CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 232/GT/2014

Coram:
Shri Gireesh B. Pradhan, Chairperson
Shri A.K. Singhal, Member
Shri A.S. Bakshi, Member

Date of Hearing: 16.07.2015
Date of Order: 06.01.2016

In the matter of

Revision of Annual Fixed Charges for the period 2009-14 after truing-up exercise and Determination of annual fixed charges for the period 2014-19 respect of Rangit Hydroelectric Power Station

And

In the matter of

NHPC Limited
NHPC Office Complex,
Sector-33, Faridabad,
Haryana-121003 **…Petitioner**

Vs

1. West Bengal State Electricity Distribution Company Ltd
Bidyut Bhawan (8th Floor) Block-DJ, Sector-II Salt Lake
Kolkata – 700091

2. Damodar Valley Corporation ,
DVC Towers VIP Road
Kolkata – 700054

3. Jharkhand State Electricity Board
Doranda, Ranchi
Jharkhand – 834002

4. Bihar State Electricity Board
Vidyut Bhawan, Bailey Road
New Delhi – 110 019

5. Department of Power
Govt of Sikkim, Kazi Road,
Gangtok, Sikkim–737101 **…Respondents**

Parties present:

For Petitioner: Shri A.K. Pandey, NHPC
Shri Piyush Kumar, NHPC
Shri Karpatru Nayak, NHPC
Shri Naresh Bansal, NHPC

For Respondents: None

ORDER

This petition has been filed by the petitioner, NHPC for revision of annual fixed charges of Rangit Hydroelectric Power Station (3 x 20 MW) (hereinafter referred to as 'the generating station') for the period 2009-14 in terms of Regulation 6(1) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 ("the 2009 Tariff Regulations") and for determination of tariff for the period 2014-19 in terms of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 ("the 2014 Tariff Regulations").

2. The generating station located in the State of Sikkim comprises of three units of 20 MW capacity each and was declared under commercial operation on 15.2.2000. The tariff for the generating station for the period from 1.4.2004 to 31.3.2009 was approved by the Commission vide order dated 9.5.2006 in Petition No.175/2004. Against the said order, the petitioner filed appeal (Appeal No.138/2006) before the Appellate Tribunal for Electricity (the Tribunal) challenging amongst others, the (i) computation of correct amount of O&M expenses and (ii) computation of correct amount of maintenance spares. During the pendency of this appeal, the Commission by order dated 12.10.2009 in Petition No.40/2009 revised the annual fixed charges for the generating station after considering the impact on account of additional capitalization/de-capitalization during the years 2004-05 and 2005-06. Thereafter, the Tribunal by its judgment dated 23.12.2009 allowed the prayers of the petitioner as regards the Computation of O&M expenses and Maintenance spares. With regard to O&M expenses, the Tribunal directed that the O&M expenses shall be allowed in terms of the decision of the Commission dated 28.7.2008

in R.P. No. 22/2008 (in Petition No. 107/2006) in respect of Dhauliganga HEP. The relevant portion of the judgment is extracted as under:

> *"8. This issue has been decided by the Commission in its review order dated July, 28, 2008 in respect of Dhauli Ganga Hydroelectric Project. The decision of the Commission is set out hereunder:*
>
> *xxxxxx*
>
> *12. In the order dated December 13, 2007, the Commission in para 51 of the order observed as under:*
>
> *"51. We observe that the petitioner has claimed the O&M expenses @ 1.5% of the admitted capital cost as on the date of commercial operation as pr the Tariff Regulations, 2004. However, for the year 2006-07, the O&M expenses have been escalated @ 4% for the full year instead of considering pro rata escalation after completion of one year of DOCO. After considering pro rata escalation during 2006-07, the O&M expenses allowed for calculation of tariff for the tariff period are as under:*
>
> *xxxxxxx*
>
> *It is thus seen that there has not been adequate discussion on the statutory provisions made in the 2004 regulations and their effect before arriving at the conclusion as per para 51, reproduced above. This prima facie, in our opinion amounts to an error of law, apparent on the face of record. Therefore, we allow review of the order dated December 13, 2007 as regards computation of O&M expenses."*
>
> *9. The above decision of the Commission in DhauliGanga squarely applies to the issue in hand in this Appeal. Accordingly we direct the Commission to allow the O&M expenses as per the approach followed in its review order dated July 28, 2008."*

3. With regard to computation of Maintenance spares for working capital, the Tribunal in its judgment held as under:

> "*11. The issue lies in a narrow compass. The station has been commissioned on February 15, 2000. An escalation @ 6% per annum is provided for as per Clause (v) (a)(ii) of Regulation 38 of the 2004 Regulations. Regulations provide for escalation @ 6% for the full year. As the unit has been commissioned during the year 1999-2000 on February 15, 2000, effect of pro rata escalation @ 6% can be given by considering pro rata escalation for the period February 16, 2000 to March 31, 2000 and then allowing 6% escalation in the following full year i.e. from April 01, 2000 to March 31, 2001. In this regard Sub Section 4 of Section 62 of The Electricity Act, 2003 requires that "No tariff or part of any tariff may ordinarily be amended, more frequently than once in any financial year except in respect of any changes expressly permitted in the terms of any fuel surcharge formula as may be specified". In view of this requirement of the Act it is not prudent to give effect to the annual escalation only after period of one year is completed as it would result in revision of the tariff in the middle of the tariff year. We, therefore, consider that pro rata escalation at the stipulated rate of 6% may be allowed for the period February 16, 2000 to March 31, 2000. With effect from April 01, 2000 a further escalation @ 6% per annum is payable. We order accordingly."*

4. Against the judgment dated 23.12.2009, review petition was filed by the respondent, BSEB which was dismissed by order of the Tribunal dated 13.4.2010.

5. Thereafter, by order dated 3.9.2010 in Petition No.176/2009, the Commission revised the annual fixed charges for the generating station after considering the impact on account of additional capitalization/de-capitalization during the years 2006-07, 2007-08 and 2008-09. The annual fixed charges approved by the Commission vide orders dated 12.10.2009 and 3.9.2010 for the period 2004-09 are as under:

(₹in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	1155.06	1155.84	1155.85	918.20	920.33
Interest on Loan	622.74	202.53	73.99	0.00	0.00
Return on Equity	2616.05	2617.44	2617.46	2617.82	2620.92
Advance Against Depreciation	1892.58	0.00	393.58	0.00	0.00
Interest on Working Capital	194.25	158.76	168.29	161.24	166.83
O & M Expenses	839.19	872.76	907.67	943.98	981.73
TOTAL	**7319.87**	**5007.32**	**5316.83**	**4641.25**	**4689.81**

6. Though the tariff for the period 2004-09 in respect of this generating station was revised by the Commission through its various tariff orders as stated above, it is noticed that the observations of the Tribunal in the judgment dated 23.12.2009 had inadvertently not been considered in the computation of the O&M expenses and Maintenance spares for working capital which were allowed in those tariff orders for 2004-09, perhaps due to oversight. This inadvertent error is rectified and the O&M expenses and Maintenance spares earlier approved for the period 2004-09 has been revised in line with the observations of the Tribunal and allowed as under:

(₹in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Interest on Working Capital	198.31	163.04	172.81	166.01	171.87
O & M Expenses	868.42	903.15	939.28	976.85	1015.92

7. Consequent upon this, the annual fixed charges for the period 2004-09 in respect of this generating station stand revised as under:

(₹in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	1155.06	1155.84	1155.85	918.20	920.33
Interest on Loan	622.74	202.53	73.99	0.00	0.00
Return on Equity	2616.05	2617.44	2617.46	2617.82	2620.92
Advance Against Depreciation	1892.58	0.00	393.58	0.00	0.00
Interest on Working Capital	198.31	163.04	172.81	166.01	171.87
O & M Expenses	868.42	903.15	939.28	976.85	1015.92
TOTAL	**7353.15**	**5041.99**	**5352.96**	**4678.89**	**4729.05**

Revision of Annual Fixed Charges for 2009-14

8. Petition No.121/2010 was filed by the petitioner for determination of tariff of the generating station for the period from 1.4.2009 to 31.3.2014 and the Commission by its order dated 30.11.2011 had determined the annual fixed charges for the generating station for the said period. Subsequently, the annual fixed charges determined by order dated 30.11.2011 were revised by Commission's order dated 31.8.2012 in Review Petition No.3/2012. Thereafter, by order dated 10.12.2013 in Petition No.154/GT/2013, the annual fixed charges of the generating station for 2009-14 was revised after truing-up exercise based on the actual additional capital expenditure incurred during the period 2009-12 and revised projections for additional capital expenditure for the period 2012-14. The annual fixed charges allowed for the period 2009-14 by the said order dated 10.12.2013 is as under:

(₹in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Return on Equity	4387.56	4325.88	4279.68	3315.70	3474.92
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Depreciation	2499.40	2493.48	2498.92	873.41	874.55
Interest on Working Capital	284.42	291.06	298.73	253.77	266.63
O & M Expenses	2816.33	2977.42	3147.73	3327.78	3518.13
Total	**9987.71**	**10087.84**	**10225.06**	**7770.66**	**8134.24**

9. Clause (1) of Regulation 6 of the 2009 Tariff Regulations provides as under:

"6. Truing up of Capital Expenditure and Tariff

(1) The Commission shall carry out truing up exercise along with the tariff petition filed for the next tariff period, with respect to the capital expenditure including additional capital expenditure incurred up to 31.3.2014, as admitted by the Commission after prudence check at the time of truing up.

