CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 372/GT/2019

Coram:

Shri P. K Pujari, Chairperson
Shri Arun Goyal, Member
Shri Pravas Kumar Singh, Member

Date of order: 25th March, 2022

IN THE MATTER OF

Petition for truing-up of tariff of Kopili Hydroelectric Project Stage-II (25 MW) for the 2014-19 tariff period, after truing-up exercise

AND

IN THE MATTER OF

North Eastern Electric Power Corporation Limited,
Brookland Compound, Lower New Colony
Shillong-793 003 ... **Petitioner**

Vs

1. Assam Power Distribution Company Limited,
'Bijulee Bhawan', Paltanbazar,
Guwahati-781 001

2. Meghalaya Energy Corporation Limited,
Meter Factory Area, Short Round Road Integrated Office Complex,
Shillong-793 001

3. Tripura State Electricity Corporation Limited,
Bidyut Bhavan, North Banamalipur
Agartala-799 001

4. Power and Electricity Department,
Govt. of Mizoram, P&E Office Complex, Electric Veng,
Aizwal-796 001

5. Electricity Department
Government of Manipur, Keishampat,
Imphal-795 001

6. Department of Power,
Government of Arunachal Pradesh,
Vidyut Bhawan,
Itanagar-791 111

7. Department of Power,
Government of Nagaland,
Kohima-797 001

8. North Eastern Regional Power Committee,
Meghalaya State Housing Finance Co-operative Society Limited Building,
Nongrim Hills,
Shillong-793 003

9. North Eastern Regional Load Despatch Centre,
Dongtieh, Lower Nongrah, Lapalang
Shillong-793 006 **...Respondents**

Parties present:

Shri Munin Choudhury, NEEPCO
Shri Ripunjoy Bhuyan, NEEPCO
Ms. Bornali Deori, NEEPCO
Ms. Elizabeth Pyrbot, NEEPCO

ORDER

This Petition has been filed by the Petitioner, North Eastern Electric Power Corporation Limited (NEEPCO), for revision of tariff of Kopili Hydro Electric Project Stage-II (1 x 25 MW) (hereinafter referred to as 'the generating station') for the period from 1.4.2014 to 31.3.2019 in terms of Regulation 8 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as 'the 2014 Tariff Regulations').

Background

2. The Kopili Hydro Electric Project comprises of three power stations, namely Khandong Power Station (2 x 25 MW), Kopili Power Station (4 x 50 MW) and the

generating station (1 x 25 MW). Initially, the project was of the capacity of 150 MW i.e. (2 x 25 MW) in Khandong Power Station and (2 x 50 MW) in Kopili Power Station. Thereafter, a capacity of (2 x 50 MW) was added to Kopili Power Station as KHEP Stage-I Extension. In addition to this, Stage II i.e. the generating station (1 x 25 MW) was added to the project with date of commissioning as 26.7.2004. The project comprises of two concrete dams, viz, Khandong dam and Umrong dam and two corresponding reservoirs with two separate water conductor systems and two power houses, namely, Khandong power Station and Kopili Power Station. Khandong dam is across the river Kopili, which is a perennial river. Water from this reservoir is diverted through a tunnel of diameter 4.5 meters and length of 2.76 km to the Khandong powerhouse (2 x 25 MW). Umrong dam is across a small tributary of the river Kopili, called Umrong, which has a very less discharge during the lean season. The tail race discharge from Khandong Power Station is diverted to Umrong reservoir through an open channel and water from this reservoir is diverted through a channel of diameter 4.5 meter and a length of 5.5 km to Kopili Power Station (4 x 50 MW) located on the bank of river Kopili on downstream side.

3. The date of commercial operation of the generating station is 26.7.2004. The scope of works of the generating station includes the construction of an additional powerhouse and a by-pass tunnel of 275-meter length. The by-pass tunnel bifurcates from the main tunnel just beyond the surge-shaft for which boring was done at the time of construction of Kopili HEP Stage I.

4. Petition No. 45/GT/2015 was filed by the Petitioner for determination of tariff for the 2014-19 tariff period, and the Commission vide order dated 22.2.2016

approved the capital cost and annual fixed charges for the generating station as under:

Capital Cost allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital cost	8215.32	8402.42	8953.42	8958.42	9471.42
Additional Capital expenditure allowed	187.10	551.00	5.00	513.00	14.00
Capital cost as on 31st March of the year	8402.42	8953.42	8958.42	9471.42	9485.42

Annual Fixed Charges allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	366.44	385.68	400.19	112.10	129.47
Interest on Loan	72.83	63.48	47.73	41.79	46.84
Return on Equity	520.36	543.47	560.88	577.10	593.60
Interest on Working Capital	39.82	41.76	43.39	38.33	40.66
O&M Expenses	321.00	342.33	365.07	389.32	415.19
Total	1320.45	1376.72	1417.26	1158.64	1225.77

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

Capital Cost claimed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	8215.32	8346.96	8353.22	8922.12	8929.33
Add: Addition during the year	180.64	7.69	70.55	7.21	4.54
Less: De-capitalization during the year	49.00	1.43	1.65	0.00	17.00
Add: Discharges during the year	0.00	0.00	0.00	0.00	0.00
Closing Capital Cost	**8346.96**	**8353.22**	**8922.12**	**8929.33**	**9266.87**

Annual Fixed Charges claimed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	364.54	367.57	380.23	100.72	107.99
Interest on Loan	71.36	46.13	32.42	29.34	30.63
Return on Equity	518.63	555.87	543.58	627.31	574.06
Interest on Working Capital	39.70	41.23	42.18	38.94	39.34
O&M Expenses	321.00	342.33	365.07	389.32	415.19
Total	1315.23	1353.13	1363.48	1185.63	1167.21

6. The Respondent No.1 Assam Power Distribution Company (APDCL) has filed its reply vide affidavit dated 5.8.2021 and the Petitioner has filed its rejoinder to the said reply vide affidavits dated 13.8.2021. The matter was heard on 24.8.2021 through virtual mode and the Commission vide Record of the Proceedings directed the Petitioner to file certain additional submission in respect of the generating station and reserved its order in the matter. In compliance, the Petitioner has filed additional submission vide affidavit dated 12.10.2021. Accordingly, based on the submissions and the documents available on record, we proceed to determine the tariff of the generating station for the 2014-19 tariff period as stated in the subsequent paragraphs.

