regulations 30 and 31 of the 2019 tariff Regulations provides as under:

#### *“30. Return on Equity*

*(1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with Regulation 18 of these regulations.*

*(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating station, transmission system including communication system and run-of 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 return on equity in respect of additional capitalization after cut-off date beyond the original scope excluding additional capitalization due to Change in Law, shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system;*

*Provided further that:*

*i. In case of a new project, the rate of return on equity shall be reduced by 1.00% 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) or Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system based on the report submitted by the respective RLDC;*

*ii. in case of existing generating station, as and when any of the requirements under (i) above of this Regulation are found lacking based on the report submitted by the concerned RLDC, rate of return on equity shall be reduced by 1.00% for the period for which the deficiency continues;*

*iii. in case of a thermal generating station, with effect from 1.4.2020:*

*a) rate of return on equity shall be reduced by 0.25% in case of failure to achieve the ramp rate of 1% per minute;*

*b) an additional rate of return on equity of 0.25% shall be allowed for every incremental ramp rate of 1% per minute achieved over and above the ramp rate of 1% per minute, subject to ceiling of additional rate of return on equity of 1.00%:*

*Provided that the detailed guidelines in this regard shall be issued by National Load Dispatch Centre by 30.6.2019.*

#### *31. Tax on Return on Equity:*

*(1) The base rate of return on equity as allowed by the Commission under Regulation 30 of these regulations 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 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 paid on income from other businesses including deferred tax liability (i.e. income from business other than business of generation or transmission, as the case may be) shall be excluded 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.

*Illustration-*

(i) In case of a generating company or a transmission licensee paying Minimum Alternate Tax (MAT) @ 21.55% including surcharge and cess: Rate of return on equity =  $15.50 / (1 - 0.2155) = 19.758\%$

(ii) In case of a generating company or a transmission licensee paying normal corporate tax including surcharge and cess:

(a) Estimated Gross Income from generation or transmission business for 2019-20 is Rs. 1,000 Crore;

(b) Estimated Advance Tax for the year on above is Rs. 240 Crore;

(c) Effective Tax Rate for the year 2019-20 = Rs. 240 Crore / Rs. 1000 Crore = 24%;

(d) Rate of return on equity =  $15.50 / (1 - 0.24) = 20.395\%$ .

(3) The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2019-24 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee, as the case may be. Any under-recovery or over-recovery of grossed up rate on return on equity after truing up, shall be recovered or refunded to beneficiaries or the long term customers, as the case may be, on year to year basis.”

80. The Return on Equity (ROE) for the existing asset base and the additional capital expenditure allowed in this order for asset/work, within the original scope of



work, has been calculated by grossing up of base ROE, at MAT rate of 17.472%, as submitted by the Petitioner. Also, based on the additional capital expenditure which are beyond the original scope, excluding the additional capitalization due to change in law, ROE has been calculated considering the weighted average rate of interest on loan as claimed by the petitioner of the relevant year grossed up at MAT rate of 17.472%. Accordingly, ROE has been worked out and allowed as under:

**(Rs. in lakh)**

	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Opening Equity (A)	61662.71	61694.88	61759.45	61791.31	61858.31
Total addition due to Capitalization (B)	32.17	64.57	31.86	67.00	86.81
Closing Equity (C) =(A)+(B)	61694.88	61759.45	61791.31	61858.31	61945.12
Average Equity (D)=(A+C)/2	61678.79	61727.17	61775.38	61824.81	61901.72
Base rate (%) (E)	16.500%	16.500%	16.500%	16.500%	16.500%
Effective Tax rate (%) (F)	17.472%	17.472%	17.472%	17.472%	17.472%
Effective ROE rate (%) (G) =E/(1-F)	19.993%	19.993%	19.993%	19.993%	19.993%
Return on Equity within the original scope of work (H)=(D)*(G)	<b>12331.44</b>	<b>12341.11</b>	<b>12350.75</b>	<b>12360.64</b>	<b>12376.01</b>
<b>Addition due to additional capitalization beyond original scope of work</b>					
Opening Equity (A)	0.00	116.96	119.96	119.96	119.96
Total addition due to Capitalization (B)	116.96	3.00	0.00	0.00	0.00
Closing Equity (C) =(A)+(B)	116.96	119.96	119.96	119.96	119.96
Average Equity (D)=(A+C)/2	58.48	118.46	119.96	119.96	119.96
Base rate (%) (E)	7.92%	7.92%	7.92%	7.92%	7.92%
Effective Tax rate (%) (F)	17.472%	17.472%	17.472%	17.472%	17.472%
Effective ROE rate (%) (G) =E/(1-F)	9.597%	9.597%	9.597%	9.597%	9.597%
Return on Equity within the original scope of work (H)=(D)*(G)	<b>5.61</b>	<b>11.37</b>	<b>11.51</b>	<b>11.51</b>	<b>11.51</b>