Provided that the generating company or the transmission licensee, as the case may be, may in its discretion make an application before the Commission one more time prior to 2013-14 for revision of tariff."

(2) The generating company or the transmission licensee, as the case may be, shall make an application, as per Appendix I to these regulations, for carrying out truing up exercise in respect of the generating station a unit or block thereof or the transmission system or the transmission lines or sub-stations thereof by 31.10.2014;

(3) The generating company or the transmission licensee, as the case may be, shall submit for the purpose of truing up, details of capital expenditure and additional capital expenditure incurred for the period from 1.4.2009 to 31.3.2014, duly audited and certified by the auditors;

10. The petitioner in this petition has claimed the revision of annual fixed charges for the period 2009-14 based on the actual additional capital expenditure incurred during the years 2012-13 and 2013-14 after truing-up in terms of Regulation 6(1) of the 2009 Tariff Regulations and for determination of tariff of the generating station for 2014-19. Accordingly, the annual fixed charges claimed by the petitioner for the period 2009-14 in this petition are as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Return on Equity	4387.56	4325.88	4279.68	3682.48	3920.46
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Depreciation	2499.40	2493.48	2498.92	878.48	889.64
Interest on Working Capital	284.42	291.06	298.73	261.52	276.23
O & M Expenses	2816.33	2977.42	3147.73	3327.78	3518.13
Total	**9987.71**	**10087.84**	**10225.06**	**8150.27**	**8604.46**

11. The petition was heard on 16.7.2015 and the Commission after directing the petitioner to file some additional information reserved its orders in the petition. The petitioner has filed the additional information in compliance with the directions of the Commission and has served copies to the respondents. None of the respondents have filed replies to the petition. Based on the submissions of the petitioner and the documents available on record, we proceed to revise the tariff for the period 2012-14 based on truing-up exercise and also determine the tariff for the period 2014-19 in respect of the generating station as stated in the subsequent paragraphs:

Capital cost

12. The last proviso to Regulation 7 of the 2009 Tariff Regulations, as amended on 21.6.2011 provides as under:

> *"Provided also that in case of the existing projects, the capital cost admitted by the Commission prior to 1.4.2009 duly trued up by excluding un-discharged liability, if any, as on 1.4.2009 and the additional capital expenditure projected to be incurred for the respective year of the tariff period 2009-14, as may be admitted by the Commission, shall form the basis for determination of tariff."*

13. The Commission had considered the opening capital cost of ₹49350.88 lakh as on 1.4.2009 for the purpose of revision of tariff for the period 2009-14 in order dated 10.12.2013 in

Petition No.154/GT/2013. Also, the admitted capital cost of ₹49101.63 lakh as on 1.4.2012 in the said order dated 10.12.2013 has been considered for revision of tariff for the period 2012-14.

Actual Additional Capital Expenditure (2012-13 and 2013-14)

14. Regulation 9 (2) of the 2009 Tariff Regulations, as amended on 21.6.2011 provides as under:

> *"9. (2) The capital expenditure incurred or projected to be incurred on the following counts after the cut-off date may, in its discretion, 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;*
>
> *(ii) Change in law;*
>
> *(iii) Deferred works relating to ash pond or ash handling system in the original scope of work;*
>
> *(iv) 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) including due to geological reasons after adjusting for proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation; and*
>
> *(v) 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 of switchyard equipment due to increase of fault level, emergency restoration system, insulators cleaning infrastructure, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system:*
>
> *Provided that in respect sub-clauses (iv) and (v) above, any expenditure on acquiring the minor items or the assets like tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, 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. 1.4.2009.*

15. The re-conciliation of actual additional capital expenditure claimed in this petition with respect to additional capital expenditure as per books of accounts duly certified by auditor for the period 2012-13 and 2013-14 is as under:

(₹ in lakh)

Sl. No.	Particulars	2012-13	2013-14
1	**Additional Capitalization claimed**		
(a)	**Additions**		
i	Capitalisation against works projected and allowed for additional capitalisation during 2012-13 and 2013-14	37.11	75.99
ii	Capital expenditure allowed in previous years but actually incurred in this year	18.08	11.84
iii	Additional Capital Expenditure not projected but claimed.	247.14	180.87

	Total 1(a)	**302.32**	**268.70**
(b)	**Deletion / Deduction**		
i	Assets deducted on Replacement of new assets covered under Category-A	(-) 0.86	(-) 1.33
ii	Deduction of Assets without any Replacement and not covered under Exclusion clause	(-) 4.35	(-0 23.77
	Total 1(b)	**(-) 5.21**	**(-) 25.10**
(c)	**Net Addition claimed 1(c)=1(a)+1(b)**	**297.11**	**243.60**
2	**Additional Capitalization (Not claimed)**		
(a)	**Additions**		
i	Addition other than Inter-unit additions	888.01	151.48
ii	Addition on account of Inter-unit transfer	0.00	1.84
	Total 2 (a)	**888.01**	**153.31**
(b)	**Deletions**		
i	Deletion other than Inter-unit transfer	(-) 23.14	(-) 91.70
ii	Deletion on account of Inter-unit transfer of minor assets	0.00	(-) 3.65
	Total 2 (b)	(-) 23.14	(-) 95.36
(c)	**Net amount under Exclusion Category 2(c)= 2(a)+ 2(b)**	**864.87**	**57.96**
3	**Net Additional Capitalisation (including Inter-Unit Transfer) as per Books of Accounts 3=1(c)+2(c)**	**1161.99**	**301.56**
4	**Net additional capitalisation**		
i	Net **additional capitalisation as above**	297.11	243.60
ii	Less:- Assumed deletions	(-) 28.22	(-) 2.69
	Net additional capitalisation claimed	**268.88**	**240.91**

* *note: all figures have been rounded off to the nearest amount*

16. Based on the above reconciliation, the year-wise admissibility of the additional capital expenditure under various heads is discussed in the subsequent paragraphs.

Additions against works already approved

<u>2012-13</u>

17. The details of works/assets, the additional capital expenditure allowed for these works / actual additional capital expenditure against these works along with reasons for admissibility of the actual additional capital expenditure in terms of 2009 Tariff Regulations is as under:

(₹in lakh)

Sl. No	Assets/works	Amount allowed on projected basis	Actual expenditure incurred/ claimed	Justification for admissibility of expenditure
1	Construction of Store & Miscellaneous at dam and Power house area.	10.00	13.63	**Allowed** as the asset / work was approved by Commission in order dated 30.11.2011 in Petition No. 121/2010 under Regulation 9(2) (iv) of the 2009 Tariff Regulations. However, the claim of the petitioner for capitalisation of an

				expenditure of ₹3.21 lakh for Supply, Installation and Commissioning of fountain at VIP guest house of the generating station has not been allowed as the asset does not contribute to the efficient operation of the generating station. Accordingly, a total expenditure of **₹10.42 lakh** has only been allowed.
2	Purchase of different type of Switchyard spares, LT & HT switchgear for Dam (HM), Colony, power house.	8.00	16.69	**Allowed** as the asset/work was already approved by Commission in order dated 30.11.2011 in Petition No. 121/2010 under Regulation 9(2) (iv) of the 2009 Tariff Regulations. Since deletion value of old asset is not available, the assumed deletion of ₹9.29 lakh has been considered as against the claim of the petitioner for 10% of the cost of the new asset. The old asset has been de-capitalized under "Assumed deletions".
3	Purchase of different types of pumps against replacement	4.60	5.17	**Allowed** as the asset/work was already approved by Commission in order dated 30.11.2011 in Petition No. 121/2010 under Regulation 9(2) (iv) of the 2009 Tariff Regulations. An amount of ₹0.95 lakh has been considered as the deletion value of the old asset under "Assumed deletions".
4	Safety measure equipments & Fire fighting accessories	2.00	1.62	**Allowed** as the asset/work was already approved by Commission in order dated 30.11.2011 in Petition No. 121/2010 under Regulation 9(2) (iv) of the 2009 Tariff Regulations.
Total claimed			**37.11**	
Total allowed				**33.90**

Works allowed in previous years but capitalized in 2012-13

18. The details of works/assets, the additional capital expenditure allowed for these works / actual additional capital expenditure against these works along with reasons for admissibility of the actual additional capital expenditure in terms of 2009 Tariff Regulations are as under:

(₹in lakh)

Sl. No	Assets/works	Amount allowed on projected basis	Actual expenditure incurred/ claimed	Justification for admissibility of expenditure
1	Transformer Oil Filtration Plant Of Capacity 200 LPH	9.33	5.64	**Allowed** as the asset/work was already approved by Commission in order dated 30.11.2011 in Petition No. 121/2010 under Regulation 9(2) (iv) of the 2009 Tariff Regulations. Since deletion value of the old asset is not available, the assumed deletion of ₹3.14 lakh has been considered as against the claim of the petitioner for 10% of the cost of new asset. The old asset has been de-capitalized under "Assumed deletions".
2	X-Ray Machine	7.00	9.71	**Allowed** as the asset/work was already approved by Commission in order dated 30.11.2011 in Petition No. 121/2010 under Regulation 9(2) (iv) of the 2009 Tariff Regulations. An amount of ₹0.86 lakh has been considered as the deletion value of the old asset under "Deletions".
3	Sub Woofer Min Power Capacity Continuous/Program/Peak- 800 / 1600 /3200	4.20	1.16	**Not allowed**. The assets claimed under this head have already been allowed in year 2009-10 vide order dated 10.12.2013 in Petition no. 154/GT/2013 against the projection of ₹4.20 lakh.
4	2 Way Passive PA Speaker System, Min Power Capacity, Continuous/ Program/Peak- 800/ 1600 /3200		1.57	
	Total claimed		**18.08**	
	Total allowed			**15.35**