Capital Cost

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

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

(a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;

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

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

Xxx'

8. Clause (3) of Regulation 9 of the 2014 Tariff Regulations provides that the capital cost as determined by the Commission after prudence check in

accordance with this regulation shall form the basis of determination of tariff for existing and new projects. The Commission vide order dated 22.2.2016 in Petition No. 45/GT/2014 had allowed the capital cost of Rs.8215.32 lakh for the generating station as on 31.3.2014. The Petitioner, in this petition, has claimed the opening capital cost of Rs.8215.32 lakh as on 1.4.2014 for the purpose of tariff. Therefore, the same has been allowed in this order and considered as opening admitted capital cost as on 1.4.2014 for the purpose of truing-up of tariff for the 2014-19 tariff period.

Additional capital expenditure for the 2014-19 tariff period

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

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

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

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

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

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

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

(vi) Any liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;

(vii) Any additional capital expenditure which has become necessary for efficient operation of generating station other than coal / lignite-based stations or transmission system as the case may be. The claim shall be substantiated with the technical justification duly supported by the documentary evidence like test results carried out by an independent agency in case of deterioration of assets, report of an independent agency in case of damage caused by natural calamities, obsolescence of technology, up-gradation of capacity for the technical reason such as increase in fault level;

(viii) In case of hydro generating stations, any expenditure which has become

necessary on account of damage caused by natural calamities (but not due to flooding of powerhouse attributable to the negligence of the generating company) and due to geological reasons after adjusting the proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation;

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

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

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

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

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Closing Gross Block	9055.24	9063.70	9635.17	9642.38	10005.63
Less: Opening Gross Block	8921.60	9055.24	9063.70	9635.17	9642.38
Total Additions as per books	133.64	8.46	571.47	7.21	363.25
Less: Additions pertaining to other Stages (give Stage wise breakup)	0.00	0.00	0.00	0.00	0.00
Net Additions pertaining to the project/Unit/Stage	133.64	8.46	571.47	7.21	363.25
Less: Exclusions (items not allowable / not claimed)	0.00	0.00	0.00	0.00	0.00
Less: Adjustment entries as per addition schedules of different years	2.00	2.20	2.57	0.00	25.71
Net Additional Capital Expenditure Claimed	131.64	6.26	568.90	7.21	337.54

11. The break-up of the actual additional capital expenditure claimed by the Petitioner during 2014-19 tariff period is as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Add: Addition during the year / period	180.64	7.69	570.55	7.21	354.54	1120.63
Less: De-capitalization during the year / period	49.00	1.43	1.65	0.00	17.00	69.08
Net Additional capitalization during the year	131.64	6.26	568.90	7.21	337.54	1051.55

12. It is noticed that the Petitioner has not indicated the provision of the Regulation under which the additional capital expenditure has been claimed for the Tariff Period 2014-19. It is further noticed that most of the additional capital expenditure claimed by the Petitioner such as Voith make butterfly type main inlet valve, Butterfly type main inlet valve, Flow reversal system against Kopili Stage-II, RGMO implementation in electronic panels of EHGC, Plant & Machinery in generating station-Supply Delivery & Commissioning of m24v Exide make battery bank at Stage-II, Plant & Machinery in generating station-Exide make 220v 350 Ah plate, Close loop cooling water system, Plant & Machinery in generating station-Major overhauling works & repairing of Stage-II Unit, Plant & Machinery in generating station-Supply of one set of Pivot Ring & Top Cover etc., had already been admitted by the Commission in its earlier tariff orders of the generating station. In addition, the Petitioner has also claimed additional capital expenditure for new assets/works such as Free-hold Land Plant/ Office, Cu:Ni tubes for stage-II GT size 9.5mm ODx8.22mm ID x 1498mk long, 0.64mm thick, Up-gradation of HMI System of Turbine Generator, loctite nordback pnue-wear, loctite fixmaster wear resistance putty and application of loclite coating of underwater parts. The Respondent APDCL in its reply has submitted that the

Commission may carry out prudence check of the claims of the Petitioner. Based on the submissions of the parties and documents available on record, additional capital expenditure for the 2014-19 tariff period is being dealt in the subsequent paragraphs.

2014-15

(Rs. in lakh)

<table>
<tr><th>Sl. No.</th><th>Assets/Works</th><th>Amount claimed</th><th>Amount Allowed</th><th>Remarks on admissibility</th></tr>
<tr><td>1</td><td>Free hold Land Plant/ Office</td><td>1.16</td><td>0.00</td><td>The Petitioner has submitted that the expenditure has been claimed as rectification entry against less booking made at the time of segregation of total land value of the generating station. The Petitioner has, however, not furnished any linkage of the claim from previous orders and has also not clarified as to whether the amount claimed form part of the capital base of the generating station. In view of this, additional capital expenditure claimed by the Petitioner is not allowed.</td></tr>
<tr><td>2</td><td>Plant & Machinery in Generating station - Supply of one set of Pivot Ring & Top Cover</td><td>165.49</td><td>165.49</td><td rowspan="2">The Petitioner has submitted that it was necessary to replace all MS under water parts expenditure, due to the acidic nature of reservoir water, with SS material. Accordingly, order was placed with M/s BHEL for supply of pivot ring & top cover & M/s Hydro Magus Pvt. Limited for work execution and the price of supply is on higher side, but the total expenditure is Rs.179.48 lakh.

It is noticed that the Commission vide its order dated 22.2.2016 in Petition No. 45/GT/2015 had allowed the projected additional capital expenditure under this head for Rs.170.94 lakh and Rs.86.16 lakh in year 2014-15, under Regulation 14(3)(viii) of the 2014 Tariff Regulations on account of the operational difficulties faced by the Petitioner due to acidic nature of water. On the same grounds, the additional capital expenditure of Rs.165.49 lakh and Rs.13.99 lakh is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations.</td></tr>
<tr><td>3</td><td>Plant & Machinery in Generating station - Major overhauling works & repairing of Stage II Unit</td><td>13.99</td><td>13.99</td></tr>
</table>

Sl. No.	Assets/Works	Amount claimed	Amount Allowed	Remarks on admissibility
				Further, the Petitioner has also claimed decapitalization of the old assets. As such the gross value of de-capitalized assets claimed, has been considered under 'De-capitalization' in paragraph 19 below.
	Total amount Claimed	**180.64**		
	Total amount Allowed		**179.48**	

13. Accordingly, the total additional capital expenditure allowed in 2014-15 is Rs.179.48 lakh.

2015-16

(Rs. in lakh)

