CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 134/TT/2015

Coram:

Shri Gireesh B. Pradhan, Chairman
Shri A.K. Singhal, Member
Shri A.S.Bakshi, Member
Dr. M.K. Iyer, Member

Date of Order : 19.09.2016

In the matter of:

Truing-up of transmission tariff for the period from 1.4.2009 to 31.3.2014 and determination of transmission tariff for the period from 1.4.2014 to 31.3.2019 under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009, and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 for transmission system constructed, maintained and operated by Torrent Power Grid Ltd.

And in the matter of:

Torrent Power Grid Limited (TPGL)
Torrent House, Off Ashram Road.
Navrangpura, Ahmedabad **………Petitioner**

Vs

1. Torrent Power Limited (TPGL)
   Torrent House, Off. Ashram Road.
   Navrangpura, Ahmedabad

2. Power Grid Corporation of India Ltd.
   ‘Saudamini’, Plot No-2,
   Sector-29, Gurgaon -122 001 (Haryana)

3. Western Regional Power Committee,
   F-3, MIDC Area, Marol
   Opp. SEEPZ, Central Road
   Andheri (East), Mumbai-400 093

4. PTC India Limited,
   2nd Floor, NBCC Tower
   15, Bhikaji Cama Place
   New Delhi- 110 066

5. M.P. Power Management Company Limited
   Shakti Bhawan, Vidyut Nagar, Rampur
   Jabalpur-482 008

6. Gujarat Urja Vikas Nigam Limited,
   Sardar Patel Vidyut Bhawan,
   Race Course Road, Vadodara-390 007

7. Maharashtra State Electricity Distribution
   Company Limited,
   5th floor, Prakashgad, Bandra (East),
   Mumbai-400 051

8. Chhattisgarh State Electricity Board,
   P.O. Sunder Nagar, Dangania, Raipur
   Chhattisgarh-492 013

9. Goa Electricity Department,
   Government of Goa,
   Vidyut Bhawan, Panaji,
   Near Mandvi Hotel, Goa-403 001

10. UT of Dadra Nagar Haveli,
    Silvassa-396 230

11. UT of Daman and Diu,
    Moti Daman-396 220

.....Respondents

For Petitioner: Shri Chetan M. Bundela, TPGL
Shri Tapan J. Pandya. TPGL
Shri LalitKumar Vashistha, TPGL

For Respondents: None

ORDER

The present petition has been filed by Torrent Power Grid Limited ("the petitioner") for truing-up of capital expenditure of 2009-14 tariff block under Regulation 6 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "the 2009 Tariff Regulations") and for determination of tariff of 2014-19 tariff block for LILO of Vapi – Jhanore, 400 kV D/C Line from SUGEN to a point near Gandhar with LILO of one circuit of existing Gandhar – Dehgam 400 kV D/C Line, 400 kV line from LILO Point on Jhanore (Gandhar)-Dehgam line to 400 kV Sub-station of PGCIL at Pirana (Kamod) and opening of LILO Point near Gandhar under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as "2014 Tariff Regulations").

Background of the case

2. The petitioner a joint venture between Torrent Power Limited (TPL) a Torrent Group Company and Power Grid Corporation of India Limited (PGCIL) is an inter-State transmission licensee. The petitioner was granted inter-State transmission license on 16.5.2007, to build, own and operate the transmission system for evacuation of power from SUGEN CCPP. On obtaining the inter-State transmission licence, the implementation of the transmission system associated with SUGEN CCPP was undertaken by the petitioner. Subsequently, the licence was amended by the Commission vide order dated 1.12.2010 in Petition No. 10/2010

3. The investment approval for the instant transmission system was accorded by the Board of Directors of the petitioner's company in the meeting held on 21.8.2007 at an estimated cost of ₹36400 lakh. However, while granting the transmission licence to the petitioner, the Commission vide its order dated 16.5.2007 in Petition No. 97/2006 approved an amount of ₹35800 lakh for the whole project.

4. The entire project has been executed in three different phases as given hereunder:-

(i) **Phase 1**: 400 kV Loop in Loop out (LILO) at SUGEN bus on one circuit of the 400 kV Gandhar (Jhanor) – Vapi Line of PGCIL;

(ii) **Phase 2**: 400 kV D/C line from SUGEN to the point near Gandhar and LILO on one circuit of the Gandhar (Jhanor)-Dehgam Line of PGCIL near Gandhar;

(iii) **Phase 3**: Extending 400 kV D/C line from LILO point on Jhanor (Gandhar)- Dehgam line to 400 kV Sub-station of PGCIL at Pirana (Kamod) and opening of LILO point near Gandhar along with two numbers of 400 kV line bays at Pirana (PGCIL) Sub-Station.

5. Phase-1, Phase-2 and Phase-3 of the project were commissioned on 1.3.2009 and 1.4.2010 and 1.4.2011 respectively. The Commission had determined the tariff for Phase-1 in Petition No. 275/2009 vide order dated 11.7.2011 for 2004-2009 period and in Petition No 159/2009 vide order dated 19.7.2011 for 2009-14 period. Phase-2 of the project was approved vide order dated 22.4.2013 in Petition No. 318/2010 for the period from COD to 31.3.2014

and tariff for Phase-3 was determined by the Commission in Petition No. 106/TT/2012 vide order dated 15.1.2015 from the period from COD to 31.3.2014. Apportioned approved cost of ₹2402.00 lakh, ₹11542.00 lakh and ₹24695.76 lakh for Phase-1, 2 and 3 respectively was condoned. Total capital cost ₹38639.00 lakh in Petition Nos. 159/2009, 318/2010 and 106/TT/2012 in its orders dated 19.7.2011, 22.4.2013 and 9.1.2015 respectively was allowed. Hence, total apportioned approved cost is higher than the cost of ₹35800.00 lakh approved at the time of granting licence.

6. GMDCL agreed that one third (1/3rd) of the capital cost will be borne by GMDCL. Accordingly, 2/3d of the capital cost actually incurred as per the Auditor's Certificate has been considered for the transmission system.

7. This order has been issued after considering the petitioner's affidavits dated 16.5.2015, 30.5.2016 and 15.7.2016.

8. No comments or suggestions have been received from the general public in response to the notices published by the petitioner under Section 64 of the Electricity Act, 2003 ("the Act"). The petitioner has served the petition to the respondents. None of the respondents have filed any reply to the petition.

Truing-up of Annual Fixed Charges for 2009-14 Tariff Period

Capital Cost and Additional Capital Expenditure

9. Regulation 7(1) of the 2009 Tariff Regulations provides as under :-

"(1) Capital cost for a project shall include:

(a) the expenditure incurred or projected to be incurred, including interest during construction and financing charges, any gain or loss on account of foreign exchange risk variation during construction on the loan - (i) being equal to

70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed, - up to the date of commercial operation of the project, as admitted by the Commission, after prudence check;

(b) capitalised initial spares subject to the ceiling rates specified in regulation 8; and

(c) additional capital expenditure determined under regulation 9:

Provided that the assets forming part of the project, but not in use shall be taken out of the capital cost."

10. Details of apportioned approved cost, capital cost as on COD claimed by the petitioner in its original petition and actual additional capital expenditure and de-capitalization (as per Form-9) incurred for the Phases 1,2 and 3 are summarized below:-

(₹ in lakh)

	Apportioned approved cost (as per Form 5D)	**Cost claimed up to actual COD (on cash basis)**	**Additional Capitalisation on cash basis**					**Total completion cost as on 31.3.2014**
			2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**	
Phase-1	2402.00	1322.98*	237.98	0.00	-(6.83)	0.00	0.00	1554.13
Phase-2	11542.00	7747.81	-	694.32	0.32	-6.39	-24.20	8411.86
Phase-3	24695.76	18518.70	0.00	0.00	291.78	48.00	453.24	19311.72

*Admitted in 2004-2009.

Time Over-run

Phase -1

11. Phase 1 was put under commercial operation on 1.3.2009. As Phase -1 was entirely funded by equity, no debt was raised, the petitioner has not claimed any IDC and IEDC for Phase-1.

Phase-2

12. The petitioner, vide affidavit dated 29.11.2010 in Petition No.318/TT/2010, had submitted that the Letter of Award (LoA) was placed on 18.11.2008. The timeline for commissioning of the transmission line was 15 months from the date of LoA, i.e. 1.3.2010. However, the asset has been put under commercial operation on 1.4.2010. Accordingly, there was a delay of 1 month in commissioning of the asset which was disallowed by Commission vide order dated 22.4.2013 in Petition No. 318/TT/2010.

Phase-3

13. As per order dated 9.1.2015 in Petition No. 106/TT/2012, the schedule commissioning of Phase-3 was 20 months from the date of issue of Letter of Award. The petitioner has submitted that the Letter of Award was issued on 18.11.2008. Accordingly, the schedule date of commissioning of the project works out to 17.7.2010 i.e. 1.8.2010. The assets were put into commercial operation on 1.4.2011. Hence, there is a delay of 8 months which was disallowed by the Commission vide order dated 9.1.2015 in Petition No. 106/TT/2012.

Treatment of IDC

14. The petitioner vide Form 5B has claimed Interest during Construction (IDC) of ₹ 223.91 lakh and ₹ 1247.85 lakh for Phase-2 and Phase-3 respectively. Based on the information submitted by the petitioner in line with truing up vide affidavit dated 30.5.2016, IDC has been worked out on cash basis considering 1 month and 8 months of time over-run for Phase-2 and Phase-3 respectively. Accordingly, IDC of ₹171.08 lakh and ₹496.79 lakh have been worked out based

upon the latest available information. Hence, the IDC disallowed is ₹ 52.83 lakh and ₹751.06 lakh for Phase 2 and Phase 3 respectively.