2013-14

19. The details of works/assets, the additional capital expenditure allowed for these works / actual additional capital expenditure against these works along with reasons for admissibility of the actual additional capital expenditure in terms of 2009 Tariff Regulations is as under:

(*₹in lakh*)

Sl. No	Assets/works	Amount allowed on projected basis	Actual expenditure incurred/ claimed	Justification for admissibility of expenditure
1	Construction of room, latrine, toilet and miscellaneous structure for DAV school and office / stores from township, since the existing temporary sheds are in damaged condition.	40.00	52.76	**Allowed** as the asset/work was already approved by Commission in order dated 30.11.2011 in Petition No. 121/2010 under Regulation 9(2) (iv) of the 2009 Tariff Regulations.
2	Purchase of different types of pumps against replacement	5.00	14.54	**Allowed** as the asset/work was already approved by Commission in order dated 30.11.2011 in Petition No. 121/2010 under Regulation 9(2) (iv) of the 2009 Tariff Regulations. The petitioner has considered de-capitalized value of ₹1.15 lakh under "Assumed deletions". However, keeping in view the COD of generating station, an amount of ₹7.71 lakh has been considered as the de-capitalized value of the old replaced assets. The old asset has been de-capitalized under "Assumed deletions".
3	Safety measure equipments & Fire fighting accessories, Security & Surveillance Equipments.	12.00	8.69	**Allowed** as the asset/work was already approved by Commission in order dated 30.11.2011 in Petition No. 121/2010 under Regulation 9(2) (iv) of the 2009 Tariff Regulations. Since the gross value of the replaced assets is not available, the petitioner has recommended 10% value of the actual additional expenditure incurred to be considered as de-capitalized value of the old assets. Keeping in view the COD

				of generating station, an amount of ₹1.27 lakh has been considered as the de-capitalized value of the old replaced assets. The old asset has been de-capitalized under "Assumed deletions".
	Total claimed		**75.99**	
	Total allowed			**75.99**

Works allowed in previous years but capitalized in 2013-14

20. The details of works, the additional capital expenditure allowed for these works, the actual additional capital expenditure incurred against these works along with justification for admissibility of the actual additional capital expenditure in terms of 2009 Tariff Regulations is as under:

(₹in lakh)

Sl. No	Assets/works	Amount allowed on projected basis	Actual expenditure incurred/ claimed	Justification for admissibility of expenditure
1	TATA Bus	12.00	11.84	**Allowed** as the asset/work was already approved by Commission under Regulation 9(2) (iv) vide Order dated 30.11.2011. However, deletion value of ₹10.00 lakh as provided in Petition No. 121/2010 has been considered under "Assumed Deletions" in place of ₹1.33 lakh as considered by the petitioner under regular "Deletions".
	Total claimed		**11.84**	
	Total allowed			**11.84**

Capital expenditure not projected/allowed, but incurred and claimed

21. The details of the actual additional capital expenditure incurred against new works/ assets along with admissibility of the actual additional capital expenditure in terms of 2009 Tariff Regulations is as under:

2012-13

(₹in lakh)

Sl. No	Assets/works	Actual expenditure incurred / claimed	Justification submitted by petitioner	Admissibility of expenditure
1	Supply, Erection & Commissioning of level sensor at Rangit dam	11.34	The Level sensor at Rangit Dam has been installed on replacement of level sensor installed earlier which was not functioning properly. The level sensor is very much essential for the monitoring of Dam water level and its display at Control Rooms.	**Allowed** on replacement under Regulation 9(2)(iv) of the 2009 Tariff Regulations since the asset is considered necessary for successful and efficient operation of the generating station. Since the deletion value of old asset is not available, the assumed deletion of ₹6.31 lakh has been considered as against the claim of the petitioner @ 10% cost of the new asset. The old asset has been de-capitalized under "Assumed deletions".
2	Purchase of Common Meter Reading Instrument(CMRI) complete with software, communication cable to pc and charger etc	0.31	The generating station has two CMRI meters. Out of these two meters, one meter is very old and defunct, the second meter is used for collecting data from Unit/Lines special energy metes. This SEM data is further utilized for preparation of daily generation report. In case of any problem in this meter, it is very difficult to download data from energy meters and hence interruption in preparing of DGR. Keeping in view of these facts, one additional meter has been purchased.	**Not allowed** under Regulation 9(2)(iv) as the asset is of minor nature.

3	Purchase of Manual Operated Variable Auto Transformer 3-Phase, 50 Hz	0.32	3-Phase Manual Operated Variable Auto Transformer is used for supplying different level of current and voltages for relay testing and other purposes. Hence necessities have been felt to purchase one no. 3-Phase Manual Operated Variable Auto Transformer.	**Not allowed** under Regulation 9(2)(iv) as the asset is of minor nature.
4	Purchase of CVT	10.53	07 nos. of Single winding 132 KV CVTs (3 x 2 in Transmission line viz. Siliguri, Ramam & 132 kV Melli + 1 X 1 in 20 MVA Transformer incomer) are installed at Switchyard of Rangit Power House. It is necessary to maintain some spare CVT to meet any emergent requirement and also to replace some faulty CVT. Keeping in view of all these facts, spare CVT has been purchased.	**Not allowed** under Regulation 9(2)(iv) as the asset is in the nature of spares.
5	Purchase of event logger with accessories	26.76	Event logger is a data recording / storing device used to record SoE of electrical / mechanical equipments in any power generating station. The generating station has 'AREVA make' Event Logger of 'Model S900' which is not operational due to some faults in its internal parts.	**Allowed** on replacement under Regulation 9(2)(iv) of the 2009 Tariff Regulations since the asset is considered necessary for successful and efficient operation of the generating station. Since the deletion value of old asset is not available, the assumed deletion of ₹14.90 lakh has been considered as against the claim of the petitioner @ 10% cost of the new asset. The old asset has been de-capitalized under "Assumed

			Continuous operation of machines without taking event logger in-line is not a healthy practice because sequence of some events before and after a fault could not be explored for diagnosis, if a fault occurs. Also the point of un-healthiest of the event logger in generating station has been raised by technical inspection team from corporate office time-to-time. Existing event logger could not be made functional without repairing / changing of the faulty cards. OEM has informed that manufacturing of the existing model (S900) of Event Logger/card has been stopped and issued a certificate of 'Product Obsolescence for S900 Event Logger'. Hence, proposal for replacement of this existing event logger with its latest counterpart which will suit our current requirement as well as future requirement of up-gradation of system to SCADA. And based on the suggestion by OEM, Model MiCOM C264 RTU (80TE) has been found technically suitable	deletions".

			meeting all the requirements.	
6	Installation and commissioning of 01 no. of 66kv circuit breaker at switchyard of Rangit power station	0.77	There are three no. of BHEL make 66 KV SF6 circuit breaker in the Switchyard of generating station. Out of these three, the breaker in the incomer side of 66 kV Bus, which also acts as a connecting link between 66 kV bus and 132 KV bus through an Auto-Transformer, is not performing well. Its unreliable operation is creating difficulties in order to maintain the smooth operation of power house as well as to maintain the cordial relations with other Grid utilities. As the BHEL make breakers of all three generating units and three lines (132 KV RGT-SLG, 132 KV RGT-RAMMAM and 132 KV RGT-MELLI) have already been replaced by Siemens breakers due to the same reasons and performance of the installed Siemens make 132 kV SF6 circuit breakers are quite satisfactory. Therefore, 1 no. of BHEL make SF6 circuit breaker has been replaced by Siemens make breaker.	**Allowed** on replacement under Regulation 9(2)(iv) of the 2009 Tariff Regulations since the asset is considered necessary for successful and efficient operation of the generating station. Since the deletion value of old asset is not available, the assumed deletion of ₹0.43 lakh has been considered as against the claim of the petitioner @ 10% cost of the new asset. The old asset has been de-capitalized under "Assumed deletions".