Sl. No.	Assets/Works	Amount claimed	Amount Allowed	Remarks on admissibility
1	Transformer having a rating of 100 amp & above. Replacement of 70:30 CU:NI cooler tubes for GT	2.20	2.20	The Petitioner has submitted that the item has been claimed as the Kopili reservoir is having pH value below 4. The generator transformer supplied by M/s Bharat Bijlee Limited was equipped with 90:10 Cu:Ni cooler tube. Due to acidic corrosion, the failure of Cu:Ni tube will lead to water ingress to the transformer oil and fail the transformer as well as complete generation outage of the plant for long period. This will lead to huge financial loss in terms of GT and generation loss. So, to provide uninterrupted power to the beneficiary, precautions was taken to replace the cooler tubes with 70:30 Cu:Ni tubes which is special requirement due to acidic water and thus not considered as normal O&M activity as the plant was commissioned in 2003-04 only. The Commission vide order dated 23.1.2012 in Petition No. 298/2009 has allowed the projected additional

Sl. No.	Assets/Works	Amount claimed	Amount Allowed	Remarks on admissibility
				capital expenditure claimed under this head for a sum of Rs.25.00 lakh in 2010-11 under Regulation 9(2)(iv) of the 2009 Tariff Regulations on grounds of damage caused due to acidic nature of water. Considering the fact that the asset is necessary for the efficient operation of the generating station, the additional capital expenditure of Rs.2.20 lakh is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. Further, the Petitioner has also claimed decapitalization of the old assets. As such the gross value of de-capitalized assets, claimed, has been considered under 'De-capitalization' in paragraph 19 below.
2	Up-gradation of HMI System of Turbine Generator	5.49	5.49	The Petitioner has submitted that the item has been claimed as per IEGC regulation 2010, clause 5.2(f), restricted governor mode of operation is required for hydro unit 10MW and above. The unit electronic governor system is BHEL supplied pro-control based. The programs are in HEX code and SK06 kit was earlier used for coding. But due to non-availability of coding kit, new Progress-3 kit was procured from M/s ABB and successfully implemented RGMO logic as per IEGC. The expenditure was not initially projected but after several visit of BHEL, they failed to implement RGMO with SK06 kit and thus to support the grid in any emergency situation, expenditure made for implementation of RGMO logic. Considering that the asset/work is necessary for the safe and efficient operation of the

Sl. No.	Assets/Works	Amount claimed	Amount Allowed	Remarks on admissibility
				generating station, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations.
	Total amount Claimed	**7.69**		
	Total amount Allowed		**7.69**	

14. Accordingly, the total additional capital expenditure allowed in 2015-16 is Rs.7.69 lakh.

2016-17

(Rs. in lakh)

Sl. No.	Assets/Works	Amount Claimed	Amount Allowed	Remarks on admissibility
1	Main plant building (khandong kopili) Water tank	6.22	0.00	The Petitioner has not submitted any justification with regard to the expenditure claimed. Considering the fact that the said asset is minor in nature, the expenditure is **not allowed.**
2	Close loop Cooling water system	490.27	490.27	It is noticed that the Commission vide its order dated 22.2.2016 in Petition No. 45/GT/2015 had allowed the projected additional capital expenditure for Rs.530.00 lakh in 2015-16 under Regulation 14(3)(viii) of the 2014 Tariff Regulations, on account of the operational difficulties faced by the Petitioner due to acidic nature of water. On the same grounds, the additional capital expenditure of Rs.490.27 lakh is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations.
3	Exide make 220v, 350 Ah plate	58.49	58.49	It is noticed that the Commission vide order dated 22.2.2016 in Petition No. 45/GT/2015 had allowed the projected additional capital expenditure for Rs.30.00 lakh in 2015-16 for this asset under Regulation 14(3)(viii) of the 2014 Tariff Regulations on replacement basis on the ground that the asset is necessary for safe and efficient operation of the plant. It is noticed that the Petitioner has claimed the asset /work for capacity of 350 Ah, which was earlier allowed for a

Sl. No.	Assets/Works	Amount Claimed	Amount Allowed	Remarks on admissibility
				capacity of 300 Ah. However, keeping in view that the asset is necessary for efficient operation of the plant, the additional capital expenditure of Rs. 58.49 lakh is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations**.** Further, the Petitioner has also claimed decapitalization of the old assets. As such the gross value of de-capitalized assets, claimed, has been considered under 'De-capitalization' in paragraph 19 below.
4	Cu:Ni tubes for stage-II GT size 9.5mm odx8.22mm id x 1498mk long, 0.64mm thick	5.60	5.60	The Petitioner has submitted that the Kopili reservoir is having pH value below 4. The generator transformer supplied by M/s Bharat Bijlee Limited was equipped with 90:10 Cu:Ni cooler tube. As such due to acidic corrosion, the failure of Cu:Ni tube will lead to water ingress to the transformer oil and fail the transformer as well as complete generation outage of the plant for long period. This will lead to huge financial loss in terms of GT and generation loss. So, to provide uninterrupted power to the beneficiary, as a precaution decision was taken to replace the cooler tubes with 70:30 Cu:Ni tubes which is a special requirement due to acidic water and thus not considered as normal O&M activity. Considering the fact that the assets/works are necessary for the safe and efficient operation of the generating station the additional capital expenditure claimed is **allowed** under 14(3)(viii) of the 2014 Regulations.
5	Loctite nordback pnue wear, loctite fixmaster wear resistance putty	8.72	0.00	The Petitioner has submitted that due to acidic water of the reservoir, all underwater components as well as equipment coming in direct contact with water eroded severely resulting in generation outage as well as threat for flooding. All the replaceable components are being gradually replaced with stainless steel material
6	Application of loctite coating of under parts	1.26	0.00	

Sl. No.	Assets/Works	Amount Claimed	Amount Allowed	Remarks on admissibility
				but the embedded parts like spiral casing, stay vanes etc. are non-replaceable. Further, to protect these items from further damage and long outage of the plant, anti-corrosive coating is required to be applied periodically. As this type of coating is not a normal requirement in any hydro plant but considering acidic water, it is a special requirement which is not considered as normal O&M activity for which specialized product and manpower is required. This coating also proves extended life of such embedded components and outage is nil in these areas till date. Considering the fact that the expenditure is in the nature of O&M expenses, the same is **not allowed.**
	Total Amount Claimed	**570.55**		
	Total Amount Allowed		**554.36**	