15. In order dated 9.1.2015 in Petition No. 106/TT/2012 the petitioner was given liberty to claim liquidated damages (LD) from the contractor for the delay in commissioning of the asset. It was also observed that if the LD realized by the petitioner is more than the IDC and IEDC disallowed, the same shall be adjusted at the time of truing up of 2014-19 tariff period (i.e. during financial year 2014-15). The relevant extract of order is as under:-

> "17. We have considered the submissions made by the petitioner regarding time over-run. As regards the inadequate deployment of resources and the consequent delay in completion of work by Gammon India Ltd., we are of the view that it is a bilateral issue between the petitioner and its contractor which requires to be settled between them and hence we would not like to go into it. The petitioner may claim liquidated damages (LD) from the contractor for the delay in commissioning of the asset. If the LD realized by the petitioner is more than the IDC/IEDC disallowed, the same shall be adjusted at the time of truing up. As regards the change in the implementation of the scheme, it is observed that the PGCIL has concurred with the petitioner's proposal for the change in the scheme vide its letter dated 28.1.2008 and whereas the LoA for the works covered under Phase-III was placed on 18.11.2008. Therefore, the petitioner had ten months time to incorporate the changes to scheme before the LoA was awarded. It has been further observed that the approval for Phase-III was granted on 17.11.2008 and the LoA was immediately was placed on Page 9 of 31 Order in Petition No. 106/TT/2012 18.11.2008. Therefore, change in the scheme cannot be considered as one of the reasons for the time over-run as contended by the petitioner."

16. The petitioner vide affidavit dated 30.5.2015 has submitted that the LD amount of ₹741.66 lakh has been adjusted against the outstanding liability during the financial year 2014-15. Accordingly, the adjustment of liquidity damages has been considered as part of 2014-19 tariff period (i.e. during financial years 2014-15)

<u>Treatment of IEDC</u>

17. The petitioner has claimed Incidental Expenditure During Construction

(IEDC) of ₹96.88 lakh and ₹418.47 lakh for Phase-2 and Phase-3 respectively. IDC and IEDC is disallowed for 1 month and 8 months for Phase-2 and Phase-3. Accordingly, disallowed IEDC for Phase-2 and Phase-3 is ₹6.46 lakh and ₹119.56 lakh respectively.

Initial Spares

18. Regulation 8 of the 2009 Tariff Regulations provides that:-

"Initial spares shall be capitalised as a percentage of the original project cost, subject to following ceiling norms:

(iv) Transmission system

(a)Transmission line - 0.75%
(b) Transmission Sub-station - 2.5%
(c) Series Compensation devices and HVDC Station - 3.5%....."

19. The petitioner in Petition No. 106/TT/2012 has claimed initial spare amounting ₹78.58 lakh and ₹123.80 lakh towards sub-station and transmission line respectively. The cost of initial spares for sub-station i.e. ₹78.58 lakh was included in the capital cost claimed as on COD. However, the cost of initial spares of transmission line of ₹123.80 lakh was projected to be incurred during the year 2013-14 and as such that the same was considered vide order dated 9.1.2015 in Petition No. 106/TT/2012.

20. The petitioner vide affidavit dated 30.5.2016, in the instant petition has submitted that it has incurred cost of ₹78.68 lakh towards initial spares for sub-station and the initial spares towards transmission line is estimated to be procured during the financial year 2016-17.

21. The entire project got commissioned with completion of Phase-3, thus

spares of Sub-station have been reviewed with reference to entire project cost claimed and adjustment in IDC and IEDC.

22. Details of allowed/restricted spares towards sub-station are given below:-

(₹ in lakh)

Calculation of initial spares for Project as a whole						
Cost as on cut-off date pertaining to respective element	Capital cost after disallowed IDC and IEDC	Initial spares claimed	Proportionate initial spares claimed after disallowing IDC and IEDC	Ceiling limits as per clause 8 of 2009 Regulation	Initial spares worked out	Excess initial spares claimed
(a)	**(b)**	**(c)**	**(d) = (c)*(b)/(a)**	**(e)**	**(f)= {(b)-(d)}*(e)/{100%-(e)}**	**(g) = (f) - (d)**
1523.25	1471.53	78.68	76.01	2.50%	35.78	40.23

23. Accordingly, the excess initial spares amounting ₹40.23 lakh in case of Sub-station has been reduced from the capital cost as on COD of Phase 3. The procurement of initial spare towards transmission line was not carried out within cut-off date. The cost of initial spares towards transmission line amounting to ₹123.80 lakh is neither forming part of the capital cost as on COD nor forming part of the additional capital cost actually incurred during the tariff period 2009-14. Hence, the initial spares claimed and allowed towards transmission line has been considered as nil for determination of tariff of 2009-14 period.

Capital Cost allowed as on COD

24. Based on the above, the capital cost claimed and allowed as on COD are as follows:-

(₹ in lakh)

Phase	Capital cost claimed as on COD on accrual basis	Un-discharged liabilities	Capital cost claimed on cash basis	Disallowed IDC	Disallowed IEDC	Excess initial spare	Capital cost on cash basis allowed as on COD
1	**2**	**3**	**4 (2-3)**	**5**	**6**	**7**	**9=(4-5-6-7)**
Phase 1	1560.96*	237.98	1322.98	0	0	0	**1322.98**
Phase 2	8841.59	1093.78	7747.81	52.83	6.46	0	**7688.52**
Phase 3	20934.60	2415.90	18518.70	751.06	119.56	40.23	**17607.86**

* After adjusting the grant of ₹780.48 lakh received from GMDC and undischarged liability of ₹16.19 lakh written back

Additional Capital Expenditure

25. The petitioner has claimed additional capital expenditure under Regulation 9(1)(i) of the 2009 Tariff Regulations:-

> "Additional Capitalisation: (1) The capital expenditure incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:
>
> (i) Undischarged liabilities;
>
> (ii) Works deferred for execution;
>
> (iii) Procurement of initial capital Spares within the original scope of work, subject to the provisions of Regulation 8;
>
> (iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and
>
> (v) Change in Law:"

26. Regulation 3(11) of 2009 Tariff Regulations defines cut-off date as-

> "cut-off date means 31st March of the year closing after 2 years of the year of commercial operation of the project, and incase the project is declared under commercial operation in the last quarter of the year, the cut-off date shall be 31st March of the year closing after 3 years of the year of commercial operation".

27. The cut-off date for Phase-1, Phase-2 and Phase-3 is 31.3.2012, 31.3.2013 and 31.3.2014 respectively. The petitioner has claimed additional

expenditure and de-capitalization in all three phases. Phase wise details are as follows:-

Phase-1

(₹ in lakh)

Particulars	2009-10	2011-12	Remarks
Transmission Line	237.98	0.00	Payment of undischarged liability under Regulation 9(1)(i) of 2009 Tariff Regulations
Motor Vehicles	0.00	-6.83	De-cap
Total	**237.98**	**-6.83**	

Phase-2

(₹ in lakh)

Particulars	2010-11	2011-12	2012-13	2013-14	Remarks
Transmission Lines	694.32	0.32	0.00	-16.00	(i)(2010-11 and 2011-12) Payment of undischarged liabilities under Regulation 9(1) (i) of 2009 Tariff Regulations **(ii)** (2013-14) Payment received from GETCO
Vehicle	0.00	0.00	-6.39	0.00	De-capitalisation
Office & Communication Equipment	0.00	0.00	0.00	-8.22	De-capitalisation
Total	694.32	0.32	-6.39	-24.22	

Phase-3

(₹ in lakh)

Particulars	2011-12	2012-13	2013-14	Remarks
Transmission Line	54.88	35.95	314.05	Payment of undischarged liability. Regulation 9(1)(i) of 2009 Tariff Regulation.
Sub station	227.34	20.05	131.19	
Total	282.22	56.00	445.24	
Change in GFA	9.56	-8.00	8.00	Additional capital expenditure under Regulation7(1) and 9 of 2009 Tariff Regulations

28. Based on the undischarged liability admitted as on COD and the information submitted for the purpose of truing up, the phase wise additional capital expenditure allowed during the tariff period 2009-14 is as follows:-

Phase-1

(₹ in lakh)

Particulars	2009-10	2011-12	Remarks
Transmission Line	237.98	0.00	Additional capital expenditure allowed Payment of undischarged liability under Regulation 9(i) of 2009 Tariff Regulations.
Motor Vehicles	0.00	-4.55	The petitioner has de-capitalised amount of ₹6.83 lakh against this asset where as the capital cost considered by the Commission against this asset was ₹4.55 lakh. Hence only ₹4.55 lakh has been considered for de-capitalisation.
Total	237.98	-4.55	

Phase-2

(₹ in lakh)

Particulars	2010-11	2011-12	2012-13	2013-14	Remarks
Transmission Lines	694.32	0.32	0.00	-16.00*	(i) (2010-11 and 2011-12) Payment of undischarged liabilities under Regulation 9(i) of 2009 Tariff Regulations (ii) (2013-14) Payment received from GETCO
Vehicle	0.00	0.00	-6.39	0.00	De-capitalisation
Office & Communication Equipment	0.00	0.00	0.00	-8.20	Petitioner has de-capitalised amounting ₹8.22 lakh against this asset, where as the capital cost considered by Commission against this asset was ₹8.20 lakh. Hence, only ₹8.20 lakh has been considered for de-capitalisation.
Total	694.32	0.32	-6.39	-24.20	

Phase-3

(₹ in lakh)

Particulars	**2011-12**	**2012-13**	**2013-14**	**Remarks**
Transmission Line	47.60	18.13	314.05	Payment of undischarged liability Regulation 9(1)(i) of 2009 Tariff Regulation. The following excess payment of liability are not considered as discharge of liability accordingly dis-allowed (i)₹54.88 lakh claimed against Transmission Line during 2011-12 includes excess payment of ₹7.28 lakh towards Insulator (ii) ₹35.95 lakh claimed against transmission line during 2012-13 includes excess payment of ₹17.82 lakh towards Design & Engineering and Conductor.
Sub station	227.34	20.05	131.19	
Total ACE Allowed	274.94	38.18	445.24	
Change in GFA			9.56	The claim towards change in GFA amounting ₹9.56 during 2009-14 is not allowed