7	Purchase of SF6 outdoor circuit breaker with all fittings and galvanised steel structure	8.14	The generating station switchyard have total nine bays I.e (3 generator bays +5 line bays +1 bus coupler bay) and 9 no. SF6 breakers, make-BHEL are very old and installed at the time of commissioning of generating station. Keeping in view of day to day operation problems, these breakers were replaced one by one in last past years. Therefore Siemens Make SF6 breaker has been purchased based on past performance of SF6 breakers in Unit, Line bays to replace old BHEL Make SF6 breaker in bus coupler bay.	**Allowed** on replacement under Regulation 9(2)(iv) of the 2009 Tariff Regulations as the asset is considered necessary for successful and efficient operation of the generating station. Since the deletion value of old asset is not available, the assumed deletion of ₹4.53 lakh has been considered as against the claim of the petitioner @ 10% cost of the new asset. The old asset has been de-capitalized under "Assumed deletions".
8	Purchase of non integral floodlight luminaries.	2.47	The same is purchase for the lightening of various places of power station areas like store yard, dam etc. It is very much essential to keep these places very-very lighted.	**Allowed** under Regulation 9(2)(iv) of the 2009 Tariff Regulations as the asset is considered necessary for the safety of the plant which will in turn ensure the efficient operation of the generating station.
9	Purchase of high mast lighting system each in power house, switchyard and central store	19.21	Power house & Switchyard area consists of vital establishments/ equipments/assets/instruments for smooth operation of Power House. The above outdoor area of Power House & Switchyard is spread in the length of approx. 50 to 100 m. Also, the power station being the	

			asset of national importance, there is need to enhance the security of the Power House & Switchyard area for which proper illumination of the area during night is required. Also, the area in Central store is scattered having various Godowns & Scrap-yard situated in the radius of approx 50 m and the same require daylight illumination. Therefore, due to security point of view, necessity has been felt for High Mast Lighting in these areas.	
10	Supply, Erection & Commissioning of AMF panel for DG set at Dam	9.80	One no. of 350 KVA DG set is installed at Rangit Power House to meet the power demand in emergency situation like grid fail etc. This DG set is also used for starting power required to start a synchronous generator in the case of complete black out. Therefore, this DG set acts as a critical asset of Rangit Power House. Presently, the control of DG set i.e., START/STOP is done manually. Since DG set is located at a distance from power house control room so it takes considerable time to reach operating personnel at DG set	**Allowed** under Regulation 9(2)(iv) as the asset is considered necessary for the safety of the plant which will facilitate the successful and efficient operation of the generating station.

			control panel. In emergency situation like grid fail, such time delay to start a DG set may lead to delay in control of leakage water through drainage / dewatering sump. Therefore, it is essential to install AMF control panel for DG set so that it can START/STOP automatically to control the leakage water and avoid any flood like situation as well as to provide sufficient starting power to normalize the units	
11	Purchase of loader-cum excavator.	26.51	Loader cum Excavator has been purchased on replacement of Hyd. Excavator to cope up with requirements of Power Station as per approval of O&M Division Office Order no. NH /O&M/ RGT / 05 / 2012/685 dated 27.6.2012.	**Allowed** on replacement under Regulation 9(2)(iv) of the 2009 Tariff Regulations, as the asset is considered necessary for the efficient operation of the generating station. The gross value of the replaced asset is considered as ₹13.63 lakh. The old asset is being de-capitalized under "Assumed deletions"
12	Purchase of Hydra crane, 14 ton capacity.	15.81	Hydra Crane has been purchased on replacement of 02 truck mounted cranes to cope up with requirements of Power Station.	**Allowed** on replacement under Regulation 9(2)(iv) of the 2009 Tariff Regulations, as the asset is considered necessary for the efficient operation of the generating station. Since the deletion value of old asset provided by the petitioner is less, an amount of ₹8.80 lakh has been considered as against the amount for ₹0.89 lakh indicated by the petitioner. The old asset has been de-capitalized under "Assumed deletions"

13	Purchase of Refrigerated Air dryer, capacity-40 cfm,	1.64	High Press - 50 kg/cm^2 system are in use for operation of guide vane servomotor and MIV and Low Press. -7 kg/cm^2 system are in use for applying of brake jack and misc. Due to hilly area and high moisture content in air of this location it creates problem in aforesaid system by mixing of moisture to oil and brake jack system. Hence Refrigerated Air Dryer was quite urgent of smooth running of aforesaid system being lifeline of power house.	**Allowed** on replacement under Regulation 9(2)(iv) of the 2009 Tariff Regulations, as the asset is considered necessary for the efficient operation of the generating station.
14	Purchase of Refrigerated air dryer, capacity-110cfm	2.07		
15	Purchase of chain pulley block triple spacer (gear type) 3 ton capacity (2 nos.)	0.34	The chain pulley blocks required for the shifting of various heavy items like pumps etc. from one part to other within the power house.	**Not allowed** as the asset is in the nature of "Tools & Tackles".
16	Purchase of Resistance Test card	2.83	These are required as accessories to the main testing equipment i.e. Multi function test kit for testing of various other equipments.	
17	Purchase of CT Test card	4.38	These are required as accessories to the main testing equipment i.e. Multi function test kit for testing of various other equipments.	**Not allowed as the** asset is in the nature of O&M
18	Purchase of pipe bender capacity 4" to 8" complete with 5hp hydraulic power pack.	8.95	In Rangit Power House, different types of pipe segments in circular/bended form are installed for cooling water pipeline in LGB,	**Not allowed** as the asset is in the nature of "Tools & Tackles".

			UGB and Stator Air Cooler, Oil line for guide vane servomotor as well as MIV, MIV Bypass etc. Since 12 years have been passed after commissioning of power house and eroded pipe are getting punctured. Hence for replace the same, Pipe Bending Machine is quite urgent for smooth running of power house.	
19	Multifunctional primary injection test kit with display machine	22.15	The multi function test kit is essentially required for Condition monitoring/assessment of various high voltage systems/equipments e.g. Power Transformers, Current Transformers, Voltage Transformers etc., Contact resistance measurements, Winding resistance measurement, testing of various Sub-station equipments of power station.	
20	Purchase of Gasoline power unit for radial gate (size 9x12mtr. height) along with materials for piping.	12.75	Gasoline Power Pack has been purchased as an alternate source for operation of Radial Gates to cope up with urgency in case of non functioning of Hydraulic cylinders.	**Allowed** on replacement under Regulation 9(2)(iv) of the 2009 Tariff Regulations, as the asset is considered necessary for successful and efficient operation of the generating station.

21	Purchase of traveller ambulance.	8.35	The ambulance in the power station met with an accident & got missed in the river bed, become untraceable due to heavy current of water, in the current financial year. Hence a new one is purchased for mitigation of the emergency medical situation.	**Allowed** on replacement under Regulation 9(2)(iv) of the 2009 Tariff Regulations, Keeping in view that the asset is for the benefit of the employees working in remote areas of the project and in turn facilitates the successful and efficient operation of the generating station. The gross value of the replaced asset is considered as ₹5.82 lakh. The old asset is being de-capitalized under "Assumed deletions".
22	Purchase of LAN extender 2(nos.)	0.38	These are the networking devices and the same is required for the connecting remote sites of power station like admin. Building to other sites for ERP and sharing of power plant related data.	**Not allowed** as the asset is in the nature of minor assets.
23	Purchase of Analog extension line card 24 port	1.13	For establishing effective communication network between Dam site and other Location of generating station the EPABX installed at Rangit Dam site.	
24	Purchase of Siemens Hipath 3800 voice communication server with all accessories	4.20	There was no surveillance system installed at Rangit Power Station to online monitor Power house & Switchyard area which consists of vital equipments for smooth operation of Power House & Switchyard. Also, the power station being the asset of national importance, hence necessities have been felt to enhance the security of the	**Allowed** under Regulation 9(2)(iv) since the asset is considered necessary for the successful and efficient operation of the generating station.

			Power House & Switchyard area by equipping online surveillance cameras with LAN compatibility along with main big size display in PH control room & storage facility for the coverage for few weeks. Therefore, surveillance system has been installed at various locations viz. switchyard, TRC/Outside Power House Building and different floors of Power House. Apart from strengthening of security, the above surveillance system will also help in monitoring the various equipments inside Power House, Switchyard & Generator Transformers (GT) area. In addition to that the camera at the TRC area would also helpful in monitoring the silt condition of the river during monsoon season along with TRC level which will help during day-to-day working and during emergency situations as well.	
25	Purchase of surveillance system in power house & switchyard	19.68	There was existing LAN system which consists of very few nodes to connect with the end user terminals as well as of low bandwidth. Hence it is felt to increase the	**Allowed** under Regulation 9(2)(iv) of the 2009 Tariff Regulations as the asset is considered necessary for the safety of the plant which will facilitate the successful and efficient operation of the generating station.

26	Purchase of LAN (Wired & Wireless) at Rangit Administrative building	20.10	connectivity due to increase in users and increase in IT applications like ERP, high speed LAN (wired and wireless) has been Implemented. Further, the same is also helpful in connecting to the remote sites of the power station as well for better and redundant connectivity.	**Allowed** under Regulation 9(2)(iv) of the 2009 Tariff Regulations since the asset is considered necessary for the efficient operation of the generating station.
27	Purchase of Xerox WC5016 digital copier	0.75	As per the requirement in the power station the photo copier machines were purchased to upgrade the existing analogue machines in the power station.	**Not allowed** as the asset is in the nature of minor assets
28	Purchase of Xerox digital photocopier model no. WC5020 with duplication and networking item	1.04		
29	Purchase of metal halide fitting (tunnel lighting luminaries)	0.85	The light fittings were purchased for use in various places in the power station like Dam, Tunnel and power house etc.	**Not allowed** as the asset is in the nature of minor assets
30	Purchase of digital insulation tester.	3.39	The instruments are purchased for the checking of healthiness of insulation of various electrical instruments in the power house.	**Not allowed** as the asset is in the nature "Tools & Tackles".
31	Purchase of constant voltage transformer	0.17		**Not allowed** as the asset is in the nature of minor assets
	Total claimed	**247.14**		
	Total allowed			**189.62**

2013-14

(₹in lakh)

Sl. No.	Assets/works	Actual expenditure incurred/ claimed	Justification submitted by the petitioner	Remarks for admissibility
1.	Dam & Barrage	154.82	After finalization of the final deviation related to the construction of the Concrete Dam and slide zone treatment of the right bank of dam axis by M/s HCL ltd., the amount has been capitalized.	**Allowed** under Regulation 9 (2)(ii) of the 2009 Tariff Regulations as the expenditure is towards final adjustment of bill
2.	Purchase of HPSV street light fitting 70 watt, elliptical type	1.63	The same is purchased for use in various places of Dam, ECD and power house etc.	**Not allowed** as the asset is in the nature of minor assets
3.	Purchase of Gasoline power unit for radial gate (size 9 mtr.x 12 mtr. height) along with materials for piping.	1.11	Gasoline power pack has been purchased as an alternate source for operation of radial gates to cope up with urgency in case of non functioning of hydraulic cylinders.	**Allowed on** replacement under Regulation 9(2)(iv) of the 2009 Tariff Regulations as the asset is considered necessary for successful and efficient operation of the generating station.
4.	Purchase of digital Earth tester	0.17	Earth tester is very important measuring instrument to measure soil resistivity. it is necessary to measure soil resistivity once in a year to know grounding resistance of earth pits which should not go beyond the specified limit. hence it is necessary to have a earth tester so that continuous monitoring of soil resistivity could be monitored time to time and suitable necessary action for improving grounding resistance of various pits could be taken timely. Hence a digital earth tester has been purchased.	**Not allowed** as the asset is in the nature of "Tools & Tackles".