15. Accordingly, the total additional capital expenditure allowed in 2016-17 is Rs.554.36 lakh.

2017-18

(Rs. in lakh)

Sl. No.	Assets/Works	Amount Claimed	Amount Allowed	Remarks on admissibility
1	Plant & Machinery in Generating station - Supply deliver & commission of m24v Exide make battery bank at Stage II	7.21	7.21	The Petitioner has submitted that the expenditure has been incurred for the purpose of upgradation of battery bank. It is noticed that the Commission vide order dated 22.2.2016 in Petition No. 45/GT/2015 had allowed the projected additional capital expenditure for Rs.14.00 lakh in 2018-19, under Regulation 14(3)(viii) of the 2014 Tariff Regulations on replacement basis and on grounds that the asset is necessary for safe and efficient operation of the plant. In line with this decision, the additional capital expenditure of Rs.7.21 lakh is **allowed** under Regulation 14(3)(viii)

				of the 2014 Tariff Regulations.
	Total Amount Claimed	**7.21**		
	Total Amount Allowed		**7.21**	

16. Accordingly, the total additional capital expenditure allowed in 2017-18 is Rs.7.21 lakh.

2018-19

(Rs. in lakh)

Sl. No.	Assets/Works	Amount claimed	Amount Allowed	Remarks on admissibility
1	Close loop cooling water system	10.80	10.80	The Petitioner has submitted that the expenditure has been incurred for the purpose of closed loop cooling water system which has successfully solved the issue of cooler failures and machine reliability has increased and outages due to cooling failure has been minimized. It is noticed that the Commission vide order dated 22.2.2016 in Petition No. 45/GT/2015 had allowed the projected additional capital expenditure for Rs. 530.00 in year 2015-16, under Regulation 14(3)(viii) of the 2014 Tariff Regulations on account of operational difficulties faced by the Petitioner due to acidic nature of water. It is further noticed that an amount of Rs.490.27 lakh has been allowed for this asset in 2016-17 in this order. In view of this, the additional capital expenditure of Rs.10.80 lakh is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations.
2	Order for RGMO implementation in the electronic panels of EHGC	8.71	8.71	The Petitioner has submitted that the expenditure has been incurred as per new grid standards wherein all hydro governors need to be upgraded to RGMO/FGMO enabled mode. As per Clause 5.2(f) of the IEGC Regulation 2010, Restricted Governor Mode of Operation i(RGMO) s required for hydro unit 10 MW, which allows more stability to grid parameters. Therefore, RGMO was implemented in line with the statutory requirement. It is noticed that

Sl. No.	Assets/Works	Amount claimed	Amount Allowed	Remarks on admissibility
				the Commission vide order dated 22.2.2016 in Petition No. 45/GT/2015 had allowed the projected additional capital expenditure for Rs.7.00 lakh in year 2014-15, under Regulation 14(3)(ii) of the 2014 Tariff Regulations on the ground that the same is required for regulatory compliance under change in law and to facilitate the successful and efficient operation of plant. In line with this decision, the additional capital expenditure of Rs.8.71 lakh claimed is **allowed** under Regulation 14(3)(ii) of the 2014 Tariff Regulations.
3	Flow Reversal system against Kopili Stage-II	14.81	14.81	The Petitioner has submitted that the expenditure has been incurred for the purpose of the flow reversal system integration with closed loop cooling water system. It is noticed that the Commission vide order dated 22.2.2016 in Petition No. 45/GT/2015 had allowed the projected additional capital expenditure for Rs.5.00 lakh in year 2017-18 under Regulation 14(3)(viii) of the 2014 Tariff Regulations on the grounds that the said asset is necessary for the safe and efficient operation of the plant. In line with this decision, the additional capital expenditure of Rs.14.81 lakh is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations.
4	Voith make butterfly type Main inlet Valve	283.79	283.79	The Petitioner has submitted that the expenditure has been incurred for the purpose of Replacement of MIV with new one made of SS for Kopili Stage II machine. It is noticed that the Commission vide order dated 22.2.2016 in Petition No. 45/GT/2015 had allowed the expenditure under this head for Rs.600.00 lakh in 2017-18 on the ground that the said asset is necessary for the safe and efficient operation of the plant. In line with this decision, the additional capital expenditure of Rs.320.22 lakh (Rs.283.79 lakh + Rs.36.43 lakh) are **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations.
5	Installation of butterfly type Main inlet Valve	36.43	36.43	

Sl. No.	Assets/Works	Amount claimed	Amount Allowed	Remarks on admissibility
	Total Amount Claimed	**354.54**		
	Total Amount Allowed		**354.54**	

17. Accordingly, the total additional capital expenditure allowed in 2018-19 is Rs.354.54 lakh.

Decapitalization

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

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

19. The Petitioner has claimed de-capitalization of assets such as SS top cover & Pivot Ring. Replacement with new SS top Cover & Pivot Ring, Replacement with CN2T with thermal release & electric motor Replacement by new Oil Cooler Tubes 70:30 CU:NI, Plant & Machinery in generating station etc. Since the assets are not in use/unserviceable, the claim of the Petitioner for de-capitalization of the above said amounts in terms of the said regulation, is allowed, as under:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
49.00	1.43	1.65	0.00	17.00

Assumed Deletions

20. As per consistent methodology adopted by the Commission, the expenditure on replacement of assets, if found justified, is allowed for the purpose of tariff, provided that the capitalization of the said asset is followed by de-capitalization of

the original value of the old asset. However, in certain cases where de-capitalization 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 the absence of the gross value of the asset being de-capitalized, the same is calculated by de-escalating the gross value of new asset @ 5% per annum till the year of capitalization of the old asset.

21. It is observed that the Petitioner has claimed the asset/work i.e. Exide make 220v, 350 Ah plate for Rs.58.49 lakh in 2016-17 on replacement basis. However, the Petitioner in this Petition has not provided the de-capitalization value of the old asset/work which is being replaced. Accordingly, based on above methodology, the assumed deletion considered for this asset is Rs.31.02 lakh in 2016-17.