Flow of Liability

29. The undischarged liability as on COD has been claimed by the petitioner as and when the actual payment is made towards those liabilities. Accordingly, the balance of undischarged liabilities as on COD has been determined. Out of the undischarged liabilities as on COD, the petitioner has discharged certain liabilities by payments and has claimed as additional capital expenditure during 2009-14. Accordingly, the flow of liability worked out for the tariff period 2009-14 is as follows:-

(₹ in lakh)

Flow of liability during 2009-14							
Phase	**Un-discharged as on COD and approved by Commission**	**Discharge of liability by payment during 2009-14 has been allowed as ACE of concerned years**					**Balance un-discharged liability as on 31.3.2014**
		2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**	
Phase 1	237.98	237.98	0.00	0.00	0.00	0.00	0.00
Phase 2	1093.78	0.00	694.32	0.32	0.00	0.00	399.14
Phase 3	2415.90	0.00	0	274.94	38.19	445.24	1657.53
Total	**3747.66**	**237.98**	**694.32**	**275.26**	**38.19**	**445.24**	**2056.67**

Capital Cost Considered for the period from 1.4.2009 to 31.3.2014

30. The capital cost as on COD and the additional capital expenditure considered for tariff computation for all the phases are as follows:-

(₹ in lakh)

Particulars	Capital cost allowed as on 1.4.2009 /COD	Additional Capital Expenditure					Capital cost as on 31.3.2014
		2009-10	2010-11	2011-12	2012-13	2013-14	
Phase 1	1322.98	237.98	0.00	-4.55	0.00	0.00	1556.41
Phase 2	7688.52	0.00	694.32	0.32	-6.39	-24.20	8352.57
Phase 3	17607.86	0.00	0.00	274.94	38.18	445.24	18366.22
Total	26619.36	237.98	694.32	270.71	31.79	421.04	28275.20

Debt-equity ratio

31. Clause 1 & 3 of Regulation 12 of the 2009 Tariff Regulations provides that:-

"12. **Debt-Equity Ratio**. (1) For a project declared under commercial operation on or after 1.4.2009, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

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

Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.

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

(2) In case of the generating station and the transmission system declared under commercial operation prior to 1.4.2009, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2009 shall be considered.

(3) Any expenditure incurred or projected to be incurred on or after 1.4.2009 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life

extension shall be serviced in the manner specified in clause (1) of this regulation."

32. The Commission vide RoP dated 15.3.2016 directed the petitioner to submit the details of phase wise infusion of loan and equity. In response, the petitioner, vide affidavit dated 30.5.2016 has submitted that the funds were arranged for the entire project as a whole and the petitioner had infused the equity before the disbursement of loan. The petitioner also submitted that the project was not envisaged or executed separately for each of the phases of the project. The petitioner further prayed that the entire project and its funding should be looked into its entirety instead of phase-wise. The petitioner also submitted that to meet with the total expenditure of ₹32118 lakh, besides the infusion of equity of ₹9000 lakh and GMDC contribution of ₹780 lakh, the petitioner had availed loan amounts to ₹21400 lakh. as per the project completion report of the Lender's engineer the funding was arranged for project as a whole, hence the petitioner submits that the entire project and its funding should be looked into its entirely instead of phase wise.

33. The petitioner has not submitted phase wise allocation in Form 13 (i.e. calculation of weighted average rate of interest on actual loan), Form 14 (i.e. draw down schedule for calculation of IDC and financing charges) and Form 14A (i.e. actual cash expenditure). Instead all these forms are submitted for the project as whole. Accordingly, based on available information in various forms and Auditor Certificates, the actual deployment of fund through debt and equity has been worked out for the project as whole. Hence, the debt-equity ratio for the project as whole has been determined as on COD of concerned phases.

Such debt-equity ratios are applied to the capital cost as on COD of concerned phases. The normative debt-equity ratio (i.e. 70:30) has been considered for the additional capital expenditure of all phases.

34. The details of the debt: equity considered as on COD and as on 31.3.2014 are as follows:-

(₹ in lakh)

Particulars	As on COD					
	Phase I		Phase II		Phase III	
	Amount	%	Amount	%	Amount	%
Debt	926.09	70.00	5855.55	76.16	13211.24	75.03
Equity	396.89	30.00	1832.96	23.84	4396.62	24.97
Total	**1322.98**	**100.00**	**7688.52**	**100.00**	**17607.86**	**100.00**
Particulars	**As on 31.3.2014**					
	Phase-I		**Phase II**		**Phase III**	
	Amount	**%**	**Amount**	**%**	**Amount**	**%**
Debt	1089.49	70.00	6320.39	75.67	13742.09	74.82
Equity	466.92	30.00	2032.18	24.33	4624.13	25.18
Total	1556.41	100.00	8352.57	100.00	18366.22	100.00

Return on Equity ("RoE")

35. Clause (3), (4) and (5) of the Regulation 15 of the 2009 Tariff Regulations provide that:-

"(3) The rate of return on equity shall be computed by grossing up the base rate with the Minimum Alternate/Corporate Income Tax Rate for the year 2008-09, as per the Income Tax Act, 1961, as applicable to the concerned generating company or the transmission licensee, as the case may be.

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

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

Where "t" is the applicable tax rate in accordance with clause (3) of this regulation.

(5) The generating company or the transmission licensee, as the case may be, shall recover the shortfall or refund the excess Annual Fixed Charge on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax

Rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission:

Provided further that Annual Fixed Charge with respect to the tax rate applicable to the generating company or the transmission licensee, as the case may be, in line with the provisions of the relevant Finance Acts of the respective year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations."

36. The petitioner has submitted the MAT rate applicable during the various years. Return on equity has been worked out by considering year wise MAT rate submitted by the petitioner in accordance with Regulation 15 of The 2009 Regulations. The variation in the tax rate during the 2009-14 tariff block applicable to the petitioner as per the Finance Act of the relevant year for the purpose of grossing up of ROE has been considered as under:-

Year	MAT Rate (in %)	Grossed up ROE (Base rate/(1-t) (in %)
2009-10	16.995	18.674
2010-11	19. 931	19.358
2011-12	20.008	19.377
2012-13	20.008	19.377
2013-14	20.961	19.610

37. The detailed working for Return on Equity for all three phases is as follows:-

(₹ in lakh)

Phase-1					
Return on Equity (ROE)	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Opening Normative Equity	396.89	468.29	468.29	466.92	466.92
Addition due to Additional Capitalisation	71.39	0.00	-1.37	0.00	0.00
Closing Normative Equity	468.29	468.29	466.92	466.92	466.92
Average Normative Equity	432.59	468.29	467.61	466.92	466.92
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%	15.50%
MAT rate for respective Financial Year	16.995%	19.931%	20.008%	20.008%	20.961%
Rate of Return on Equity (Pre Tax)	18.674%	19.358%	19.377%	19.377%	19.610%
Return on Equity (Pre Tax)	**80.78**	**90.65**	**90.61**	**90.48**	**91.56**

(₹ in lakh)

Phase-2				
Return on Equity (ROE)	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Opening Normative Equity	1832.96	2041.26	2041.35	2039.44
Addition due to Additional Capitalisation	208.30	0.10	-1.92	-7.26
Closing Normative Equity	2041.26	2041.35	2039.44	2032.18
Average Normative Equity	1937.11	2041.31	2040.40	2035.81
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%
MAT rate for respective Financial Year	19.931%	20.008%	20.008%	20.961%
Rate of Return on Equity (Pre Tax)	19.358%	19.377%	19.377%	19.610%
Return on Equity (Pre Tax)	**374.99**	**395.54**	**395.37**	**399.22**

(₹ in lakh)

Phase-3			
Return on Equity (ROE)	**2011-12**	**2012-13**	**2013-14**
Opening Normative Equity	4396.62	4479.10	4490.56
Addition due to Additional Capitalisation	82.48	11.45	133.57
Closing Normative Equity	4479.10	4490.56	4624.13
Average Normative Equity	4437.86	4484.83	4557.34
Return on Equity (Base Rate)	15.50%	15.50%	15.50%
MAT rate for respective Financial Year	20.008%	20.008%	20.961%
Rate of Return on Equity (Pre Tax)	15.500%	19.377%	19.377%
Return on Equity (Pre Tax)	**687.87**	**869.03**	**883.08**

38. Return on Equity for the project as whole during the tariff period 2009-14 is worked out as under :-

(₹ in lakh)

Return on Equity	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
	80.78	465.64	1174.02	1354.87	1373.86

Interest on Loan ("IOL")

39. Regulation 16 of the 2009 Tariff Regulations provides the methodology for working out weighted average rate of interest on loan:-

"16. (1) The loans arrived at in the manner indicated in regulation 12 shall be considered as gross normative loan for calculation of interest on loan.

(2) The normative loan outstanding as on 1.4.2009 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2009 from the gross normative loan.

(3) The repayment for the year of the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that year:

(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 annual depreciation allowed,.

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the project:

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 beneficiary or the transmission customers 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."

40. The petitioner was directed to submit phase wise infusion of loan and equity vide order dated 9.1.2015 in Petition no. 106/TT/2012 and vide RoP dated 15.3.2016 in Petition No 134/TT/2015. However, the petitioner has not submitted the details of phase wise loan infusion stating that fund in the form of single loan

was arranged for entire project. Accordingly, weighted average rate of interest has been calculated for entire loan portfolio and the same has been considered for different phases for 2009-14 as well as for combined final tariff for 2014-19. The weighted average interest on loan are as under :-

(i) Gross amount of loan for entire project and rate of interest have been considered on actual basis as given in the affidavit dated 30.5.2016;

(ii) The amount of repayment of actual loan has been worked out in the same ratio for the original commitment of loan;

(iii) Weighted average rate of interest of actual loan portfolio has been worked out as per (i)& (ii) above and is applied on the normative average loan for phase wise computation of interest on loan;

(iv) The repayment of normative loan for the tariff period 2009-14 has been considered to be equal to the depreciation allowed for that period; and

(v) The petitioner has de-capitalised certain asset during 2009-14 period. The corresponding adjustment in cumulative repayment of loan has been carried out equal to the adjustment of cumulative depreciation due to de-capitalisation of asset.