### **Total Return on Equity allowed**

**(Rs. in lakh)**

	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Return on Equity at Normal Rate (A)	12331.44	12341.11	12350.75	12360.64	12376.01





	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity at WAROI (B)	5.61	11.37	11.51	11.51	11.51
<b>Total Return on Equity allowed (C= A+B)</b>	<b>12337.05</b>	<b>12352.48</b>	<b>12362.27</b>	<b>12372.15</b>	<b>12387.52</b>

### **Interest on Loan**

81. Regulation 32 of the 2019 Tariff Regulations provides as under:

*“32. Interest on loan capital:*

*(1) The loans arrived at in the manner indicated in Regulation 18 of these regulations shall be considered as gross normative loan for calculation of interest on loan.*

*(2) The normative loan outstanding as on 1.4.2019 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2019 from the gross normative loan.*

*(3) The repayment for each of the year of the tariff period 2019-24 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of decapitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered up to the date of de-capitalisation 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 changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.”*

82. Interest on loan has been computed as under:



- i) The gross normative loan amounting to Rs.139278.36 lakh as on 31.3.2019, as considered in this order, has been considered as the opening loan on 1.4.2019.
- ii) Cumulative repayment amounting to Rs.134478.59 lakh as on 31.3.2019, as considered in this order has been considered as on 1.4.2019.
- iii) Accordingly, the net normative opening loan as on 1.4.2019 works out to Rs.4799.77 lakh.
- iv) Addition to normative loan on account of additional capital expenditure approved above have been considered.
- v) The Petitioner has claimed interest on loan considering weighted average rate of interest (WAROI) of 7.92% in 2019-24. The same has been considered for tariff.
- vi) Depreciation allowed has been considered as repayment of normative loan during the respective year of the period 2019-24. Further, repayments have been adjusted for de-capitalization of assets considered for the purpose of tariff.

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

	(Rs. in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Gross opening loan	139278.36	139628.29	139789.65	139865.68	140025.28
Cumulative repayment of loan upto previous year	134478.59	136372.66	138231.78	139865.68	140025.28
Net Loan Opening	4799.77	3255.64	1557.87	0.00	0.00
Addition due to additional capital expenditure	349.93	161.35	76.03	159.60	206.28
Repayment of loan during the year	1954.88	1971.06	1685.80	261.33	323.98
Less: Repayment adjustment on account of de-capitalization	60.81	111.94	51.90	101.73	117.70
Net Repayment of loan during the year	1894.07	1859.12	1633.90	159.60	206.28
Net Loan Closing	3255.64	1557.87	0.00	0.00	0.00
Average Loan	4027.70	2406.75	778.93	0.00	0.00
Weighted Average Rate of Interest of loan	7.9200%	7.9200%	7.9200%	7.9200%	7.9200%
<b>Interest on Loan</b>	<b>318.99</b>	<b>190.61</b>	<b>61.69</b>	<b>0.00</b>	<b>0.00</b>

### **Depreciation**

84. Regulation 33 of the 2019 Tariff Regulations provides as under:

*“33. Depreciation:*





(1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system or element thereof including communication system. 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:

*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 a 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 the salvage value for IT equipment and software shall be considered as NIL and 100% value of the assets shall be considered depreciable;*