Net Additional capital expenditure allowed

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

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Total additions allowed	179.48	7.69	554.36	7.21	354.54
Less: De- capitalization allowed	49.00	1.43	1.65	0.00	17.00
Less: Assumed Deletion	0.00	0.00	31.02	0.00	0.00
Additional capital expenditure allowed (Net)	**130.48**	**6.26**	**521.69**	**7.21**	**337.54**

Capital Cost allowed for the 2014-19 tariff period

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

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	8215.32	8345.80	8352.06	8873.75	8880.96
Additional capital expenditure allowed (Net)	130.48	6.26	521.69	7.21	337.54
Closing Capital Cost	8345.80	8352.06	8873.75	8880.96	9218.50

Debt: Equity ratio

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

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

(i) where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:
(ii) the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:
(iii) any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt-equity ratio.

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

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

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

(4) In case of generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2014, the Commission shall

approve the debt: equity ration based on actual information provided by the generating company or the transmission licensee as the case may be.

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

25. The gross normative loan and equity amounting to Rs.5750.73 lakh and Rs.2464.59 lakh respectively on 31.3.2014 as considered by the Commission vide order dated 22.2.2016 in Petition No. 45/GT/2015 has been considered as the opening normative loan and equity as on 1.4.2014. Further, the normative debt equity ratio of 70:30 has been considered for admitted additional capital expenditure. The opening and closing debt and equity for the 2014-19 tariff period is as under:

(Rs. in lakh)

Asset	As on 1.4.2014		Net Additional Capitalization during 2014-19		As on 31.3.2019	
	Amount	**%**	**Amount**	**%**	**Amount**	**%**
Debt	5750.73	70.00%	702.22	70.00%	6452.95	70.00%
Equity	2464.59	30.00%	300.95	30.00%	2765.54	30.00%
Total	**8215.32**	**100.00%**	**1003.18**	**100.00%**	**9218.50**	**100.00%**

Return on Equity

26. 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."

27. 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."

28. The base rate of return on equity as allowed in terms of Regulation 24 of the 2014 Tariff Regulations is required to be grossed up with the effective tax rate of the respective financial years. Also, in term of Regulation 25(3) of the 2014 Tariff Regulations, 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 period from 2014-15 to 2018-19, on actual gross income of any financial year. For the purpose of tax rate, for grossing up of rate of RoE, the Commission vide ROP for the hearing dated 27.7.2020, had specified a format and directed the Petitioner to submit details with tax audit report for each year of the tariff period. The Petitioner vide affidavit dated 18.8.2020 has submitted the format, duly certified by Chartered Accountant. In order dated 7.6.2021 in Petition No. 273/GT/2019 (truing-up of tariff of Ranganadi HEP of the Petitioner for the 2014-19 tariff period) the tax rate considered was as under:

Year	Effective Tax rate
2014-15	20.2521%
2015-16	25.9099%
2016-17	34.6080%
2017-18	27.3764%
2018-19	21.5488%

29. Since effective tax rate is 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, the tax rate as worked out and allowed in order dated 7.6.2021 in Petition No. 273/GT/2019, has been considered for the computation of ROE for this generating station, as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Notional Equity- Opening (A)	2464.59	2503.73	2505.61	2662.12	2664.28
Addition of Equity due to additional capital expenditure (B)	39.14	1.88	156.51	2.16	101.26
Normative Equity- Closing (C) =(A) + (B)	2503.73	2505.61	2662.12	2664.28	2765.54
Average Normative Equity (D) = [(A+C)/2]	2484.16	2504.67	2583.87	2663.20	2714.91
Return on Equity (Base Rate) (E)	16.500%	16.50%	16.50%	16.50%	16.50%
Effective Tax Rate for the year (F)	20.252%	25.910%	34.608%	27.376%	21.549%

	2014-15	2015-16	2016-17	2017-18	2018-19
Rate of Return on Equity (Pre-Tax) (G) = [(E)/(1-F)]	20.690%	22.270%	25.232%	22.720%	21.032%
Return on Equity (H) = (D)*(G)	**513.97**	**557.79**	**651.96**	**605.08**	**571.00**

Interest on Loan

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

*"**26. Interest on loan capital:** (1) The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.*
(2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.
(3) The repayment for each of the year of the tariff 2014-19 tariff period shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-capitalization of such asset.
(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.
(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:

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

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

(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.
(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.
(8) The changes to the terms and conditions of the loans shall be reflected from the date of such refinancing.
(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory reenactment thereof for settlement of the dispute:

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

31. The actual loan pertaining to the generating station has already been repaid. Weighted average rate of interest @ 7.94% as considered in order dated 18.9.2015 in Petition No. 455/GT/2014 has been considered in this order.

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

(i) The opening gross normative loan of Rs. 5750.73 lakh as on 1.4.2014 has been arrived at in accordance with Regulation 26 of the 2014 Tariff Regulations.

(ii) Cumulative repayment amounting to Rs.4715.79 lakh as on 31.3.2014 as considered in order dated 22.2.2016 in Petition No. 45/GT/2015 has been considered as on 1.4.2014;

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

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

(iv) Interest on loan has been calculated on the normative average loan of the year by applying the weighted average rate of interest.

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

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Gross opening loan (A)	5750.73	5842.06	5846.45	6211.63	6216.68
Cumulative repayment of loan up to previous year (B)	4715.79	5055.21	5421.33	5799.83	5898.95
Net Loan Opening (C) = [(A) - (B)]	1034.94	786.85	425.12	411.80	317.73
Addition due to additional capital expenditure (D)	91.33	4.38	365.18	5.05	236.28
Repayment of loan during the year (E)	363.89	366.89	378.50	99.12	106.40
Less: Repayment adjustment on a/c of de-capitalization (F)	24.47	0.77	0.00	0.00	10.37
Repayment of Loan during the period (Net) (H) = [(E) – (F)]	339.42	366.12	378.50	99.12	96.02
Net Loan Closing (I) = [(C)+(D)–(H)]	786.85	425.12	411.80	317.73	457.98
Average Loan (J) = [(C+I)/2]	910.90	605.98	418.46	364.77	387.86
Weighted Average Rate of Interest of loan (K)	7.94%	7.94%	7.94%	7.94%	7.94%
Interest on Loan (L) = [(J)*(K)]	72.33	48.12	33.23	28.96	30.80

Depreciation

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

> *"27. Depreciation: (1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof.*
>
> *Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.*
>
> *(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.*
>
> *(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:*
>
> > *Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:*
> >
> > *Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long term power purchase agreement at regulated tariff:*
> >
> > *Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case maybe, shall not be allowed to be recovered at a later stage during the useful life and the extended life.*
>
> *(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.*
>
> *(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-II to these regulations for the assets of the generating station and transmission system:*
>
> *Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.*
>
> *(6) In case of the existing projects, the balance depreciable value as on1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the*

Commission up to 31.3.2014 from the gross depreciable value of the assets.