41. The details of weighted average rate of interest for 2009-14 tariff period are placed at Annexure-1 to 3 and the IoL has been worked out and allowed as follows:-

(₹ in lakh)

Phase-1					
Interest on Loan	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Gross Normative Loan	926.09	1092.67	1092.67	1089.49	1089.49
Cumulative Repayment upto Previous Year	2.89	79.22	161.83	244.22	326.40
Net Loan-Opening	923.20	1013.45	930.84	845.26	763.09
Addition due to Additional Capitalisation	166.59	0.00	-3.19	0.00	0.00
Repayment during the year	76.33	82.61	82.39	82.18	82.18
Net Loan-Closing	1013.45	930.84	845.26	763.09	680.91
Average Loan	968.32	972.15	888.05	804.17	722.00
Weighted Average Rate of Interest on Loan	10.7500%	11.4100%	11.9700%	11.5800%	11.7500%
Interest on Loan	**104.09**	**110.92**	**106.30**	**93.12**	**84.83**

(₹ in lakh)

Phase-2				
Interest on Loan	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Gross Normative Loan	5855.55	6341.58	6341.80	6337.33
Cumulative Repayment upto Previous Year	0.00	425.22	868.79	1312.05
Net Loan-Opening	5855.55	5916.35	5473.02	5025.27
Addition due to Additional Capitalisation	486.02	0.22	-4.47	-16.94
Repayment during the year	425.22	443.56	443.27	442.28
Net Loan-Closing	5916.35	5473.02	5025.27	4566.05
Average Loan	5885.95	5694.68	5249.15	4795.66
Weighted Average Rate of Interest on Loan	11.4100%	11.9700%	11.5800%	11.7500%
Interest on Loan	**671.59**	**681.65**	**607.85**	**563.49**

(₹ in lakh)

Phase-3			
Interest on Loan	**2011-12**	**2012-13**	**2013-14**
Gross Normative Loan	13211.24	13403.69	13430.42
Cumulative Repayment upto Previous Year	0.00	936.95	1882.18
Net Loan-Opening	13211.24	12466.74	11548.24
Addition due to Additional Capitalisation	192.46	26.73	311.67
Repayment during the year	936.95	945.22	957.98
Net Loan-Closing	12466.74	11548.24	10901.93
Average Loan	12838.99	12007.49	11225.09
Weighted Average Rate of Interest on Loan	11.4100%	11.9700%	11.5800%
Interest on Loan	**1464.93**	**1437.30**	**1299.87**

42. Interest on loan for the project as whole during the tariff period 2009-14 are as under:-

(₹ in lakh)

Interest on Loan	2009-10	2010-11	2011-12	2012-13	2013-14
	104.09	782.51	2252.88	2138.27	1948.19

Depreciation

43. Clause (42) of Regulation 3 of the 2009 Tariff Regulations defines useful life as follows:-

> "**'useful life'** in relation to a unit of a generating station and transmission system from the COD shall mean the following, namely:-
> ....
> (c) AC and DC sub-station 25 years
> (d) Hydro generating station 35 years
> (e) Transmission line 35 years"

44. Further, Regulation 17 of the 2009 Tariff Regulations provide as follows:-

> "17. **Depreciation**
> (1) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission.
>
> (2) 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 stations, the salvage value shall be as provided in the agreement signed by the developers with the State Government for creation of the site;
>
> Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciable value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff.
>
> (3) 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.
>
> (4) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-III 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 date of commercial operation shall be spread over the balance useful life of the assets.

(5) In case of the existing projects, the balance depreciable value as on 1.4.2009 shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to 31.3.2009 from the gross depreciable value of the assets.

(6) 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."

45. Accordingly, depreciation has been calculated annually based on Straight Line Method and at rates specified in Appendix-III. As stated earlier the date of commercial operation of the three Phases are 1.3.2009, 1.4.2010 and 1.4.2011. Depreciation has been calculated annually based on Straight Line Method and at rates specified in Appendix-III as the phases shall complete their 12 years beyond 2013-14. The petitioner has de-capitalised certain assets during 2009-14 tariff period which are discussed as below.

Phase -1

46. The petitioner has de-capitalisedan amount of ₹6.83 lakh against Motor vehicle during 2011-12, whereas the capital cost considered by the Commission against this asset was ₹4.55 lakh. Actual date of de-capitalisation was not available. Accordingly, the date of de-capitalisation is assumed as 31.3.2012. Hence, cumulative depreciation up to date of de-capitalisation is worked out as ₹1.37 lakh and the same is reduced from capital expenditure for 2011-12. The computation of cumulative depreciation upto date of de-capitalisation for 2011-12 is as follows:-

(₹ in lakh)

Computation of Cumulative Depreciation of De-capitalised Asset for the year 2011-12								
Element	Date of capitalisation	Date of de-cap	Gross capital cost of de-cap Asset	2004-2009 and 2009-2014 tariff period		Cumulative depreciation up to date of De-cap	Maximum cum. dep.	Cumulative depreciation considered for adjustment
				Rate of depreciation	Depreciation			
Vehicle	1.3.2009	31.3.12	4.55	18.00%, 9.50%	0.06825, 1.29675	1.37	4.095	**1.37**

Phase-2

47. The petitioner has de-capitalised ₹6.39 lakh and ₹8.22 lakh corresponding to Motor vehicle and office equipment respectively during 2012-13 and 2013-14, whereas the capital cost considered by Commission against these asset were ₹6.39 lakh and ₹8.20 lakh respectively. The petitioner has received payment from GETCO during 2013-14, which is also treated as de-capitalisation during 2013-14. Actual date of de-capitalisation/payment receiving date is not available. Therefore, the date of de-capitalisation is assumed as 31.3.2013 and 31.3.2014. Thus, cumulative depreciation up to date of de-capitalisation is worked out as ₹1.82 lakh and ₹5.46 lakh and the same is reduced from capital expenditure for 2012-13 and 2013-14 respectively, as under:-

(₹ in lakh)

Computation of Cumulative Depreciation of De-capitalised Asset for 2012-13								
	Date of capitalisation	Date of de-capitalisation	Gross capital cost of de-capitalisationasset	2009-14 tariff period		Cumulative Depreciation up to Date of De-cap	Maximum Cumulative Depreciation	Cumulative Depreciation considered for adjustment
				Rate of depreciation	Depreciation			
Vehicle	1.4.2010	31.3.13	6.39	9.50%	1.82	1.82	5.751	**1.82**
Computation of Cumulative Depreciation of De-capitalised Asset for the year 2013-14								
Payment received from GETCO	1.4.2010	31.10.14	16.00	5.28%	3.38	3.38	14.4	3.38
Furniture and Fixtures	1.4.2010	31.3.14	8.20	6.33%	2.08	2.08	7.38	2.08
Total			**24.20**			**5.46**	**21.78**	**5.46**

48. The detailed working for depreciation for all three phases is summarized below:-

(₹ in lakh)

Phase I					
Depreciation	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Opening Gross Block	1322.98	1560.96	1560.96	1556.41	1556.41
Addition during 2009-14 due to Additional Capitalisation	237.98	0.00	-4.55	0.00	0.00
Closing Gross Block	1560.96	1560.96	1556.41	1556.41	1556.41
Average Gross Block	1441.97	1560.96	1558.69	1556.41	1556.41
Rate of Depreciation	5.2933%	5.2923%	5.2862%	5.2800%	5.2800%
Depreciable Value	1297.77	1404.86	1402.82	1400.77	1400.77
Remaining Depreciable Value (at the beginning of the year)	1294.88	1325.65	1240.99	1157.91	1075.73
Depreciation	**76.33**	**82.61**	**82.39**	**82.18**	**82.18**
Cumulative Depreciation/ Advance against Depreciation (Before adjustment)	79.22	161.83	244.22	325.04	407.22
Less: Cumulative depreciation of De-capitalised asset	0.00	0.00	1.37	0.00	0.00
Cumulative Depreciation/ Advance against Depreciation (After adjustment)	79.22	161.83	242.86	325.04	407.22

(₹ in lakh)

Phase-2				
Depreciation	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Opening Gross Block	7688.52	8382.84	8383.16	8376.77
Addition during 2009-14 due to Additional Capitalisation	694.32	0.32	-6.39	-24.20
Closing Gross Block	8382.84	8383.16	8376.77	8352.57
Average Gross Block	8035.68	8383.00	8379.96	8364.67
Rate of Depreciation	5.2917%	5.2912%	5.2896%	5.2875%
Depreciable Value	7232.11	7544.70	7541.97	7528.20
Remaining Depreciable Value (at the beginning of the year)	7232.11	7119.47	6673.18	6217.97
Depreciation	**425.22**	**443.56**	**443.27**	**442.28**
Cumulative Depreciation/ Advance against Depreciation (Before adjustment)	425.22	868.79	1312.05	1752.52
Less: Cumulative depreciation of De-capitalised asset	0.00	0.00	1.82	5.46
Cumulative Depreciation/ Advance against Depreciation (After adjustment)	425.22	868.79	1310.23	1747.06

(₹ in lakh)