5.	Purchase of 60 kV lightning arrestor	0.99	27 nos. of 120 kV, Crompton Greaves make lightening arrestor are installed in switchyard. as the lightning arrestors are very first guard to protect the power house/switchyard's vital equipments against any type of unwanted surge/lightning, there must be sufficient no. of spares available for smooth operation of ph and to avoid any longer shutdown especially for generating units, which will ruin the generation / capacity index target. also, most of the las installed at power house & switchyard are very old and very prone to be damaged during the fault conditions. keeping in view of above, additional 06 nos. of 120 kV as a spare of m/s Crompton greaves make (model no.-zlax25c) has been purchased.	**Allowed** under Regulation 9(2)(iv) of the 2009 Tariff Regulations towards safety of the plant which will in turn facilitate the successful and efficient operation of the generating station.
6.	Purchase of 72.5 kv 2500 amp, SF6 outdoor circuit breaker	12.99	There are three number of 66kv sf6 circuit breaker in the switchyard of generating station. Out of these three, one is Siemens make which has been installed after replacing the old BHEL make, and the other two are of BHEL make. These two circuit breakers are installed at very critical locations viz, one at 66 kV Rangit – Ravangla line and the other at the hv side of 3 MVA transformer. Above two circuit breakers are very old therefore creating some operational problem. The unreliable operation of these circuit breakers is creating difficulties in order to maintain the smooth operation of power house. Therefore, necessities are being felt to replace the above mentioned BHEL make 66 kV sf6 circuit breakers by new ones. Keeping in view of all these facts, 02 nos. of BHEL make SF6 circuit breaker has been purchased.	**Allowed on** replacement under Regulation 9(2)(iv) of the 2009 Tariff Regulations as the asset is considered necessary for successful and efficient operation of the generating station. Since the deletion value of old asset is not available, the assumed deletion of ₹6.89 lakh has been considered as against the claim of the petitioner for 10% of the cost of new asset. The old asset is being de-capitalized under "Assumed deletions"
7.	Purchase of	0.14	The same asset was	The asset will reduce the

	solar panel.		purchased for the purpose of providing current to automatic weather station installed at dam site.	O&M expenses of the generating station. As O&M expenses have been allowed to the generating station on normative basis, the capitalization of this asset is **not allowed** even though it indirectly has impact on the efficient operation of the generating station.
8.	Purchase of light duty concrete hammer drill machine.	0.19	These drill machines were purchased for use in various drilling works of the power station.	**Not allowed** as the asset is in the nature of "Tools & Tackles".
9.	Purchase of portable drill machine	0.32		
10.	Purchase of sander grinder	0.17	The same asset is purchased in power house for the purpose of grinding of mechanical equipments	
11.	Purchase of hot air oven	2.06	Heating and drying oven is required for different purposes like drying of silica gel, welding electrodes and drying of varnished small windings etc. most of these application needs accurate temperature control and forced air convection. Presently there is no heating and drying oven available in generating station. Hence necessities have been felt to purchase a drying oven	**Not allowed** as the asset is in the nature of minor assets
12.	Purchase of VT test card	2.57	These are required as accessories to the main testing equipment i.e. multi function test kit for testing of various other equipments.	**Not allowed** as the assets are in the nature of "Tools & Tackles".
13.	Purchase of transformer test card	3.71	These are required as accessories to the main testing equipment i.e. multi function test kit for testing of various other equipments.	
	Total claimed		**180.87**	
	Total allowed			**169.91**

Deletions

22. The following year-wise expenditure has been de-capitalized by the petitioner on account of replacement of old assets. The de-capitalized assets include X-ray machines, free hold land, buses, ambulance, boats, wheel loader, survey pillar, etc.

(₹in lakh)

2012-13	2013-14
(-) 5.21	(-) 25.10

23. As the corresponding assets do not render any useful service in the operation of the generating station, the de-capitalization of the above expenditure as affected in the books of accounts has been allowed for the purpose of tariff. However, during the year 2013-14, the deletion of (-) ₹1.33 lakh towards the de-capitalization of buses has been considered as (-) ₹10.00 lakh under "Assumed Deletions" based on the deletion value provided by the petitioner in Petition No. 121/2010. As such, to avoid double deduction deletion the amount of (-) ₹1.33 lakh is being ignored here. Accordingly, the deletions allowed / considered for the purpose of tariff are as under:

(₹in lakh)

2012-13	2013-14
(-) 5.21	(-) 23.77

<u>Exclusions</u>

Exclusions in additions (incurred, capitalized in books but not to be claimed for purpose of tariff)

24. The following year-wise expenditure has been incurred by the petitioner on replacement of minor assets, purchase of capital spares, helicopter, purchase of miscellaneous assets, additions on inter-unit transfers, etc.,

(₹in lakh)

	2012-13	2013-14
Exclusions in additions (incurred, capitalized in books but not to be claimed for tariff purpose) (a)(iii)	888.01	153.31

25. The expenditure incurred towards procurement/replacement of minor assets and procurement of capital spares after the cut-off date is not permissible for the purpose of tariff in terms of the 2009 Tariff Regulations. Accordingly, the petitioner has considered these additions

under exclusion category; i.e positive entries are to be ignored for the purpose of tariff. As such**,** the exclusions of the positive entries under the head are in order and are allowed.

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

26. The petitioner has de-capitalized amounts in books of accounts pertaining to capital spares, minor assets such as computers, office equipment, furniture, fixed assets of minor value etc., as these are not in use on account of their becoming unserviceable/obsolete and also deletion on account of inter-unit transfer of minor assets, as under :

(₹in lakh)

	2012-13	**2013-14**
Minor assets de-capitalized/Inter-unit transfer of minor assets	(-) 23.14	(-) 42.71
Capital spares de-capitalized on consumption	0.00	(-) 52.64
Total exclusions in deletions (de-capitalized in books but not to be considered for tariff)	**(-) 23.14**	**(-) 95.36**

27. The petitioner has prayed that the negative entries may be ignored/ excluded for the purpose of tariff as the corresponding positive entries for purchase of such assets are not being allowed for the purpose of tariff in terms of the provisions of the 2009 Tariff Regulations. In support of this, the petitioner has referred to the observations of the Commission in order dated 7.9.2010 in Petition No.190/2009 as under:

> *"20. After careful consideration, we are of the view that the cost of minor assets originally included in the capital cost of the projects and replaced by new assets should not be reduced from the gross block, if the cost of the new assets is not considered on account of implication of the regulations. In other words, the value of the old assets would continue to form part of the gross block and at the same time the cost of new assets would not be taken into account. The generating station should not be debarred from servicing the capital originally deployed on account of procurement of minor assets, if the services of those assets are being rendered by similar assets which do not form part of the gross block."*

28. Accordingly, in line with the above decision of the Commission, the negative entries corresponding to the deletion of minor assets are allowed to be excluded/ ignored for the purpose of tariff.

29. The petitioner has excluded amount of (-)₹52.64 lakh in 2013-14 towards de-capitalization of capital spares. As regards the prayer of the petitioner for exclusion of negative entries corresponding to de-capitalization of capital spares, it is observed that the expenditure on minor assets and capital spares are not allowed to be capitalized after the cut-off date in terms of the 2009 Tariff Regulations. While the recovery of expenditure on capital spares is allowed through O&M expenses on consumption, the recovery of additional expenditure on minor assets beyond the cut-off date is neither allowed to be capitalized nor permissible under O&M expenses. Hence, the observations of the Commission in order dated 7.9.2010 cannot be made applicable in respect of de-capitalization of spares. Accordingly, the claim of the petitioner for exclusion of negative entries arising out of de-capitalization of capital spares is justifiable provided that the de-capitalized spares are the ones which were not considered in the capital base for the purpose of tariff in the year of capitalization.

30. It is observed that the capital spares de-capitalized in books of accounts in the year 2013-14 are the ones which have not been allowed as part of the capital base for the purpose of tariff or in other words positive entries arising out of their purchase have been excluded / ignored for the purpose of tariff during 2012-13 and 2013-14. Hence, the exclusion/ignoring of negative entries arising out of de-capitalization of capital spares for the purpose of tariff has been allowed. In view of this, the following amounts have been excluded /ignored for the purpose of tariff as under:

(₹ in lakh)

	2012-13	**2013-14**
Exclusions in additions	888.01	153.31
Exclusions in deletions	(-) 23.14	(-) 95.36
Total exclusions allowed	**864.87**	**57.96**

Assumed Deletions

31. 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 the de-capitalization of the value of the old asset.