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

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

35. Cumulative depreciation amounting to Rs.4693.27 lakh as on 1.4.2014, as approved by order dated 22.2.2016 in Petition No. 45/GT/2015 has been considered for the purpose of tariff. The COD of the generating station is 26.7.2004. Since the generating station has completed 12 years of commercial operation during the year 2016-17, the weighted average rate of depreciation has been considered for calculation of depreciation during the period from 2014-15 to 2016-17. The remaining depreciable value has been spread over the balance useful life of the generating station from the year 2017-18 onwards. Accordingly, depreciation has been worked out as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Average gross block (A)	8280.56	8348.93	8612.90	8877.35	9049.73
Weighted Average Rate of Depreciation (WAROD) (B)	4.39%	4.39%	4.39%	*1.12%	*1.18%
Balance Useful Life (C)	25.32	24.32	23.32	22.32	21.32
Depreciable Value (D) = [(A) * 90%]	7452.50	7514.03	7751.61	7989.62	8144.76
Remaining Depreciable Value (E)	2759.23	2481.34	2352.80	2212.31	2268.33
Depreciation (F) = [(A) * (B)]	**363.89**	**366.89**	**378.50**	****99.12**	****106.40**
Cumulative Depreciation (at the end of the period) (G)	5057.16	5399.59	5777.31	5876.43	5982.82
Cumulative Depreciation reduction due to decapitalization (H)	24.47	0.77	0.00	0.00	10.37
Cumulative Depreciation after adjustment due to decapitalization (at the end	5032.69	5398.81	5777.31	5876.43	5972.45

	2014-15	2015-16	2016-17	2017-18	2018-19
of the period) (I) = (G-H)					

** WAROD is derived from ((F) / (A))*
*** Depreciation is derived from ((E) / (C))*

O&M Expenses

36. The Petitioner has claimed normative O&M expenses along with the impact of wage revision as additional O&M expenses. As regards normative O&M expenses Regulation 29(3)(a) of the 2014 Tariff Regulations provides as under:

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

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
321.00	342.33	365.07	389.32	415.19

37. The Petitioner, in Petition No. 45/GT/2015, had claimed O&M expenses for the 2014-19 tariff period in terms of Regulation 29(3)(a) of the 2014 Tariff Regulations and the same was allowed vide order dated 22.12.2016. Since the claim of the Petitioner, in the present petition, is in terms of Regulation 29(3)(a) of the 2014 Tariff Regulations, the same is allowed.

Additional O&M Expenditure on account of Pay revision

38. The Petitioner has claimed an amount of Rs.153.88 lakh as additional O&M expenses, on account of wage revision of its employees and for Meghalaya Home Guards for the period from 1.1.2017 to 31.3.2019 and have provided audited statement for the same. However, the Petitioner vide affidavit dated 12.10.2021 has revised the claim to Rs.155.04 lakh and has also submitted auditor certificate for the same. The Petitioner has prayed that the

additional O&M expenses claimed may be allowed to be recovered from the Respondents as a one-time payment under provisions of Regulation 54 (Powers to Relax) and Regulation 55 (Powers to Remove Difficulties) of the 2014 Tariff Regulations. The details of the impact of wage revision as claimed by the Petitioner vide affidavit dated 12.10.2021 are as under:

(Rs. in lakh)

		2016-17		**2017-18**		**2018-19**		**Total**
		Salary	**Leave Encashment**	**Salary**	**Leave Encashment**	**Salary**	**Leave Encashment**	
1.	**Impact of wage revision – NEEPCO Employees**							
(i)	Employees cost before pay revision (w.e.f 1.1.2017)	340.23	29.00	324.03	51.00	301.03	30.00	1075.29
(ii)	Employees cost after pay revision (w.e.f. 1.1.2017)	363.06	30.95	389.81	61.35	347.36	34.62	1227.15
A	Impact of wage revision [(ii)-(i)]	22.83	1.95	65.79	10.35	46.32	4.62	151.86
2.	**Impact of wage revision – Meghalaya Home Guards (MLHG)**							
(i)	Employees cost before pay revision (w.e.f. 1.1.2017)	8.19	0.00	7.75	0.00	0.00	0.00	15.94
(ii)	Employees cost after pay revision (w.e.f. 1.1.2017)	9.69	0.00	9.43	0.00	0.00	0.00	19.12
B	Impact of wage revision [(ii)-(i)]	1.50	0.00	1.68	0.00	0.00	0.00	3.18
	Total Impact of wage revision	**24.33**	**1.95**	**67.47**	**10.35**	**46.32**	**4.62**	**155.04**

	(A+B)							
	Total Impact of wage revision	**26.28**		**77.82**		**50.94**		**155.04**

39. The Respondent, APDCL has submitted that the claim of the Petitioner for reimbursement of wage revision of employees and for Home Guards under Regulation 54 and Regulation 55 of the 2014 Tariff Regulations cannot be allowed, as the Petitioner should file a separate Petition with legal grounds to claim the same. Further, the Respondent APDCL has submitted that the submission of the Petitioner is to claim the whole amount only from APDCL is arbitrary and unjustified. The Petitioner in its rejoinder has submitted that the normative O&M expenses specified under the 2014 Tariff Regulations do not cover the additional expenses due to wage revision, which the Petitioner had to incur and the only available recourse available to the Petitioner to remove the difficulties faced by it for recovery of these additional expenses from the Respondents, as a onetime measure under provisions of Regulation 54 (Powers to Relax) and Regulation 55 (Powers to Remove Difficulties) of the 2014 Tariff Regulations. The Petitioner has further submitted that the "Respondent No.1" may be read as "Respondent No.1 to 7", as it was erroneously mentioned, in relation to the revision of wages of its employees and Meghalaya Home Guards during the period 1.1.2017 to 31.3.2019, as additional expenses, in the Petition as well as in the prayer.