Phase-3			
Depreciation	**2011-12**	**2012-13**	**2013-14**
Opening Gross Block	17607.86	17882.80	17920.98
Addition during 2009-14 due to Additional Capitalisation	274.94	38.18	445.24
Closing Gross Block	17882.80	17920.98	18366.22
Average Gross Block	17745.33	17901.89	18143.60
Rate of Depreciation	5.2800%	5.2800%	5.2800%
Depreciable Value	16006.96	16147.86	16365.40
Remaining Depreciable Value (at the beginning of the year)	16006.96	15210.91	14483.23
Depreciation	936.95	945.22	957.98
Cumulative Depreciation/ Advance against Depreciation (Before adjustment)	936.95	1882.18	2840.16
Less: Cumulative depreciation of De-capitalised asset	0.00	0.00	0.00
Cumulative Depreciation/ Advance against Depreciation (After adjustment)	936.95	1882.18	2840.16

49. Depreciation for the project as whole during the tariff period 2009-14 is worked out as under:-

(₹ in lakh)

2009-10	2010-11	2011-12	2012-13	2013-14
76.33	507.83	1462.91	1470.67	1482.44

Operation & Maintenance Expenses ("O&M Expenses")

50. Clause (g) of Regulation 19 of the 2009 Tariff Regulations specifies the norms for O&M Expenses for the transmission system. The normative O&M Expenses are not required to be trued up. Accordingly, the total allowable O&M Expenses for the instant assets for 2009-14 have been worked out based on norms of O&M Expenses and the details are as follows:-

(₹ in lakh)

Particulars	Asset	2009-10	2010-11	2011-12	2012-13	2013-14
O&M Expenses	Phase-1 approved in Petition No. 159/2009 with order dated 19.7.2011	10.30	10.87	11.51	12.17	12.86
	Phase-2 approved in Petition No 318/2010 with order dated 22.4.2013	0.00	53.47	56.54	59.76	63.15

	Phase-3 approved in Petition No 159/2009 with order dated 9.1.2015 in Petition No.	0.00	0.00	218.47	230.95	244.1
Total	Approved in previous order	10.30	64.34	286.52	302.88	320.11
	Claimed at the time of true-up (Clubbed)	10.30	64.35	286.51	302.88	320.11
	Allowed in this order	10.30	64.34	286.51	302.88	320.11

Interest on working capital (“IWC”)

51. The petitioner is entitled to claim interest on working capital as per 2009 Tariff Regulations. The rate of interest on working capital considered is 13.20%. The components of the working capital and interest thereon have been worked out as per methodology provided in the Regulation 18 of the 2009 Tariff Regulations). Accordingly, the interest on working capital determined is as under:-

(i) Maintenance Expenses:

Maintenance spares have been worked out based on 15% of Operation and Maintenance expenses specified in Regulation 19.

(ii) O & M expenses:

O&M expenses have been considered for one month

(iii) Receivables:

The receivables have been worked out on the basis of 2 months' of annual transmission charges as worked out above.

(iv) Rate of interest on working capital:

As per 2009 Tariff Regulations along with (Second Amendment) Regulations, 2011 dated 21.06.2011, PLR @12.25% and 11.75% for Phase-1 and Phase-2 respectively have been considered for working out interest on working capital. SBI Base Rate (8.25%) as on 1.4.2011 Plus 350Bps i.e. 11.75 % for Phase-3 have been considered as the rate of interest on working capital.

52. The detailed working for interest on working capital for all three phases is as follows:-

(₹ in lakh)

Phase-1					
Interest on Working Capital	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Maintenance Spares	1.55	1.63	1.73	1.83	1.93
O & M expenses	0.86	0.91	0.96	1.01	1.07
Receivables	46.24	50.25	49.53	47.35	46.24
Total (Working Capital)	48.65	52.79	52.22	50.19	49.25
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
Interest on Working Capital	**5.96**	**6.47**	**6.40**	**6.15**	**6.03**

(₹ in lakh)

Phase-2				
Interest on Working Capital	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Maintenance Spares	8.02	8.48	8.96	9.47
O & M expenses	4.46	4.71	4.98	5.26
Receivables	259.54	268.40	256.33	249.87
Total (Working Capital)	272.01	281.59	270.28	264.61
Rate of Interest	11.75%	11.75%	11.75%	11.75%
Interest on Working Capital	**31.96**	**33.09**	**31.76**	**31.09**

(₹ in lakh)

Phase-3			
Interest on Working Capital	**2011-12**	**2012-13**	**2013-14**
Maintenance Spares	32.77	34.64	36.62
O & M expenses	18.21	19.25	20.34
Receivables	563.40	593.09	576.58
Total (Working Capital)	614.38	646.97	633.53
Rate of Interest	11.75%	11.75%	11.75%
Interest on Working Capital	**72.19**	**76.02**	**74.44**

53. Interest on Working Capital for the project as whole during the tariff period 2009-14 is worked out as under : -

(₹ in lakh)

Interest on Working Capital	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
	5.96	38.43	111.67	113.93	111.56

Annual Fixed Charges for 2009-14 Tariff Period

54. The detailed computation of the various components of the trued up annual fixed charges for the transmission assets for the tariff period 2009-14 are as under:-

(₹ in lakh)

AFC for Phase-1	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	76.33	82.61	82.39	82.18	82.18
Interest on Loan	104.09	110.92	106.30	93.12	84.83
Return on equity	80.78	90.65	90.61	90.48	91.56
Interest on Working Capital	5.96	6.47	6.40	6.15	6.03
O & M Expenses	10.30	10.87	11.51	12.17	12.86
Total	**277.46**	**301.52**	**297.21**	**284.10**	**277.47**

(₹ in lakh)

AFC for Phase-2	2010-11	2011-12	2012-13	2013-14
Depreciation	425.22	443.56	443.27	442.28
Interest on Loan	671.59	681.65	607.85	563.49
Return on equity	374.99	395.54	395.37	399.22
Interest on Working Capital	31.96	33.09	31.76	31.09
O & M Expenses	53.47	56.54	59.76	63.15
Total	**1557.23**	**1610.39**	**1538.00**	**1499.24**

(₹ in lakh)

AFC for Phase-3	2011-12	2012-13	2013-14
Depreciation	936.95	945.22	957.98
Interest on Loan	1464.93	1437.30	1299.87
Return on equity	687.87	869.03	883.08
Interest on Working Capital	72.19	76.02	74.44
O & M Expenses	218.47	230.95	244.10
Total	**3380.41**	**3558.51**	**3459.46**

55. The detailed computation of the various components of the trued up annual fixed charges for project as a whole for the tariff period 2009-14 are as under:-

(₹ in lakh)

AFC for the project as whole	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	76.33	507.83	1462.91	1470.67	1482.44
Interest on Loan	104.09	782.51	2252.88	2138.27	1948.19
Return on equity	80.78	465.64	1174.02	1354.87	1373.86
Interest on Working Capital	5.96	38.43	111.67	113.93	111.56
O & M Expenses	10.30	64.34	286.52	302.88	320.11
Total	**277.46**	**1858.75**	**5288.01**	**5380.61**	**5236.17**

Determination of Annual Transmission Charges for 2014-19

56. The true-up tariff for the instant transmission system up to 2009-14 tariff period has been granted based on the actual COD of individual elements irrespective of the fact whether project as whole is completed or not. This leads to granting of multiple tariffs for the assets covered under the single project/transmission system. The Commission, vide Regulation 6 of the 2014 Tariff Regulations has brought in the concept of a single consolidated petition to be submitted by a petitioner where all the elements of a transmission system have been declared under commercial operation prior to 1.4.2014. In such a case, a single tariff can be granted for all the assets covered under a single project/transmission system. In order to determine a single transmission tariff for different assets after combining them, as per the 2014 Tariff Regulations, the concept of effective date of commercial operation and weighted average life has also been introduced in Regulation 27 of the 2014 Tariff Regulations. The relevant portions of Regulation 6 and Regulation 27 of the 2014 Tariff Regulations are as under:-

> **"6. Tariff determination**
>
> (1) Tariff in respect of a generating station may be determined for the whole of the generating station or stage or generating unit or block thereof, and tariff in respect of a transmission system may be determined for the whole of the transmission system or transmission line or sub-station or communication system forming part of transmission system:
> Provided that:
>
> (i) where all the generating units of a stage of a generating station or all elements of a transmission system have been declared under commercial operation prior to 1.4.2014, the generating company or the transmission licensee, as the case may be, shall file consolidated petition in respect of the entire generating station or transmissions system for the purpose of determination of tariff for the period 2014-15 to 2018-19:
> Xxx
> Xxx"

57. To determine single tariff, the following balances as on 31.3.2014 as admitted/determined by commission against individual phases has been added together and the same has been considered as the balance as on 1.4.2014 for the project as whole.

(₹ in lakh)

Determination of balances as on 1.4.2014 for the Project as whole to determine single tariff.				
Particulars	**Balances as admitted/determined by Commission as on 31.3.2014 while truing up of tariff for 2009-14 period**			**Opening Balances for the project as whole as on 1.4.2014**
	Phase I	**Phase II**	**Phase III**	
Admitted Capital Cost	1556.41	8352.57	18366.22	**28275.20**
Cumulative Depreciation	407.22	1747.06	2840.16	**4994.44**
Debt Equity Ratio	70.00%	75.67%	74.82%	**74.81%**
Gross Normative Equity - Normal ROE	466.92	2032.18	4624.13	**7123.23**
Gross Normative Loan	1089.49	6320.39	13742.09	**21151.97**
Cumulative Re-payment of loan	407.22	1747.06	2840.16	**4994.44**

58. The above determined balances are being considered as opening balances as on 1.4.2014 for determination of Return on Equity, interest on loan for the period 2014-19. In addition to this, to determine depreciation for the project as whole, the concept of Effective Date of Commercial Operation (E-COD) and Weighted Average life (WAL) has also been considered.