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

*Provided also 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 unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life or 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-I 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 1.4.2019 shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to 31.3.2019 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 five years before the completion of



*useful life of the project along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure.*

*(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.”*

85. Accordingly, the cumulative depreciation amounting to Rs. 131916.35 lakh as on 31.3.2019, has been considered for the purpose of tariff. COD of the generating station is 31.3.2004. The project has completed 12 years of commercial operation and the remaining depreciable value has been spread over the balance useful life of the generating station. In terms of the 2014 Tariff Regulations, the useful life of a hydro generating station was 35 years. However, the 2019 Tariff Regulations stipulates that the useful life of a hydro generating station is 40 years. Accordingly, the balance useful life of the generating station as on 1.4.2019 has been considered as 25.00 years in line with the 2019 Tariff Regulations. Accordingly, depreciation has been computed as under:

	<b>(Rs. in lakh)</b>				
	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Opening Gross block (A)	201152.49	201651.56	201880.48	201988.38	202214.98
Net Additional capital expenditure during 2019-24 (B)	499.07	228.93	107.89	226.60	293.09
Closing gross block (C=A+B)	201651.56	201880.48	201988.38	202214.98	202508.06
Average gross block (D)=(A+C)/2	201402.02	201766.02	201934.43	202101.68	202361.52
Freehold Land Value (L)	609.48	609.48	609.48	609.48	609.48
Land under Reservoir (R)	83.43	83.43	83.43	83.43	83.43
Depreciable Value (E)=(D-(L-R)) *90%)	180788.38	181115.97	181267.54	181418.06	181651.92
Remaining Depreciable Value at the beginning of the year (F=E- Cum Dep at 'K' at the end of previous year)	48872.03	47305.56	45598.00	43817.90	42161.77
Balance useful Life (G)	25.00	24.00	23.00	22.00	21.00
<b>Depreciation (H=F/G)</b>	<b>1954.88</b>	<b>1971.06</b>	<b>1982.52</b>	<b>1991.72</b>	<b>2007.70</b>
Cumulative Depreciation at the end of the year (I=H+ Cum Dep at 'K' at the end of previous year)	133871.23	135781.48	137652.06	139591.88	141497.86



Adjustment on account of decapitalization (J)	60.81	111.94	51.90	101.73	117.70
Cumulative Depreciation at the end of the year (K=I-J)	133810.42	135669.54	137600.16	139490.15	141380.16

### **Operation & Maintenance Expenses**

86. The Petitioner has claimed the following additional O&M Expenses:

<i>(Rs. in lakh)</i>					
Period	2019-20	2020-21	2021-22	2022-23	2023-24
Normative O&M expenses as per Regulation 35(3)(a) (A)	10670.68	11179.30	11712.17	12270.44	12855.31
Additional O&M expenses due to 7 <sup>th</sup> Pay Commission wage revision- 3rd PRC applicable to CPSUs (B)	1364.02	1429.08	1497.25	1568.67	1643.49
Additional O&M expenses due to 7 <sup>th</sup> Pay Commission wage Revision of Kendriya Vidyalaya (KV) Staff (C)	19.80	20.74	21.73	22.77	23.85
Impact of Goods & Service Tax (D)	138.25	144.84	151.75	158.99	166.57
<b>Total O&amp;M Expenses claimed (A+B+C+D+E)</b>	<b>12192.74</b>	<b>12753.22</b>	<b>13361.17</b>	<b>13998.09</b>	<b>14665.37</b>
Security Expenses (E)	1224.09	1282.48	1343.66	1407.75	1474.90

87. Regulation 35(2)(a) of the 2019 Tariff Regulations provides as under:

*(2) Hydro Generating Station: (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 1.4.2019:*

Particulars	2019-20	2022-21	2021-22	2022-23	2023-24
Chamera II	10670.68	11179.30	11712.17	12270.44	12855.31

*Note: The impact in respect of revision of minimum wage, pay revision and GST, if any, will be considered at the time of determination of tariff.*

xxxxxx"

88. The generating station is in operation for more than 20 years, as on 1.4.2019.

As the normative O&M expenses claimed above by the Petitioner are in terms of Regulation 35(2)(a) of the 2019 Tariff Regulations, the same is allowed.