40. As regards the claim of the Petitioner for additional O&M expenses on account of wage revision from 1.1.2017 to 31.3.2019, the Commission vide ROP of the hearing dated 24.8.2021, directed the Petitioner to submit the following details:

*"(i) Breakup of the actual O&M expenses of the generating station for the 2014-19 tariff period, under various subheads (as per **Annexure-A** enclosed) after including the pay revision impact (employees, and Meghalaya Home Guards) (in both MS Excel and PDF format);*

*(ii)Break-up of the actual O&M expenses of Corporate Centre/other offices including pay revision impact (as per **Annexure-B** enclosed) of the generating station for the along with the allocation of total O&M expenses to the various generating stations which are under construction, operational stations and any other offices/business activity along with basis of allocating such expenditure (in both MS Excel and PDF format);*

*(iii)Break-up of the pay revision impact claimed in respect of employees of the Petitioner & Meghalaya Home Guards stationed at the generating station and Corporate Centre/other offices employee cost allocated to the generating station (as per **Annexure-C** enclosed);*

(iv)Comparative statement of the normative O&M expenses allowed to the station versus the actual audited O&M expenses for the period from 2014-15 to 2018-19"

41. In response, the Petitioner vide affidavit dated 12.10.2021 has furnished details after serving the Respondents. On scrutiny of the details submitted by the Petitioner, it is observed that out of the total claim of the Petitioner for Rs.155.04 lakh, an amount of Rs.151.86 lakh corresponds to impact of wage revision of Petitioner's employees. It is noticed that out of the said claim of Rs.151.86 lakh, an amount of Rs.3.82 lakh during the period 2016-19, pertains to payment of PRP/ex-gratia to Petitioner's employees. As such, in line with the consistent methodology adopted by the Commission, the said amount of Rs.3.82 lakh has been excluded from the claim of the Petitioner for wage revision of its employees. Hence, the impact of wage revision of Petitioner's employees stands revised as Rs.148.04 lakh. Accordingly, the total claim of the Petitioner in respect of the wage revision impact reduces from Rs.155.04 lakh to Rs.151.22 lakh. The year wise break up for the same is as given as under:

(Rs. in lakh)

		2016-17		2017-18		2018-19		Total
		Salary	**Leave Encashment**	**Salary**	**Leave Encashment**	**Salary**	**Leave Encashment**	
1.	**Impact of wage revision – NEEPCO Employees**							
(i)	Employees cost before pay revision (w.e.f 1.1.2017)	330.23	29.00	310.03	51.00	299.03	30.00	1049.29
(ii)	Employees cost after pay revision (w.e.f. 1.1.2017)	352.39	30.95	372.97	61.35	345.05	34.62	1197.33
A	Impact of wage revision (ii)-(i)	22.16	1.95	62.94	10.35	46.02	4.62	148.04
2.	**Impact of wage revision – Meghalaya Home Guards (MLHG)**							
(I)	Employees cost before pay revision (w.e.f. 1.1.2017)	8.19	0.00	7.75	0.00	0.00	0.00	15.94
(II)	Employees cost after pay revision (w.e.f. 1.1.2017)	9.69	0.00	9.43	0.00	0.00	0.00	19.12
B	Impact of wage revision [(ii)-(i)]	1.50	0.00	1.68	0.00	0.00	0.00	3.18
	Total Impact of wage revision (A+B)	**23.66**	**1.95**	**64.62**	**10.35**	**46.02**	**4.62**	**151.22**
	Total Impact of wage revision	**25.61**		**74.98**		**50.63**		**151.22**

42. The Petitioner has also provided a comparative statement of the normative O&M expenses allowed to the generating station vis-à-vis the actual audited O&M expenses incurred for the 2014-19 tariff period which is as under:

(Rs. in lakh)

	Normative O&M expenses	**Actual audited O&M expenses**
2014-15	321.00	940.00
2015-16	342.33	841.00
2016-17	365.07	857.00
2017-18	389.32	1004.00
2018-19	415.19	789.00

43. It is to be noted that the SOR to the 2014 Tariff Regulations stipulates the following, with respect to recovery of wage revision impact by a generator:

> *"29.26 Some of the generating stations have suggested that the impact of pay revision should be allowed on the basis of actual share of pay revision instead of normative 40% and one generating company suggested that the same should be considered as 60%. In the draft Regulations, the Commission had provided for a normative percentage of employee cost to total O&M expenses for different type of generating stations with an intention to provide a ceiling limit so that it does not lead to any exorbitant increase in the O&M expenses resulting in spike in tariff. The Commission would however, like to review the same considering the macroeconomics involved as these norms are also applicable for private generating stations. In order to ensure that such increase in employee expenses on account of pay revision in case of central generating stations and private generating stations are considered appropriately, the Commission is of the view that it shall be examined on case-to-case basis, balancing the interest of generating stations and consumers.*
>
> *33.2 The draft Regulations provided for a normative percentage of employee cost to total O&M expenses for generating stations and transmission system with an intention to provide a ceiling limit so that the same should not lead to any exorbitant increase in the O&M expenses resulting in spike in tariff. The Commission shall examine the increase in employee expenses on case-to-case basis and shall consider the same if found appropriate, to ensure that overall impact at the macro level is sustainable and thoroughly justified. Accordingly, clause 29(4) proposed in the draft Regulations has been deleted. The impact of wage revision shall only be given after seeing impact of one full year and if it is found that O&M norms provided under Regulations are inadequate/insufficient to cover all justifiable O&M expenses for the particular year including employee expenses, then balance amount may be considered for reimbursement."*

44. It is observed that the methodology as indicated in the SOR suggests a comparison of the normative O&M expenses with the actual O&M expenditure on year-to-year basis. However, in this respect, the following facts need consideration:

a) The norms are framed based on the averaging of the actual O&M expenses of past five years to capture the year-on-year variations in sub-heads of O&M.

b) Certain cyclic expenditure may occur with a gap of one year or two years and as such adopting a longer duration i.e. five years for framing of norms also captures such expenditure which is not incurred on year to year basis.

c) When the generators find that their actual expenditure has gone beyond the normative O&M in a particular year put departmental restrictions and try to bring the expenditure for the next year below the norms.