59. The petitioner has claimed the transmission charges in its affidavit dated 30.5.2016 (for combined assets of phase 1, phase 2 and phase 3).The transmission charges claimed by the petitioner are as under:-

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	1576.46	1608.44	1613.13	1618.60	1618.60
Interest on Loan	1755.69	1471.37	1223.68	1069.48	907.62
Return on Equity	1755.39	1799.70	1805.95	1812.19	1812.19
Interest on Working Capital	133.20	128.96	124.06	121.35	118.21
O&M Expenses	291.44	301.25	311.20	321.51	332.19
Total	**5512.18**	**5309.72**	**5078.02**	**4943.13**	**4788.81**

60. The details submitted by the petitioner in its affidavit dated 30.5.2016 (for combined assets of Phase 1, Phase 2 and Phase 3) in support of its claim for interest on working capital are given hereunder:-

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	43.72	45.19	46.68	48.23	49.83
O & M Expenses	24.29	25.10	25.93	26.79	27.68
Receivables	918.70	884.95	846.33	823.85	798.14
Total	**986.71**	**955.24**	**918.94**	**898.87**	**875.65**
Interest	133.21	128.96	124.06	121.35	118.21
Rate of Interest (%)	13.50%	13.50%	13.50%	13.50%	13.50%

Capital Cost

61. Clause (1) and (3) of Regulation 9 of the 2014 Tariff Regulations provides as follows:-

> "(1) 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."
>
> (2) The Capital Cost of a new project shall include the following:
>
> (a) the expenditure incurred or projected to be incurred up to the date of commercial operation of the project;
>
> (b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;

(c) Increase in cost in contract packages as approved by the Commission;

(d) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 11 of these regulations;

(e) capitalised Initial spares subject to the ceiling rates specified in Regulation 13 of these regulations;

(f) expenditure on account of additional capitalization and de-capitalisation determined in accordance with Regulation 14 of these regulations; 39

(g) adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 18 of these regulations; and

(h) adjustment of any revenue earned by the transmission licensee by using the assets before COD.

" (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;

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

(b) expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15."

Capital Cost as on 1.4.2014

62. The element wise capital cost (i.e. transmission line, Sub-station, communication system etc.) as admitted by Commission as on 31.3.2014 for Phase 1, Phase 2 and Phase 3 are added together and the same has been considered as element wise capital cost of Project as a whole as on 1.4.2014.

(₹ in lakh)

Particulars	Admitted Capital Cost as on 31.3.2014			
	Phase I	**Phase II**	**Phase III**	**Combined admitted capital cost**
Transmission Line	1556.41	8346.09	16934.50	26837.00
Sub-Station Equipments	0.00	0.00	1431.31	1431.31
Office Furniture and Furnishing	0.00	0.52	0.37	0.89
I T Equipments	0.00	5.96	0.04	6.00
Total Capital Cost	**1556.41**	**8352.57**	**18366.22**	**28275.20**

The total of such element wise capital cost₹ 28275.20 lakh has been considered as the admitted capital cost as on 1.4.2014 for the project as whole.

Additional Capital Expenditure

63. Sub-clause (i) of Clause 1 and sub-clause (ix) of Clause 3 of Regulation 14 of the 2014 Tariff Regulations provides as follows:-

> "(1) The capital expenditure in respect of the new project or an existing project incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:
> ….
> (i) Undischarged liabilities recognized to be payable at a future date;
>
> "(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:
> …..
> 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;

64. The petitioner has not claimed additional capital expenditure for the period 2015-16, 2017-18 and 2018-19. The petitioner has claimed the following additional capital expenditure during 2014-19 period:-

(₹ in lakh)

Particulars	Regulation	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Teak Wood Plantation Cutting	14(3)(ii)	686.55	0.00	0.00	0.00	0.00	686.55
Other Tree Cutting	14(3)(ii)	25.06	0.00	0.00	0.00	0.00	25.06
Settlement with Contractor	14(3)(v)	500.00	0.00	0.00	0.00	0.00	500
Spares	54	0.00	0.00	123.8	0.00	0.00	123.8
Forest land cost and afforestation cost	14(3)(ii)	0.00	0.00	80	0.00	0.00	80
Other Tree Cutting	14(3)(ii)	0.00	0.00	7.39	0.00	0.00	7.39
Total		**1211.61**	**0.00**	**211.19**	**0.00**	**0.00**	**1422.8**

Admissible ACE for the year 2014-15

65. The amount claimed towards settlement with contractor under Regulation 14(3)(v) (i.e. Discharge of liability for works executed prior to the cut-off date), pertains to the admitted undischarged liability as on COD of Phase 3. Hence, the same has been allowed.

66. The petitioner has claimed additional capital expenditure of ₹711.61 lakh (i.e ₹686.55 lakh towards Teak Wood Plantation Cutting and ₹25.06 lakh towards other tree cutting against the Regulation 14(3)(ii) i.e. Change in Law). The same amount has been shown as payment of liability during the year 2014-15 under the item 'Preliminary Investigation, ROW, Forest clearance, PTCC, General civil works etc'. However, the un-discharged liability as on 1.4.2014 available against this head being only ₹626.70 lakh, is allowed and the excess paid liability ₹84.91 lakh (i.e. ₹711.61-₹626.70) has been not allowed.

67. Accordingly, ₹1126.70 lakh (i.e. ₹1211.61 lakh - ₹84.91 lakh) has been considered as additional capital expenditure for tariff for 2014-15.

Admissible ACE for the year 2016-17

68. The petitioner has claimed ₹87.39 lakh (i.e. ₹80+₹7.39) under Regulation 14(3)(ii) (i.e. due to change in law or compliance of any existing law) of 2014 Tariff Regulations. There is no balance undischarged liability against this head. This claim is a new claim on estimation basis. This claim has been not

considered for tariff. However, the petitioner is directed to submit the additional information at the time of truing up to justify the new claim along with proof for actual payment.

69. The petitioner has claimed ₹123.80 lakh under Regulation 54 (i.e. Power to relax) of 2014 Tariff Regulations for estimated procurement of initial spare after the cut-off date. The petitioner has mentioned that the delay in procurement of spares is due to delay in issue of final tariff order in Petition No 106/TT/2012. The petitioner has incurred the expenditure for procurement of initial spares for sub-station even before issue of the order. Hence, the claim of initial spare estimated to have been procured after cut-off date has been not considered. However, the petitioner has liberty to submit the justification for the delay along with proof for actual amount of initial spares purchased for transmission line, at the time of filing truing up petition for 2014-19 period.

70. Accordingly, the entire claim of additional capital expenditure on estimated basis for the year 2016-17 has not been considered for tariff purpose. No additional capital expenditure has been claimed for 2015-16, 2017-18 and 2018-19. Accordingly the additional capital expenditure claimed and allowed during 2014-19 period are as follows:-

(₹ in lakh)

Additional Capital Expenditure	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**Total**
1) Claimed	1211.61	0	211.19	0	0	1422.80
2) Dis- Allowed	84.91	0	211.19	0	0	296.10
3) Allowed (3=1-2)	1126.70	**0**	**0**	**0**	**0**	**1126.70**

Flow of Liability

71. The undischarged liability as on COD has been claimed by the petitioner as and when the actual payments are made towards those liabilities. In certain cases the liabilities are reversed. Accordingly, the balance of undischarged liabilities as on 31.3.2014 has been determined at the time of truing of 2009-14 tariff. Out of these undischarged liabilities as on 1.4.2014, the petitioner has discharged certain liabilities and has claimed the same as additional capital expenditure during 2014-19.

72. The petitioner has claimed discharging of the liability by reversal to the extent of ₹741.66 lakh towards adjustment of LD Charges. It is observed that the petitioner has adjusted the LD charges against various liabilities and in certain cases negative adjustment also was made to arrive at the final LD amount of ₹741.66 lakh. Hence, for the purpose of liability reversal, only the positive amount are considered which has been worked out as ₹923.34 lakh from the information available in Form 5.

73. Accordingly, the following flow of liability is worked out for the 2014-19 tariff period, which is subject to true up of the 2014-19 tariff:-

(₹ in lakh)

Flow of liability from during 2014-19								
Phase	**Balance un-discharged liability as on 31.3.2014**	**Discharge of liability by payment during 2014-19 has been allowed as ACE of concerned year**					**Reversal of liability during 2014-19**	**Balance estimated un-paid liability as on 31.3.2014**
		2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**		
1	2	3	4	5	6	7	8	9=(2-3-4-5-6-7-8)
Phase 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2	399.14	0.00	0.00	0.00	0.00	0.00	397.64	1.50
Phase 3	1657.53	1126.70	0.00	0.00	0.00	0.00	525.70	5.13
Total	**2056.67**	**1126.70**	**0.00**	**0.00**	**0.00**	**0.00**	**923.34**	**6.63**

Debt- equity ratio

74. Clause 1 and 5 of Regulation 19 of the 2014 Tariff Regulations provides as under :-

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

Provided that:

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

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

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

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

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

75. In accordance with Regulation 19(3) of 2014 Tariff Regulations, the debt-equity ratio as on 1.4.2014 of the project has been considered. The details are as follows:-

(₹ in lakh)

Particulars	**Balances as on 31.3.2014, as determined during true-up of 2009-14 tariff**			**Considered for single tariff for Project as whole as on 1.4.2014**
	Phase I	**Phase II**	**Phase III**	
Admitted Capital Cost	1556.41	8352.57	18366.22	**28275.20**
Gross Normative Loan	1089.49	6320.39	13742.09	**21151.97**
Gross Normative Equity	466.92	2032.18	4624.13	**7123.23**
Debt Equity Ratio	**70 : 30**	**75.67:24.33**	**74.82 :25.18**	**74.81: 25.19**

76. In accordance to Regulation 19 (5) of 2014 Tariff Regulations, 70:30 debt-equity ratio has been considered for the additional capital expenditure allowed during 2014-19 period, which is subject to true up. Accordingly,the details of the debt: equity as on 1.4.2014 and for the 2014-19 tariff period are as follows:-

(₹ in lakh)

Particulars	**%**	**As on 1.4.2014**	**As on 31.3.2019**
Debt	70.00	21151.97	21940.66
Equity	30.00	7123.23	7461.24
Total	100.00	28275.20	29401.90

<u>Return on Equity ("ROE")</u>

77. Clause (1) and (2) of Regulation 24 and Clause (1) and (2) of Regulation 25 of the 2014 Tariff Regulations specify as follows:-

" **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) additionalRoE shall not be admissible for transmission line having length of less than 50 kilometers."