However, in certain cases where de-capitalization is proposed to be effected /affected during the future 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”. The amounts considered by the petitioner under this head are as under:

(₹ in lakh)

2012-13	2013-14
(-) 28.22	**(-) 2.69**

32. It is observed that against the expenditure towards the replacement of switchyard spares, LT & HT switchgear for Dam, transformer oil filtration plant, level sensor, and circuit breaker during the year 2012-13, the de-capitalization value of these assets has been considered by the petitioner at the rate of 10% of the value of new asset and ₹0.89 lakh only for replacement of hydra crane. Considering the fact that the plant is 15 years old, the de-capitalized value furnished by the petitioner for these assets appear to be low. Similarly, the gross value of the assets de-capitalized under ‘assumed deletions’ in 2013-14 like pumps, surveillance equipment and circuit breaker as considered by the petitioner @ 10% of the value of new asset is also not acceptable. Therefore, the methodology of arriving at the fair value of the de-capitalized asset, i.e. escalation rate of 5 % per annum from the COD has been considered in order to arrive at the gross value of old asset in comparison to the cost of new asset. Accordingly, the assumed deletions claimed and allowed for the purpose of tariff are detailed as under:

(₹ in lakh)

Sl. No.	**Asset/Work**	**Additions claimed for the asset**	**Assumed Deletions**	
			Claimed	**Allowed**
2012-13				
1.	Switchyard spares, LT & HT switchgear for Dam	(-)16.69	(-)1.67	(-) 9.29
2.	Transformer Oil filtration plant	(-) 5.64	(-) 0.56	(-) 3.14
3.	Purchase of Pumps	(-) 5.17	(-) 0.95	(-) 0.95
4.	Level sensor for Dam	(-)11.34	(-)1.13	(-) 6.31
5.	Installation of Circuit breaker	(-) 0.77	(-) 0.08	(-) 0.43
6.	Circuit breaker	(-) 8.14	(-) 0.81	(-) 4.53
7.	Event logger with accessories	(-) 26.76	(-) 2.67	(-)14.90

8.	Loader-cum-excavator	(-) 26.51	(-)13.63	(-)13.63
9.	Hydra crane	(-)15.81	(-) 0.89	(-) 8.80
10	Traveler Ambulance	(-) 8.35	(-) 5.82	(-) 5.82
	Total for 2012-13	**(-)125.18**	**(-) 28.22**	**(-) 67.80**
2013-14				
1.	Purchase of pumps	(-)14.54	(-)1.15	(-)7.71
2.	Safety measure equipments & Fire fighting accessories, Security & Surveillance Equipments.	(-) 8.69	(-) 0.24	(-)1.27
3.	TATA Bus	(-)11.84	(-)0.00	(-)10.00
4.	SF6 outdoor circuit breaker	(-)12.99	(-)1.30	(-)6.89
	Total for 2013-14	**(-) 48.06**	**(-) 2.69**	**(-) 25.87**

33. It is also observed that petitioner has claimed an amount of (-)₹20.34 lakh as 'assumed deletion' on account of Replacement of Loader-cum-excavator, Hydra crane and Ambulance in the year 2012-13 against the capitalization of ₹50.67 lakh towards expenditure allowed on new assets. The gross value of old Loader-cum-excavator, Hydra crane and Ambulance have been de-capitalized in the books of accounts in 2013-14. Accordingly, the negative book entry of ₹20.34 lakh in 2013-14 has been shifted to the year 2012-13 by way of assumed deletion, i.e in the year of capitalization of the new asset. This is found to be in order and hence allowed. Further, the petitioner has indicated amount of (-) ₹0.95 lakh under 'assumed deletion' on account of the Replacement of pumps in 2012-13 as against the capitalization of ₹5.17 lakh. The actual de-capitalization of these old assets may be effected in books of accounts during 2014-15. However, by way of assumed deletions in 2012-13, the future book entries have been shifted to the year of capitalization of the new assets. This is found to be in order and hence allowed. Based on the above, the 'assumed deletions' claimed and allowed for the years 2012-13 and 2013-14 are as under:

(₹ in lakh)

Assumed Deletion	**2012-13**	**2013-14**
Claimed	(-) 28.22	(-) 2.69
Allowed	(-) 67.80	(-) 25.87

Un-discharged and discharge of Liabilities

34. The petitioner has submitted that there are no un-discharged liabilities and/or discharge of for the years 2012-13 and 2013-14.

35. Based on the above discussions, the actual additional capital expenditure allowed for the period 2012-14 for the purpose of tariff is as under:-

(₹ in lakh)

	2012-13	2013-14
Additions against works already approved by Commission	49.25 (33.90+15.35)	87.83 (75.99+11.84)
Additions not projected earlier but incurred and claimed	189.62	169.91
Total additions allowed (a)	**238.87**	**257.74**
Deletions allowed **(b)**	(-) 5.21	(-) 23.77
Assumed deletions considered **(c)**	(-) 67.80	(-) 25.87
Total additional capital expenditure allowed before un-discharged/ discharged liabilities (d)=(a)+(b)+(c)	**165.86**	**208.10**
Less: Un-discharged liabilities in the additional capital expenditure allowed above	0.00	0.00
Add: Liabilities discharged during the year out of un-discharged liability existing as on 31.3.2014	0.00	0.00
Additional Capital Expenditure allowed	**165.86**	**208.10**

Capital cost for 2012-14

36. Accordingly, the capital cost considered for the purpose of the tariff is as under:

(₹ in lakh)

	2012-13	2013-14
Opening capital cost as on 31.3.2012	49101.63	49267.49
Additional capital expenditure allowed	165.86	208.10
Closing capital cost	**49267.49**	**49475.59**

Debt-Equity Ratio

37. The debt-equity ratio as on 31.3.2009 worked out as above has been considered for revision of tariff for 2009-14 based on truing-up in terms of Regulation 6 of the 2009 Tariff Regulations.

Return on Equity

38. The petitioner has considered the applicable tax rate of 20.008% and 20.961% for the years 2012-13 and 2013-14 respectively. Accordingly, the pre-tax rate of return on equity has been worked out in terms of Regulation 15(3) and 15(4) of the 2009 Tariff Regulations as under:

	2012-13	2013-14
Base Rate for Return on Equity	*15.750%	16.500%
Tax Rate	20.008%	20.961%
Rate of ROE (pre-tax)	19.689%	20.876%

(*****_Based on 15.5% basis from 1.4.2012 to 31.12.2012 and 16.5% from 1.1.2013 to 31.3.2013)_

39. Considering the pre-tax rate of return on equity as above, the return on equity has been computed as follows:

(₹ in lakh)

	2012-13	**2013-14**
Opening Gross Notional Equity	18662.92	18712.68
Addition due to Additional Capital Expenditure	49.76	62.43
Closing Equity	18712.68	18775.11
Average Equity	18687.80	18743.90
Base Rate for Return on Equity	15.750%	16.500%
Tax Rate	20.008%	20.961%
Rate of ROE (pre-tax)	19.689%	20.876%
Return on Equity	**3679.44**	**3912.98**

Interest on Loan

40. The normative loan in respect of the project has already been repaid. The normative loan on account of the admitted additional capital expenditure during the respective years of the tariff period 2009-14 have been considered as fully paid, as the admitted depreciation is more than the amount of normative loan in these years. As such, the Interest on loan during the period 2009-14 is worked out as 'Nil'.

Depreciation

41. The date of commercial operation of the generating station is 15.2.2000. Since the generating station has completed 12 years of operation as on 15.2.2012, the remaining depreciable value has been spread over the balance useful life of the assets. There is reduction of ₹4.36 lakh in the value of freehold land from 2012-13. Accordingly, depreciation has been computed as under:

(₹in lakh)

	2012-13	**2013-14**
Gross Block as on 31.3.2009	49101.63	49267.49
Additional capital expenditure during 2009-14	165.86	208.10
Closing gross block	49267.49	49475.59
Average gross block	49184.56	49371.54
Land related cost	294.41	294.41
Depreciable Value	44001.14	44169.42
Balance Useful life of the asset	22.87	21.87
Remaining Depreciable Value	20044.33	19373.00
Depreciation	**876.36**	**885.74**

Operation & Maintenance Expenses

42. O&M expenses as allowed in order dated 10.12.2013 in Petition No. 154/GT/2013 has been considered as under:

(₹ in lakh)

2012-13	2013-14
3327.78	3518.13

Interest on working capital

43**. Receivables:** In terms of Regulation 18(1) (c) (i) of 2009 Tariff Regulations, receivables equivalent to two months of fixed cost has been considered as under:

(₹ in lakh)

2012-13	2013-14
1357.50	1432.14

44**. Maintenance Spares:** Regulation 18(1) (c) (ii) of 2009 Tariff Regulations, provides for Maintenance spares @ 15% of operation and maintenance expenses as specified in Regulation 19, the same has been considered as under:

(₹ in lakh)

2012-13	2013-14
499.17	527.72

45. **O&M Expenses (one month):** Regulation 18(1) (c) (ii) of 2009 Tariff Regulations provides for operation and maintenance expenses for one month and the same has been considered in tariff as under.

(₹ in lakh)

2012-13	2013-14
277.32	293.18

Rate of interest on working capital

46. Regulation 18(3) of 2009 Tariff Regulations provide that the Rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on 1.4.2009 or on 1st April of the year in which the generating station or a unit thereof or the transmission system, as the case may be, is declared under commercial operation, whichever is later.