### **Additional O&M Expenses**



### ***Impact of wage revision***

89. The Petitioner has claimed additional O&M expenses on account of the impact of wage/ pay revision and GST as under:

<i>(Rs. in lakh)</i>					
<b>Period</b>	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Additional O&M expenses due to 7 <sup>th</sup> Pay Commission wage revision- 3 <sup>rd</sup> PRC applicable to CPSUs (a)	1364.02	1429.08	1497.25	1568.67	1643.49
Additional O&M expenses due to 7 <sup>th</sup> Pay Commission wage Revision of Kendriya Vidyalaya (KV) Staff (b)	19.80	20.74	21.73	22.77	23.85
Impact of Goods & Service Tax (c)	138.25	144.84	151.75	158.99	166.57
Security Expenses (d)	1224.09	1282.48	1343.66	1407.75	1474.90
<b>Total O&amp;M Expenses claimed (a+b+c+d)</b>	<b>2746.16</b>	<b>2877.14</b>	<b>3014.39</b>	<b>3158.18</b>	<b>3308.81</b>

### ***Impact of wage revision due to 3<sup>rd</sup> PRC applicable to CPSUs***

90. The Petitioner has claimed Rs. 1364.02 lakh in 2019-20 as additional O&M expenses due pay revision of the Petitioners' staff, based on impact of pay revision of Petitioners' staff in 2018-19. In this regard, it is pertinent to mention that in Petition No. 236/MP/2019 filed by the Petitioner seeking recovery of the additional O&M expenses for the generating station due to impact of wage/ pay revision for the period period 2014-19, the Commission vide its order dated 10.11.2022 had allowed an amount of Rs. 1301.92 lakh as impact of wage revision in 2018-19. As such, the impact of wage revision in 2019-20 (after escalating @ 4.77% the above amount allowed in 2018-19) works out to Rs. 1364.02 lakh. Accordingly, the claim of the Petitioner for Rs 1364.02 lakh in 2019-20 is considered and is thereafter escalated @4.77% per annum during the relevant years of the period 2019-24 and allowed as additional O&M expenses due to pay revision of the Petitioner's staff as under:

*(Rs. in lakh)*



2019-20	2020-21	2021-22	2022-23	2023-24
1364.02	1429.08	1497.25	1568.67	1643.49

### ***Impact of pay revision of KV staff***

91. As regards the claim of Petitioner towards the impact of pay revision of KV staff, it is pertinent to mention that the Commission in its order dated 10.11.2022 in Petition No. 236/MP/2019 (as stated above) had allowed an amount of Rs.18.90 lakh as impact of wage revision of KV staff in 2018-19. As such, the impact of wage revision in 2019-20 (after escalating @ 4.77% on the above allowed amount in 2018- 19) works out to Rs 19.80 lakh. Accordingly, the claim of the Petitioner for Rs 19.80 lakh in 2019-20 is considered (being same) and the same is thereafter escalated @4.77% per annum for the relevant years of the 2019-24 tariff period and is allowed as additional O&M expenses due to pay revision of KV staff as under:

<i>(Rs. in lakh)</i>				
2019-20	2020-21	2021-22	2022-23	2023-24
19.80	20.74	21.73	22.77	23.85

### **Goods & Service Tax**

92. The Respondent BRPL, has submitted that the Petitioner is seeking the grant of GST without further examination whether the amount provided in the norm-based tariff is adequate or not. Thus, any proposal which has a bearing on the norms can be accepted only if the Petitioner proves that the norms are inadequate to meet the additional expenditure on account of GST. Further the Respondent has pointed out that, details provided by the Petitioner would show that the GST has been claimed by the Petitioner under the Security Services and the operational services. In response the Petitioner submitted that, subsequent to applicability of GST w.e.f. 1.7.2017 (in the state of J&K w.e.f. 8.7.2017), there has been additional impact on account of GST on the O&M Expenses which were fixed by the



commission for the tariff period 2014-19. The Petitioner submitted that, since this is an additional expenditure on account of change in Law i.e., introduction of GST, the Petitioner was unable to meet this expenditure from already allowed O&M Expenses.