"25. 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."

78. The Return on Equity has been worked out in accordance with Regulation 24 & Regulation 25 of the 2014 Regulations. The gross normative equity as on 1.4.2014 for the project as whole has been determined as ₹7123.23 lakh**.** The rate of pre-tax return on equity for all the financial year during 2014-19 period has been determined by grossing up the base rate of 15.50% with effective tax rate of 20.961% (i.e. MAT rate applicable for the financial year 2013-14). This rate of pre-tax return on equity is subject to true up based on the effective tax rate of

respective financial year applicable to the petitioner company.

79. The detailed working for Return on Equity for the project is summarized below:-

(₹ in lakh)

Return on Equity (ROE)	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	7123.23	7461.24	7461.24	7461.24	7461.24
Addition due to Additional Capitalisation	338.01	0.00	0.00	0.00	0.00
Closing Equity	7461.24	7461.24	7461.24	7461.24	7461.24
Average Equity	7292.24	7461.24	7461.24	7461.24	7461.24
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%	15.50%
MAT rate applicable for the year 2013-14	20.961%	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax)	19.610%	19.610%	19.610%	19.610%	19.610%
Return on Equity (Pre Tax)	**1430.01**	**1463.15**	**1463.15**	**1463.15**	**1463.15**

80. The petitioner has computed ROE at the rate of 19.610% after grossing up the ROE with MAT rate as per the above Regulations. The petitioner has submitted that the grossed up ROE is subject to truing up based on the actual tax paid along with any additional tax or interest, duly adjusted for any refund of tax including the interest received from IT authorities, pertaining to the tariff period 2014-19 on actual gross income of any financial year. Any under-recovery or over-recovery of grossed up ROE after truing up shall be recovered or refunded to the beneficiaries on year to year basis.

Interest on Loan (“IOL”)

81. Regulation 26 of the 2014 Tariff Regulations with regard to Interest on Loan specifies as under:-

> “(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.

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 decapitalisation 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 decapitalisation 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."

82. The interest on loan has been worked out in accordance with Regulation 26 of the 2014 Regulations. The normative loan outstanding as on 1.4.2014 for the Project has been worked out by deducting the cumulative repayment of individual assets as admitted by the Commission up to 31.3.2014 from the gross normative loan of individual assets.

(₹ in lakh)

Particulars	**Balances as on 31.3.2014, as determined during true-up of 2009-14 tariff**			**For project as whole as on 1.4.2014**
	Phase I	**Phase II**	**Phase III**	
Gross Normative Loan	1089.49	6320.39	13742.09	21151.97
Cumulative Re-payment	407.22	1747.06	2840.16	4994.44
Normative loan outstanding as on 1.4.2014				16157.53

83. The actual loan portfolio of the project as whole has been considered to determine the weighted average rate of interest, which is subject to true up.

84. The details of weighted average rate of interest for 2014-19 tariff period are placed in Annexure-4 and the IoL has been worked out and allowed as follows:-

(₹ in lakh)

Return on Equity (ROE)	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	21151.97	21940.66	21940.66	21940.66	21940.66
Cumulative Repayment upto Previous Year	4994.44	6517.70	8011.23	9564.24	11117.25
Net Loan-Opening	16157.53	15422.95	13929.43	12376.42	10823.40
Addition due to Additional Capitalisation	788.69	0.00	0.00	0.00	0.00
Normative Repayment during the year	1523.27	1493.52	1553.01	1553.01	1553.01
Net Loan-Closing	15422.95	13929.43	12376.42	10823.40	9270.39
Average Loan	15790.24	14676.19	13152.92	11599.91	10046.90
Weighted Average Rate of Interest on Loan	11.9500%	10.9600%	10.2200%	10.2700%	10.3500%
Interest on Loan	**1886.93**	**1608.51**	**1344.23**	**1191.31**	**1039.85**

Depreciation

85. Regulation 27 of the 2014 Tariff Regulations with regard to depreciation specifies as follows:-

"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.

(2) 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."

86. Accordingly, Effective Date of Commercial Operation (E-COD) for the project as a whole has been worked out based on the admitted capital cost of individual Phases as on 31.3.2014 and the actual COD of concerned phases as

approved by the Commission. Accordingly, E-COD for the instant project has been worked out as follows:-

(₹ in lakh)

Determination of Effective Date of Commercial Operation (E-COD)						
Asset No.	**Actual COD**	**Admitted Capital Cost as on 31.3.2014**	**Weight of the cost**	**No. of days from Phase COD to Project COD**	**Weighted days**	**Effective COD of Project (Project COD - Weighted days)**
Phase I	1-Mar-09	1556.41	5.50%	761	41.88929	**2.11.2010**
Phase II	1-Apr-10	8352.57	29.54%	365	107.8219	
Phase III	1-Apr-11	18366.22	64.96%	0	0	
Total		**28275.20**	100.00%		149.7112	

The E-COD 2.11.2010 has been used to determine the lapsed life of project as on 1.4.2014 as 3 years. (i.e. the number of completed year as on 1.4.2014 from E-COD)

<u>Weighted Average Life (WAL)</u>

87. The project as whole, have multiple elements (i.e. transmission line, Sub-station and communication System etc.) and each elements are having different span of life. Therefore, to determine the useful life of the project as whole, the concept of WAL has been incorporated in 2014 Tariff Regulation. The WAL of the instant project has been worked out based on the admitted capital cost of individual phases as on 31.3.2014 and the useful life of respective elements as stipulated in Regulation 3(67) of 2014 Tariff Regulations. The useful life as defined in 2014 Tariff Regulations prevailing at the time of actual COD of individual phases has been ignored for this purpose. Accordingly, WAL of the

instant project as whole has been worked out as 34 years as follows:-

Determination of Weighted Average Life of the Project	Admitted Capital Cost as on 31.3.2014				Life as per 2014 Regulation (b)	Weight (a) x (b)
	Phase I	Phase II	Phase III	Combined Admitted Capital Cost (a)		
Transmission Line	1556.41	8346.09	16934.50	26837.00	35	939294.92
Sub-Station Equipments	0.00	0.00	1431.31	1431.31	25	35782.63
Office Furniture and Furnishing	0.00	0.52	0.37	0.89	25	22.35
I T Equipments	0.00	5.96	0.04	6.00	25	150.00
Total	**1556.41**	**8352.57**	**18366.22**	**28275.20**	**34**	**975249.89**
WAL (Sum of weights/sum of admitted cost)						34 **Years**

88. The cumulative depreciation as on 1.4.2014 for the project as whole has been computed by adding the cumulative depreciation of individual phases as on 31.3.2014 are as follows:-

(₹ in lakh)

Cumulative depreciation as on 31.3.2014, as determined during true-up of 2009-14 tariff			Cumulative depreciation for the project as whole as on 1.4.2014
Phase I	**Phase II**	**Phase III**	
407.22	1747.06	2840.16	**4994.44**

89. The capital cost, E-COD, WAL for the project as whole as determined are considered for computation of depreciation during the tariff period 2014-19.

90. Accordingly, 12 years from the effective date of commercial operation are completing beyond the tariff period 2014-19. Hence the depreciation for entire tariff period (i.e. 2014-19) has been worked out based on Straight Line Method and at rates specified in **Appendix-II** to 2014 Tariff Regulations.

91. The detailed working for depreciation for the project is given below:-

(₹ in lakh)

Return on Equity (ROE)	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Opening Gross Block	28275.20	29401.90	29401.90	29401.90	29401.90
Addition during 2009-14 due to Projected Additional Capitalisation	1126.70	0.00	0.00	0.00	0.00
Closing Gross Block	29401.90	29401.90	29401.90	29401.90	29401.90
Average Gross Block	28838.55	29401.90	29401.90	29401.90	29401.90
Depreciation	25954.69	26461.71	26461.71	26461.71	26461.71
Rate of Depreciation	5.2821%	5.0797%	5.2820%	5.2820%	5.2820%
Depreciable Value	25954.69	26461.71	26461.71	26461.71	26461.71
Elapsed Life **(At the beginning of the year)**	3	4	5	6	7
Balance Useful life of the asset (At the beginning of the year)	31	30	29	28	27
Remaining Depreciable Value	20960.26	19944.00	18450.48	16897.47	15344.46
Depreciation	**1523.27**	**1493.52**	**1553.01**	**1553.01**	**1553.01**
Cumulative Depreciation/ Advance against Depreciation (at the end of the year)	6517.70	8011.23	9564.24	11117.25	12670.26

Operation & Maintenance Expenses ("O&M Expenses")

92. As per Regulation 29(3)(a) of 2014 Tariff Regulations, the following normative operation and maintenance expenses shall be admissible for the transmission system:-

(₹ in lakh)

Norms for sub-stations	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
400 KV	60.30	62.30	64.37	66.51	68.71
Norms for AC and HVDC Lines					
Single Circuit (Twin & Triple Conductor)-28.77 KM	0.404	0.418	0.432	0.446	0.461
Double Circuit (Twin & Triple Conductor)-225.152 KM	0.707	0.731	0.755	0.780	0.806

93. Accordingly, the O&M Expenses worked out for 2014-19 are as follows:-

(₹ in lakh)

Particulars	Year				
	2014-15	2015-16	2016-17	2017-18	2018-19
O&M Expenses claimed	291.44	301.25	311.20	321.51	332.19
O&M Expenses allowed	291.44	301.25	311.20	321.51	332.19
Total	**291.44**	**301.25**	**311.20**	**321.51**	**332.19**

94. The O&M Expenses claimed by the petitioner are as per Regulation 29(3) (a) of 2014 Tariff Regulations. Hence, the same is allowed.