47. In accordance with Regulation 18(3) of the 2009 Tariff Regulations, rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on 1.4.2009 or on 1st April of the year in which the generating station or a unit thereof or the transmission system, as the case may be, is declared under commercial operation, whichever is later. The SBI PLR as on 1.4.2009 was 12.25% has been considered for computation of the interest on working capital. Accordingly, Interest on Working Capital has been calculated as under:

(₹ in lakh)

	2012-13	2013-14
Maintenance Spares	499.17	527.72
O & M expenses	277.32	293.18
Receivables	1357.50	1432.14
Total	2133.98	2253.04
Interest on Working Capital @ 12.25%	**261.41**	**276.00**

Annual Fixed charges for 2012-14

48. Accordingly, the annual fixed charges in respect of the generating station approved by the Commission for the period 2012-14 are summarized as under:

(₹ in lakh)

	2012-13	2013-14
Return on Equity	3679.44	3912.98
Interest on Loan	0.00	0.00
Depreciation	876.36	885.74
Interest on Working Capital	261.41	276.00
O & M Expenses	3327.78	3518.13
Total	**8145.00**	**8592.84**

49. The difference between the annual fixed charges already recovered by the petitioner and the annual fixed charges determined by this order as above shall be adjusted in terms of Clause (6) of Regulation 6 of the 2009 Tariff Regulations.

<u>Determination of Annual Fixed Charges for the period 2014-19</u>

50. The annual fixed charges determined by the Commission in respect of the generating station for the period 2009-14 are as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Return on Equity	4387.56	4325.88	4279.68	3679.44	3912.98
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Depreciation	2499.40	2493.48	2498.92	876.36	885.74
Interest on Working Capital	284.42	291.06	298.73	261.41	276.00
O & M Expenses	2816.33	2977.42	3147.73	3327.78	3518.13
Total	**9987.71**	**10087.84**	**10225.06**	**8145.00**	**8592.84**

51. As stated, the petitioner in this petition has also prayed for the determination of annual fixed charges of the generating station for the period 2014-19 in accordance with the provisions of the 2014 Tariff Regulations. Accordingly, the annual fixed charges claimed by the petitioner for the period 2014-19 are as under:

(₹in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	896.17	896.86	896.94	903.43	919.00
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	3928.94	3929.89	3929.99	3937.83	3954.67
Interest on Working Capital	363.88	380.72	398.63	418.07	439.18
O & M Expenses	4576.46	4880.52	5204.78	5550.58	5919.36
Total	**9765.46**	**10087.98**	**10430.34**	**10809.90**	**11232.21**

52. In response to the directions of the Commission the petitioner has submitted additional information and has served copies of the same on the respondents. No reply has been filed by the respondents. Accordingly, the claims of the petitioner for the period 2014-19 are considered and allowed on prudence check, as detailed in the subsequent paragraphs.

Capital Cost

53. Clause (1) 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. Clause (3) of Regulation 9 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) xxxx*
>
> *(c) xxxx*

54. Accordingly, the closing capital cost considered by the Commission as on 31.3.2014 in this order is ₹49475.59 lakh. This has been considered as the opening capital cost as on 1.4.2014 for computation of tariff for the period 2014-19.

Actual/ Projected Additional Capital Expenditure during 2014-19

55. Clause (3) of Regulation 7 of the 2014 Tariff Regulations provides that the application for determination of tariff shall be based on admitted capital cost including any additional capital expenditure already admitted upto 31.3.2014 (either based on actual or projected additional capital expenditure) and estimated additional capital expenditure for the respective years of the tariff period 2014-15 to 2018-19.

56. 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;*
>
> *(v) Any liability for works executed prior to the cut-off date, after prudence check of the details of such un-discharged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.;*
>
> *(vi) Any liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;*
>
> *(vii) Any additional capital expenditure which has become necessary for efficient operation of generating station other than coal / lignite based stations or transmission system as the case may be. The claim shall be substantiated with the technical justification duly supported by the documentary evidence like test results carried out by an independent agency in case of deterioration of assets, report of an independent agency in case of damage caused by natural calamities, obsolescence of technology, up-gradation of capacity for the technical reason such as increase in fault level;*

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

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

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

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

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

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

57. The year-wise breakup of the projected additional capital expenditure claimed by the petitioner is as under:

(₹in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Additional capital expenditure claimed on gross basis	30.50	0.00	7.00	270.00	312.00
De-capitalization	0.39	0.00	3.78	22.90	21.19
Net Additional capital expenditure claimed	**30.11**	**0.00**	**3.22**	**247.10**	**290.81**

* *note: all figures have been rounded off to the nearest amount*

58. Based on the submissions and the documents available on record, the claims of the petitioner for the period 2014-19 have been examined and allowed on prudence check, after reduction of the gross value of old assets, wherever necessary, as detailed in the subsequent paragraphs.

2014-15

(₹ in lakh)

Sl. No	Assets/ Works	Amount claimed	Justification submitted by the petitioner	Remarks on admissibility	Amount Allowed
1	Purchase of Bus	10.50	The same was allowed by the Commission in 2011-12, but processed in 2014-15	The Commission vide order dated 30.11.2011 in Petition No. 121/2010 had allowed a projected expenditure of ₹22.00 lakh in 2011-12. In view of this, the claim of the petitioner is considered. However, as the petitioner has not furnished the de-capitalized value of the old asset, an amount of ₹10.00 lakh (de-capitalized value furnished in Petition No. 121/2010) has been considered as the de-capitalized value of the old asset in this order. Accordingly, the expenditure of ₹0.50 lakh has only been allowed.	**0.50** (10.50-10.00)
2	Purchase of Digital Plasma cutting Machine, Portable ARC machine spares	10.00	The same was allowed by the Commission in 2009-10, but processed in 2014-15 as per the approval of CO dated 5.5.2014.	**Allowed** under Regulation 14(3)(viii) as the assets which are necessary for efficient operation of the generating station. The Commission had already approved ₹2.00 lakh in order dated 30.11.2011 in Petition No. 121/2010 for the year 2009-10.	**10.00**
3	Purchase of Mini Truck	9.61	Replacement of Old mini Truck, which has completed its useful life as per NHPC disposal policy. Cost estimate is based on telephonic enquiry from authorized dealer in Siliguri.	**Allowed** under Regulation 14(3)(viii) as the asset is considered necessary for efficient and successful operation of the generating station. The gross value of the replaced old asset is ₹0.39 lakh	**9.61** (10.00-0.39)
Total amount claimed		**30.11**			**20.11**
Total amount allowed					

2015-16

59. No additional capitalization and/or de-capitalization has been claimed by the petitioner for the period 2015-16.

2016-17

(₹in lakh)

Sl. No	Assets/ Works	Amount Claimed	Justification submitted by the petitioner	Remarks for admissibility	Amount Allowed
1	Purchase of Maruti Gypsy	3.22 (7.00-3.378)	Replacement of old Maruti Gypsy, 'SK-04P-2216' which has completed its useful life as per NHPC disposal policy. The cost estimate is based on the telephonic enquiry from the authorized dealer in Siliguri plus an enhancement @7% per annum.	**Allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations, as the asset is considered necessary for successful and efficient operation of the generating station. The gross value of replaced old asset is ₹ 3.78 lakh	**3.22** (7.00.3.78)
Total amount claimed		**3.22**			
Total amount allowed					**3.22**

2017-18

(₹in lakh)

Sl. No.	Assets/ Works	Amount Claimed	Justification submitted by the petitioner	Remarks for admissibility	Amount Allowed
1	Purchase of Tipper	13.22 (20.00-6.78)	Replacement of old Tata Tipper 'SK-04D-0545', which has completed its useful life as per NHPC disposal policy. Cost estimate is based on telephonic enquiry from authorized dealer in Siliguri plus enhancement @7% per annum.	**Allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations as the asset is considered necessary for successful and efficient operation of the generating station. The gross value of old asset is indicated as ₹6.78 lakh	**13.22** (20.00-6.78)
2	Replacement of 1 no. G40 Governor with new one having RGMO	233.88 (250.00-16.12)	At present the generating station has electro-hydraulic G-40 type Governor which was	**Allowed** under Regulation 14(3)(viii) of the 2014 Tariff	**233.88** (250.00-16.12)

			supplied by M/s BHEL more than 16 year back. As this technology is going to be obsolete shortly, up gradation of the system in a phased manner shall be required to make the system compatible with the existing/ proposed control and automation system. Therefore operation of generators under restricted governor mode of operation(RGMO) are required to be ensured for operation of generating units which cannot be achieved with existing G-40 governor system. Cost estimate is based on supply order placed on M/s BHEL during 2012-13 for replacement of 01 no. G-40 governor.	Regulations as the asset will facilitate the successful and efficient operation of generating station. The gross value of old asset is indicated as ₹16.12 lakh	
Total amount claimed		247.10			**247.10**
Total amount allowed					**247.10**

2018-19

(₹in lakh)