45. In consideration of above facts, the Commission finds it appropriate to compare the normative O&M expenses with the actual O&M expenses for a longer duration, so as to capture the variation in the sub-heads of O&M. Accordingly, it is decided that for ascertaining 'whether the O&M norms provided under Regulations are inadequate/ insufficient to cover all justifiable O&M expenses including employee expenses', a comparison of the normative O&M expenses and actual O&M expenses in this case is made for three years i.e. 2016-19 on a combined basis, which is commensurate with the wage revision claim being spread over these three years. The comparative statement of the normative O&M expenses allowed to the generating station for the period 2016-19 versus the actual audited O&M expenses after excluding, filing fee, Productivity linked Incentives, prior period expenses, community development expenses, RLDC fees and charges and claims/advances from the actual O&M expenses claimed by the Petitioner, in the present case and incurred for the said period are as under:

(Rs. in lakh)

Year	Normative O&M Expenses (a)	Actual Audited O&M Expenses (b)	Difference (c)=(b)-(a)
2016-17	365.07	823.00	(-) 457.93
2017-18	389.32	972.00	(-) 614.68
2018-19	415.19	764.00	(-) 373.81
Total	1169.58	2559.00	(-) 1389.42

46. From the above submission of the Petitioner, it is observed that the actual

O&M expenses which also includes wage revision impact of Rs.151.22 lakh is more than the normative O&M expenses received during the 2016-19 period. As such, considering the fact that the actual O&M expenses allowed to the generating station in terms of the 2014 Tariff Regulations for the period 2016-19 exceeds the actual audited O&M expenses, including the wage revision impact of Rs.151.22 lakh, the impact of the wage revision amounting to Rs.151.22 lakh, as claimed by the Petitioner is allowed.

47. Accordingly, we, in exercise of the Power under Regulation 54 of the 2014 Tariff Regulations, relax Regulation 29(1) of the 2014 Tariff Regulations allow the reimbursement of the wage revision impact amounting to Rs.151.22 lakh, as additional O&M expenses for the period 2016-19. The arrear payments on account of the wage revision impact is payable by the beneficiaries in twelve equal monthly installments starting from the next bill after issue of this order. Keeping in view the consumer interest, we as a special case, direct that no interest shall be charged by the Petitioner on the arrear payments on the wage revision impact allowed in this order. This arrangement, in our view, will balance the interest of both the Petitioner and the Respondents. Also, considering the fact that the impact of wage revision is being allowed in exercise of the power to relax, the expenses allowed are not made part of the O&M expenses and the consequent annual fixed charges determined in this order.

Interest on Working Capital

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

"28 (1) (c) Hydro generating station including pumped storage hydroelectric generating station and transmission system including communication system:

(i) Receivables equivalent to two months of fixed cost;
(ii) Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 29; and
(iii) Operation and maintenance expenses for one month."

49. Accordingly, the Working capital for Receivables has been worked out on the basis of two months of fixed cost as under:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
218.47	226.07	245.57	193.48	193.77

50. Working capital for 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
48.15	51.35	54.76	58.40	62.28

51. Working capital for 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
26.75	28.53	30.42	32.44	34.60

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

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

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

54. Accordingly, interest on working capital is worked out as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Working Capital for O & M expenses (1 month)	26.75	28.53	30.42	32.44	34.60
Working Capital for Maintenance Spares	48.15	51.35	54.76	58.40	62.28
Working Capital for Receivables (2 months of fixed cost)	218.47	226.07	245.57	193.48	193.77
Total Working Capital	293.37	305.95	330.75	284.32	290.65
Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
Total Interest on Working capital	**39.60**	**41.30**	**44.65**	**38.38**	**39.24**

Annual Fixed Charges

55. Accordingly, the annual fixed charges approved for the generating station for the 2014-19 tariff period are summarized as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	363.89	366.89	378.50	99.12	106.40
Interest on Loan	72.33	48.12	33.23	28.96	30.80
Return on Equity	513.97	557.79	651.96	605.08	571.00
O&M Expenses	321.00	342.33	365.07	389.32	415.19
Interest on Working Capital	39.60	41.30	44.65	38.38	39.24
Total	**1310.79**	**1356.43**	**1473.40**	**1160.87**	**1162.62**

Normative Annual Plant Availability Factor

56. Clause (4) of Regulation 37 of the 2014 Tariff Regulations provides for Normative Annual Plant Availability Factor (NAPAF) for hydro generating stations already in operation. Accordingly, NAPAF of 69% has been considered for this generating station.

Design Energy

57. The Commission vide order dated 22.2.2016 in Petition No. 45/GT/2015 had approved the annual Design Energy (DE) of 86.30 Million units (MUs) for the

2014-19 tariff period in respect of this generating station. It is noticed that the Petitioner in this Petition, has not submitted any claim for Design Energy. As such, the approved DE of 86.30 Mus has been considered for this generating station for the 2014-19 tariff period as per month-wise details as under:

Month	Design Energy (MUs)
April	0.72
May	14.88
June	17.28
July	18.60
August	18.60
September	15.95
October	0.27
November	0.00
December	0.00
January	0.00
February	0.00
March	0.00
Total	**86.30**

Summary

58. The annual fixed charges allowed for the 2014-19 tariff period (after truing up) are as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Annual fixed charges	1310.79	1356.43	1473.40	1160.87	1162.62
Impact of Wage revision	-	-	**25.61**	**74.98**	**50.63**

59. Petition No. 372/GT/2019 is disposed of in terms of the above.

Sd/-	Sd/-	Sd/-
(Pravas Kumar Singh)	**(Arun Goyal)**	**(P.K. Pujari)**
Member	**Member**	**Chairperson**

Annexure I

Weighted Average Rate of Depreciation for the 2014-19 tariff period

Sl.	Name of the Assets	Gross Block as on 31.03.2014 or as on COD, whichever is later and subsequently for each year therafter upto 31.3.2019	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount for each year up to 31.03.2017
1	Land - Plant/Office	451.52	0.00%	0.00
2	Roads & Bridges	23.95	3.34%	0.80
3	Power House (Khandong)	2787.01	3.34%	93.25
4	PMT Non Residential Buildings	11.91	3.34%	0.40
5	Steeliner & Penstock Khandong	1119.69	5.28%	59.12
6	Switch Inclu Cable Conn. Khandong	259.64	5.28%	13.71
7	Trans. Hav. Rating 100 Amp & Above Khandong	121.72	5.28%	6.43
8	Tools & Plant Oridinary	5.06	5.28%	0.27
9	P & M in Gene. Stn. Khandong	4011.31	5.28%	211.80
10	Tools & Plant Special	110.93	5.28%	5.22
11	Lab & Meter Testing Equipment	0.50	6.33%	0.03
12	Outdoor Electrification	11.49	6.33%	0.61
13	Furniture & Fixtures	3.85	6.33%	0.24
14	Miscellaneous Equipment	0.09	6.33%	0.00
15	Communication Equipment	2.84	6.33%	0.18
16	Fixed Assets of Minor Value	0.07		0.00
	TOTAL	**8921.58**		**392.06**
	Weighted Average Depreciation Rate (%)			**4.395%**