93. We have considered the submissions of the parties. The Petitioner has claimed impact of GST for the period 2019-24 on the basis of the actual impact of GST during 2018-19. The Petitioner has submitted the total GST amount of Rs. 208.31 lakh for the period from 1.7.2017 to 31.3.2019, based on actual audited accounts for 21 months (Rs. 76.36 lakh in 2017-18 and Rs.131.95 lakh in 2018-19). On scrutiny of above of the details it is noticed that the claim of Petitioner also includes impact of GST on security expenses. The same can be summarized as shown under:

S. No.	Year	Security Services	Operational Services	Total
1	2017-18	18.19	58.17	76.36
2	2018-19 (till Dec.18)	21.58	69.70	91.28
3	2018-19 (1.1.19 to 31.03.19)	10.97	29.70	40.67
	<b>Total</b>	<b>50.74</b>	<b>157.57</b>	<b>208.31</b>

94. As per Regulation 35(2)(d) of the 2019 Tariff Regulations, Security expenses shall be allowed separately after prudence check. Hence, excluding the security expenses, this works out be Rs. 157.57 lakh as shown in the table above, for the period from 1.7.2017 to 31.3.2019. This has been normalized and an amount of Rs.94.34 lakh has been worked out for 2019-20 (after escalating above amount of Rs.90.04 lakh @ 4.77%). Accordingly, the base value of 2019-20 has been escalated @4.77% and GST impact has been worked out and allowed for the period 2020-24, as per note under Regulation 35(2)(a) of the 2019 Tariff



Regulations as under:

(Rs. in lakh)				
2019-20	2020-21	2021-22	2022-23	2023-24
94.34	98.84	103.55	108.49	113.66

### **Capital Spares**

95. As regards capital spares, the Petitioner has submitted that same will be claimed at the time of truing-up of tariff based on the actual expenses incurred. In view of this, capital spares have not been considered in this order.

### **Security Expenses**

96. Regulation 35(2)(c) of 2019 Tariff Regulations provides as under:

*“(c) The Security Expenses and Capital Spares for hydro generating stations shall be allowed separately after prudence check:*

*Provided further that the generating station shall submit the assessment of the security requirement and estimated expenses, the details of year-wise actual capital spares consumed at the time of truing up with appropriate justification.”*

97. The estimated security expenses claimed by the Petitioner for the period 2019-24 based on security requirement of the generating station is as under:

(Rs. in lakh)				
2019-20	2020-21	2021-22	2022-23	2023-24
1224.09	1282.48	1343.66	1407.75	1474.90

98. The Petitioner has claimed actual security expenses of Rs. 1168.36 lakh in 2018-19 and has escalated the same at the rate of 4.77%. Considering the security requirements of the generating station, we allow the projected security expenses as claimed by the Petitioner for the period 2019-24. The Petitioner is however, directed to submit the actual security expenses incurred, duly audited, at the time of truing up of tariff. Accordingly, the estimated security expenses as claimed by the





Petitioner is allowed.

99. Accordingly, the O&M expenses allowed for the generating station are as under:

(Rs. in lakh)					
Allowed	2019-20	2020-21	2021-22	2022-23	2023-24
Normative O&M expenses (a)	10670.68	11179.30	11712.17	12270.44	12855.31
Additional O&M expenses due to 7 <sup>th</sup> Pay Commission wage Revision- 3rd PRC applicable to CPSUs (b)	1364.02	1429.08	1497.25	1568.67	1643.49
Additional O&M expenses due to 7th Pay Commission wage Revision of Kendriya Vidyalaya (KV) Staff (c)	19.80	20.74	21.73	22.77	23.85
GST (d)	94.34	98.84	103.55	108.49	113.66
<b>Total expenses excl Security (e=a+b+c+d)</b>	<b>12148.83</b>	<b>12727.96</b>	<b>13334.70</b>	<b>13970.36</b>	<b>14636.32</b>
Security Expenses (f)	1224.09	1282.48	1343.66	1407.75	1474.90
<b>Total additional O&amp;M Expenses (g=e+f)</b>	<b>13372.92</b>	<b>14010.44</b>	<b>14678.36</b>	<b>15378.11</b>	<b>16111.22</b>