Sl. No.	Assets/ Works	Amount Claimed	Justification submitted by the petitioner	Remarks for admissibility	Amount Allowed (In lakh)
1	Replacement of 1no. G40 Governor with new one having RGMO	233.88 (250-16.12)	At present the generating station has electro-hydraulic G-40 type Governor which was supplied by M/s BHEL more than 16 year back. As this technology is going to be obsolete shortly, up-gradation of the system in a phased manner shall be required to make the system compatible with the existing/ proposed control and automation system. Therefore operation of generators under restricted governor mode of operation(RGMO) are required to be ensured for operation of	**Allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations as the asset will facilitate the successful and efficient operation of generating station. The gross value of old asset is indicated as ₹16.12 lakh	**233.88** (250-16.12)

			generating units which cannot be achieved with existing G-40 governor system. Cost estimate is based on supply order placed to M/s BHEL during 2012-13 for replacement of 01 no. G-40 governor.		
2	Purchase of Loader	39.82 (42.00-2.18)	On replacement of old CAT Loader, has completed its useful life as per NHPC disposal policy. Cost estimate based on telephonic enquiry from authorized dealer in Kolkata plus enhancement @7% per annum.	**Allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations as the asset will facilitate the successful and efficient operation of generating station. The gross value of the old asset is ₹2.18 lakh	**39.82** (42.00-2.18)
3	Purchase of Fire Tender	20.00	On replacement of old Fire tender 'SK-04D-0543', which has completed its useful life as per NHPC disposal policy. Cost estimate based on telephonic enquiry from authorized dealer in Siliguri plus enhancement @7% per annum.	**Allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations as the asset will facilitate the successful and efficient operation of generating station. The gross value of old asset is ₹2.90 lakh	**17.10** (20.00-2.90)
Total amount claimed		290.81			
Total amount allowed					**290.81**

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

(₹in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Additional capital expenditure allowed	20.50	0.00	7.00	270.00	312.00
De-capitalization	0.39	0.00	3.78	22.90	21.19
Net Additional Capital expenditure allowed	**20.11**	**0.00**	**3.22**	**247.10**	**290.81**

Capital Cost for 2014-19

61. As stated, the closing capital cost as on 31.3.2014 is ₹49475.59 lakh. The same has been considered as the opening capital cost as on 1.4.2014. Accordingly, the capital cost considered for the purpose of tariff for the period 2014-19 is as under:

(₹in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	49475.59	49495.70	49495.70	49498.92	49746.02
Admitted Additional Capital expenditure	20.11	0.00	3.22	247.10	290.81
Capital Cost as on 31 March of the year	**49495.70**	**49495.70**	**49498.92**	**49746.02**	**50036.83**

Debt-Equity

62. In terms of Regulation 19 of the 2014 Tariff Regulations, the debt-equity ratio of 70:30 has been considered for the purpose of tariff.

Return on Equity

63. 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.*

64. 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."

65. In line with the above, base rate for Return on Equity has been grossed up with the MAT Rate for the year 2013-14. Accordingly, Return on Equity has been computed as under:

(₹ in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Opening Equity	18775.11	18781.14	18781.14	18782.11	18856.24
Addition due to Additional capital expenditure	6.03	0.00	0.97	74.13	87.24
Closing Equity	18781.14	18781.14	18782.11	18856.24	18943.48
Average Equity	18778.13	18781.14	18781.63	18819.17	18899.86
Return on Equity (Base Rate)	16.500%	16.500%	16.500%	16.500%	16.500%
Tax rate for the year	20.961%	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax)	20.876%	20.876%	20.876%	20.876%	20.876%
Return on Equity (Pre Tax)	**3920.12**	**3920.75**	**3920.85**	**3928.69**	**3945.53**

66. The petitioner is directed to furnish on affidavit, the effective tax rates along with the Tax Audit Report for the period 2015-19 at the time of truing-up of tariff of the generating station in terms of the 2014 Tariff Regulations.

Interest on Loan

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

> ***"26. Interest on loan capital:*** *(1) The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.*
>
> *(2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.*
>
> *(3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-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 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 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."

68. The normative loan for the project has already been repaid. The normative loan on account of the admitted additional capital expenditure during the respective years of the tariff period have also been considered as fully paid, as the admitted depreciation is more than the amount of normative loan in these years. As such, Interest on loan during the period 2014-19 is worked out as 'Nil'.

Depreciation

69. 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) alongwith 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."

70. The COD of the generating station is 15.2.2000. Since the station has completed 12 years of operation as on 15.2.2012, the remaining depreciable value has been spread over the balance useful life of the project. Accordingly, depreciation has been computed as under:

(₹ in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Opening Gross Block	49475.59	49495.70	49495.70	49498.92	49746.02
Addition due to Additional Capital Expenditure	20.11	0.00	3.22	247.10	290.81
Closing Gross Block	49495.70	49495.70	49498.92	49746.02	50036.83
Average Gross Block	49485.65	49495.70	49497.31	49622.47	49891.43
Land related cost	294.41	294.41	294.41	294.41	294.41
Depreciable Value	44272.11	44281.16	44282.61	44395.26	44637.31
Balance Useful life of the asset	20.87	19.87	18.87	17.87	16.87
Remaining Depreciable Value	18615.70	17733.07	16842.17	16064.54	15421.20
Depreciation	**891.89**	**892.35**	**892.43**	**898.86**	**914.00**

O&M Expenses

71. The generating station is in operation for three or more years as on 1.4.2014. Accordingly, in terms of sub-section (a) of clause (3) of Regulation 29 of the 2014 Tariff Regulations, the year-wise O&M expense norms considered for the generating station of the petitioner for the period 2014-19 is as under:

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
4576.46	**4880.52**	**5204.78**	**5550.58**	**5919.36**

Interest on working capital

72. 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."*

73. Receivables have been worked out and allowed as under:

(₹ in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Two months of annual fixed cost	1625.34	1679.00	1736.06	1799.31	1869.63

74. Maintenance spares have been worked out and allowed as under:

(₹ in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Cost of maintenance spares (15% of O & M)	686.47	732.08	780.72	832.59	887.90

75. O&M expenses for one month have been worked out and allowed as under:

					(₹ in lakh)
	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
O & M for one month	381.37	406.71	433.73	462.55	493.28

Rate of interest on working capital

76. Clause (3) of Regulation 28of 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."

77. 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.

78. Necessary computations in support of interest on working capital are appended below:

(₹ in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Maintenance Spares	686.47	732.08	780.72	832.59	887.90
O & M expenses	381.37	406.71	433.73	462.55	493.28
Receivables	1625.34	1679.00	1736.06	1799.31	1869.63
Total	2693.18	2,817.79	2,950.51	3,094.45	3,250.81
Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
Interest on Working Capital	**363.58**	**380.40**	**398.32**	**417.75**	**438.86**

79. Accordingly, the annual fixed charges approved for the generating station for the period from 1.4.2014 to 31.3.2019 is summarized as under**:**

(₹in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Return on Equity	3920.12	3920.75	3920.85	3928.69	3945.53
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Depreciation	891.89	892.35	892.43	898.86	914.00
Interest on Working Capital	363.58	380.40	398.32	417.75	438.86
O & M Expenses	4576.46	4880.52	5204.78	5550.58	5919.36
Total	**9752.05**	**10074.03**	**10416.38**	**10795.88**	**11217.75**

Normative Annual Plant Availability Factor (NAPAF)

80. 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, the NAPAF of 90% has been considered for this generating station.

Design Energy

81. The Commission in its order dated 30.11.2011 in Petition No.121/2010 had approved the annual Design Energy (DE) of 338.61 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 hereunder:

Month	**Design Energy (MU)**
April	22.83
May	30.29
June	41.04
July	42.41
August	42.41
September	41.04
October	40.10
November	24.44
December	15.04
January	13.46
February	11.88
March	13.67
Total	**338.61**

Application Fee and Publication Expenses

82. The petitioner has deposited the filing fees for the period 2014-19 in terms of the provisions of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012. The petitioner has published the notice of the tariff petition for 2014-19 in the newspapers in terms of the Central Electricity Regulatory Commission (Procedure for making of application for determination of tariff, publication of the application and other related matters) Regulation, 2004 and has vide affidavit dated 5.12.2014 submitted that it has incurred an expenditure of Rs 200449/- for the same. Accordingly, the petitioner has sought the reimbursement of filing fee and also the expenses incurred towards publication of notices for application of tariff for the period 2014-19. Regulation 52 of the 2014 Tariff Regulations provides as under:

"The following fees and charges and expenses shall be reimbursed directly by the beneficiary in the manner specified herein:

(1)The application filing fee and the expenses incurred on publication of notices in the application for approval of tariff, may in the discretion of the Commission, be allowed to be

recovered by the generating company or the transmission licensee, as the case may be, directly from the beneficiaries or the long term transmission customers/DICs, as the case may be."

83. The Commission after careful consideration has decided that filing fee will be reimbursed in the following cases:

(a) Main petitions for determination of tariff;

(b) Petitions for revision of tariff due to truing-up of expenditure of inter-state transmission system.

As the application filing fees paid by the generating companies are on MW basis in accordance with the Payment of Fee Regulations, 2012 and are reimbursed at the time of determination of tariff, no filing fees is required to be paid by them again at the time of filing of application for revision of tariff of these generating stations based on truing-up of the expenditure.

Filing fees paid for filing the Review Petitions, Interlocutory Applications and other Miscellaneous Applications will not be reimbursed in tariff. The Commission has also decided to reimburse the expenses on publication of notices as such expenses are incurred to meet the statutory requirement of transparency in the process of determination of tariff.

84. Accordingly, the expenses incurred by the petitioner towards tariff application filing fees and publication of notices in connection with the present petition shall be directly recovered from the respondent beneficiaries on pro rata basis.

85. The annual fixed charges approved for the generating station for the period 2014-19 as above are subject to truing-up in terms of Regulation 8 of the 2014 Tariff Regulations.

86. Petition No. 232/GT/2014 is disposed of in terms of the above.

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