<u>Interest on Working Capital ("IWC")</u>

95. Clause 1 (c) and 3 of Regulation 28 and Clause 5 of Regulation 3 of the 2014 Tariff Regulations specify as follows:-

> "**28. Interest on Working Capital:** (1) The working capital shall cover:
>
> (a)-------
>
> (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 expenses specified in regulation 29; and
>
> (iii) Operation and maintenance expenses for one month"
>
> (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"
>
> "(5) 'Bank Rate' means the base rate of interest as specified by the State Bank of India from time to time or any replacement thereof for the time being in effect plus 350 basis points;"

96. The interest on working capital is worked out in accordance with Regulation 28 of the 2014 Tariff Regulations. The rate of interest on working capital considered is 13.50% (SBI Base Rate of 10% plus 350 basis points). The interest on working capital as determined is as follows:-

(₹ in lakh)

Interest on Working Capital	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	43.72	45.19	46.68	48.23	49.83
O & M expenses	24.29	25.10	25.93	26.79	27.68
Receivables	876.53	831.36	798.19	773.93	749.99
Total (Working Capital)	944.53	901.65	870.80	848.95	827.50
Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
Interest on Working Capital	127.51	121.72	117.56	114.61	111.71

Annual Transmission Charges

97. The Annual Transmission Charges allowed for the combined transmission asset is as under:-

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	1523.27	1493.52	1553.01	1553.01	1553.01
Interest on Loan	1886.93	1608.51	1344.23	1191.31	1039.85
Return on Equity	1430.01	1463.15	1463.15	1463.15	1463.15
Interest on Working Capital		121.72	117.56	114.61	111.71
O & M Expenses	291.44	301.25	311.20	321.51	332.19
Total	**5259.16**	**4988.16**	**4789.15**	**4643.59**	**4499.92**

Sharing of Transmission Charges

98. The billing, collection and disbursement of the transmission charges approved shall be governed by the provisions of Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010, as amended from time to time, as provided in Regulation 33

and Regulation 43 of the 2009 tariff Regulations and 2014 Tariff Regulations respectively.

99. This order disposes of Petition No. 134/TT/2015.

sd/-	sd/-	sd/-	sd/-
(Dr. M.K. Iyer)	**(A.S. Bakshi)**	**(A.K. Singhal)**	**(Gireesh B. Pradhan)**
Member	**Member**	**Member**	**Chairperson**

Annexure-1

CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN FOR PHASE-1

(₹ in lakh)

	Details of Loan	2009-10	2010-11	2011-12	2012-13	2013-14
1	**Bank Of Baroda-Term Loan**					
	Opening Gross Loan	0.00	**13500.00**	**21400.00**	**21400.00**	**21400.00**
	Cum Repayment upto previous year	0.00	**0.00**	**0.00**	**892.84**	**2678.51**
	Net Loan-Opening	0.00	13500.00	21400.00	20507.16	18721.49
	Addition during the year	13500.00	7900.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	892.84	1785.67	1785.67
	Net Loan-Closing	13500.00	21400.00	20507.16	18721.49	16935.82
	Average Loan	6750.00	17450.00	20953.58	19614.33	17828.66
	Rate of Interest	10.75%	11.41%	11.97%	11.58%	11.75%
	Interest	725.63	1991.05	2508.14	2271.34	2094.87
	Rep Schedule	44 Quarterly Installments (First 40 Installments of Rs. 446.42 Lakhs each and further 4 Installments of Rs. 885.82 Lakhs each) starting from 31-December 2011				
	Total Loan					
	Opening Gross Loan	**0.00**	**13500.00**	**21400.00**	**21400.00**	**21400.00**
	Cum Repayment upto previous year	0.00	0.00	0.00	892.84	2678.51
	Net Loan-Opening	0.00	13500.00	21400.00	20507.16	18721.49
	Addition during the year	13500.00	7900.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	892.84	1785.67	1785.67
	Net Loan-Closing	13500.00	21400.00	20507.16	18721.49	16935.82
	Average Loan	6750.00	17450.00	20953.58	19614.33	17828.66
	Rate of Interest	**10.750%**	**11.410%**	**11.970%**	**11.580%**	**11.750%**
	Interest	725.63	1991.05	2508.14	2271.34	2094.87

Annexure-2

CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN FOR PHASE 2

(₹ in lakh)

	Details of Loan	2009-10	2010-11	2011-12	2012-13	2013-14
1	**Bank Of Baroda-Term Loan**					
	Opening Gross Loan	0.00	**13500.00**	**21400.00**	**21400.00**	**21400.00**
	Cum Repayment upto previous year	0.00	**0.00**	**0.00**	**892.84**	**2678.51**
	Net Loan-Opening	0.00	13500.00	21400.00	20507.16	18721.49
	Addition during the year	13500.00	7900.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	892.84	1785.67	1785.67
	Net Loan-Closing	13500.00	21400.00	20507.16	18721.49	16935.82
	Average Loan	6750.00	17450.00	20953.58	19614.33	17828.66
	Rate of Interest	10.75%	11.41%	11.97%	11.58%	11.75%
	Interest	725.63	1991.05	2508.14	2271.34	2094.87
	Rep Schedule	44 Quarterly Installments (First 40 Installments of Rs. 446.42 Lakhs each and further 4 Installments of Rs. 885.82 Lakhs each) starting from 31-December 2011				
	Total Loan					
	Opening Gross Loan	**0.00**	**13500.00**	**21400.00**	**21400.00**	**21400.00**
	Cum Repayment upto previous year	0.00	0.00	0.00	892.84	2678.51
	Net Loan-Opening	0.00	13500.00	21400.00	20507.16	18721.49
	Addition during the year	13500.00	7900.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	892.84	1785.67	1785.67
	Net Loan-Closing	13500.00	21400.00	20507.16	18721.49	16935.82
	Average Loan	6750.00	17450.00	20953.58	19614.33	17828.66
	Rate of Interest	**10.750%**	**11.410%**	**11.970%**	**11.580%**	**11.750%**
	Interest	725.63	1991.05	2508.14	2271.34	2094.87

Annexure-3

CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN FOR PHASE 3

(₹ in lakh)

	Details of Loan	2009-10	2010-11	2011-12	2012-13	2013-14
1	**Bank Of Baroda-Term Loan**					
	Opening Gross Loan	0.00	**13500.00**	**21400.00**	**21400.00**	**21400.00**
	Cum Repayment upto previous year	0.00	**0.00**	**0.00**	**892.84**	**2678.51**
	Net Loan-Opening	0.00	13500.00	21400.00	20507.16	18721.49
	Addition during the year	13500.00	7900.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	892.84	1785.67	1785.67
	Net Loan-Closing	13500.00	21400.00	20507.16	18721.49	16935.82
	Average Loan	6750.00	17450.00	20953.58	19614.33	17828.66
	Rate of Interest	10.75%	11.41%	11.97%	11.58%	11.75%
	Interest	725.63	1991.05	2508.14	2271.34	2094.87
	Rep Schedule	44 Quarterly Installments (First 40 Installments of Rs. 446.42 Lakhs each and further 4 Installments of Rs. 885.82 Lakhs each) starting from 31-December 2011				
	Total Loan					
	Opening Gross Loan	**0.00**	**13500.00**	**21400.00**	**21400.00**	**21400.00**
	Cum Repayment upto previous year	0.00	0.00	0.00	892.84	2678.51
	Net Loan-Opening	0.00	13500.00	21400.00	20507.16	18721.49
	Addition during the year	13500.00	7900.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	892.84	1785.67	1785.67
	Net Loan-Closing	13500.00	21400.00	20507.16	18721.49	16935.82
	Average Loan	6750.00	17450.00	20953.58	19614.33	17828.66
	Rate of Interest	**10.750%**	**11.410%**	**11.970%**	**11.580%**	**11.750%**
	Interest	725.63	1991.05	2508.14	2271.34	2094.87

Annexure-4

CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN FOR 2014-19 PERIOD

(₹ in lakh)

	Details of Loan	20014-15	2015-16	2016-17	2017-18	2018-19
1	**Bank Of Baroda-Term Loan**					
	Opening Gross Loan	21400.00	**21400.00**	**21400.00**	**21400.00**	**21400.00**
	Cum Repayment upto previous year	4464.18	**6249.85**	**8035.52**	**9821.20**	**11606.87**
	Net Loan-Opening	16935.82	15150.15	13364.48	11578.80	9793.13
	Addition during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	1785.67	1785.67	1785.67	1785.67	1785.67
	Net Loan-Closing	15150.15	13364.48	11578.80	9793.13	8007.46
	Average Loan	16042.98	14257.31	12471.64	10685.97	8900.30
	Rate of Interest	11.95%	10.96%	10.22%	10.27%	10.35%
	Interest	1917.14	1562.60	1274.60	1097.45	921.18
	Rep Schedule	44 Quarterly Installments (First 40 Installments of Rs. 446.42 Lakhs each starting from 31-December 2011and further 4 Installments of Rs. 885.82 Lakhs each)				
	Total Loan					
	Opening Gross Loan	**21400.00**	**21400.00**	**21400.00**	**21400.00**	**21400.00**
	Cum Repayment upto previous year	4464.18	6249.85	8035.52	9821.20	11606.87
	Net Loan-Opening	16935.82	15150.15	13364.48	11578.80	9793.13
	Addition during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	1785.67	1785.67	1785.67	1785.67	1785.67
	Net Loan-Closing	15150.15	13364.48	11578.80	9793.13	8007.46
	Average Loan	16042.98	14257.31	12471.64	10685.97	8900.30
	Rate of Interest	**11.950%**	**10.960%**	**10.220%**	**10.270%**	**10.350%**
	Interest	1917.14	1562.60	1274.60	1097.45	921.18