### **Interest on Working Capital**

100. Sub-section (c) of clause (1) of Regulation 34 of the 2019 Tariff Regulations provides as under:

*“34. Interest on Working Capital: (1) The working capital shall cover*

*(c) For Hydro generating station (Including Pumped Storage Hydro Generating Station) and transmission system:*

*(i) Receivables equivalent to 45 days of annual fixed cost;*

*(ii) Maintenance spares @ 15% of operation and maintenance expense including security expenses; and*

*(iii) Operation and maintenance expenses including security expenses for one month”*

101. Regulation 34(3) of the 2019 Tariff Regulations provides as under:

*“34(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 2019-24 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.” Provided that in*





*case of truing-up, the rate of interest on working capital shall be considered at bank rate as on 1st April of each of the financial year during the tariff period 2019-24.”*

### **Working Capital for Receivables**

102. The Receivable component of working capital has been worked out based on 45 days of fixed cost as under:

<i>(Rs. in lakh)</i>				
<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
3539.30	3612.17	3677.75	3761.97	3863.26

### **Working Capital for Maintenance Spares**

103. Maintenance spares @15% of O&M expenses are worked out and allowed as under:

<i>(Rs. in lakh)</i>				
<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
2005.94	2101.57	2201.75	2306.72	2416.68

### **Working capital for O&M Expenses**

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

<i>(Rs. in lakh)</i>				
<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
1114.41	1167.54	1223.20	1281.51	1342.60

105. In accordance with Regulation 34(3) of the 2019 Tariff Regulations, the rate of interest on working capital considered as 12.05% (i.e. 1 year SBI MCLR of 8.55% as on 01.04.2019 + 350 bps) for the year 2019-20, 11.25% (i.e. 1 year SBI MCLR of 7.75% as on 01.04.2020 + 350 bps) for the year 2020-21, 10.50% (i.e. 1 year SBI MCLR of 7.00% as on 01.04.2021 + 350 bps) for the year 2021-22, 10.50% (i.e. 1 year SBI MCLR of 7.00% as on 01.04.2022 + 350 bps) for the period 2022-23 and 12.00% (i.e. 1 year SBI MCLR of 8.50% as on 01.04.2023 + 350 bps)



for the period 2023-24) . Accordingly, Interest on working capital has been computed as under:

	<i>(Rs. in lakh)</i>				
	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Working capital for O&M expenses (one month)	1114.41	1167.54	1223.20	1281.51	1342.60
Working capital for Maintenance Spares	2005.94	2101.57	2201.75	2306.72	2416.68
Working capital for Receivables	3539.30	3612.17	3677.75	3761.97	3863.26
<b>Total Working capital</b>	<b>6659.65</b>	<b>6881.28</b>	<b>7102.70</b>	<b>7350.20</b>	<b>7622.54</b>
Rate of interest (%)	12.05%	11.25%	10.50%	10.50%	12.00%
<b>Interest on Working capital</b>	<b>802.49</b>	<b>774.14</b>	<b>745.78</b>	<b>771.77</b>	<b>914.70</b>

### **Annual Fixed Charges for the period 2019-24**

106. Based on the above, the annual fixed charges approved for the generating station for the period 2019-24 tariff period is summarized below:

	<i>(Rs. in lakh)</i>				
	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Depreciation	1954.88	1971.06	1982.52	1991.72	2007.70
Interest on loan	318.99	190.61	61.69	0.00	0.00
Return on Equity	12337.05	12352.48	12362.27	12372.15	12387.52
Interest on Working capital	802.49	774.14	745.78	771.77	914.70
O&M Expenses	10670.68	11179.30	11712.17	12270.44	12855.31
Additional O&M expenses	2702.24	2831.14	2966.19	3107.67	3255.91
<b>Total</b>	<b>28786.34</b>	<b>29298.75</b>	<b>29830.62</b>	<b>30513.76</b>	<b>31421.15</b>

*\*All figures under each head have been rounded off. The figure in total column in each year is also rounded off. As such the sum of individual items may not be equal to the arithmetic total of the column.*

107. The annual fixed charges approved as above, is subject to truing up in terms of Regulation 13 of the 2019 Tariff Regulations.

### **Normative Annual Plant Availability Factor (NAPAF)**

108. The Petitioner has claimed NAPAF of 90% in terms of Regulation 50(A)(4) of the 2019 Tariff Regulations.



50. Norms of Operation for Hydro Generating Stations: The norms of operation as given hereunder shall apply to hydro generating station:

(A) Normative Annual Plant Availability Factor (NAPAF): (1) The following normative annual plant availability factor (NAPAF) shall apply to hydro generating station:

(a) Storage and Pondage type plants with head variation between Full Reservoir Level (FRL) and Minimum Draw Down Level (MDDL) of up to 8%, and where plant availability not affected by silt: 90%.

(b) In case of storage and pondage type plants with head variation between full reservoir level and minimum draw down level is more than 8% and when plant availability is not affected by silt, the month wise peaking capability as provided by the project authorities in the DPR (approved by CEA or the State Government) shall form basis of fixation of NAPAF.

(c) Pondage type plants where plant availability is significantly affected by silt: 85%. Run-of-river generating stations: NAPAF to be determined plant-wise, based on 10-day design energy data, moderated by past experience where available/relevant.

Station	Type of Plant	Plant Capacity No. of Units x MW	NAPAF (%)
Chamera	Pondage	3X100	90%

109. Accordingly, the NAPAF of 90% is allowed for the generating station.

### **Design Energy (DE)**

110. The Commission in its order dated 27.1.2012 in Petition No.66/2010 had approved the annual Design Energy (DE) of 1499.89 million units for the period 2009-14 in respect of this generating station. The same DE has been allowed for the period 2014-19 in this order. Accordingly, the DE considered and allowed for the generating station for the period 201-24, as per month-wise details is as under:

Month	Design Energy (MUs)
Apr	188.65
May	212.04
Jun	149.31
July	212.04
Aug	212.04
Sept	152.23
Oct	69.95
Nov	48.98
Dec	39.55
Jan	39.39



Feb	56.43
Mar	119.38
<b>Total</b>	<b>1499.89</b>

111. Accordingly, the DE of 1499.89 MUs has been considered and allowed.

### **Application Fee and Publication Expenses**

112. The Petitioner has sought the reimbursement of fees paid by it for filing the tariff petition and for publication expenses in respect of the same. Accordingly, in terms of the Regulation 70(1) of the 2019 Tariff Regulations, the Petitioner shall be entitled for the reimbursement of filing fees and publication expenses in connection with the present petition, directly from the beneficiaries, on pro-rata basis.

113. Similarly, RLDC fees & charges paid by the Petitioner in terms of the Central Electricity Regulatory Commission (Fees and Charges of Regional Load Dispatch Centre and other related matters) Regulations, 2015, shall be recovered from the beneficiaries. In addition, the Petitioner is entitled recovery of statutory taxes, levies, duties, cess etc. levied by the statutory authorities in accordance with the 2019 Tariff Regulations.

114. Accordingly, the annual fixed charges for 2019-24 period allowed is as under:

	<i>(Rs. in lakh)</i>				
	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Annual Fixed Charges allowed including Security charges	28786.34	29298.75	29830.62	30513.76	31421.15

115. Petition No. 291/GT/2020 is disposed of in terms of the above.

**Sd/-**  
**(Pravas Kumar Singh)**  
**Member**

**Sd/-**  
**(Arun Goyal)**  
**Member**

**Sd/-**  
**(I.S Jha)**  
**Member**

