

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 275/2010

**Coram: Dr. Pramod Deo, Chairperson
Shri S. Jayaraman, Member
Shri V.S.Verma, Member**

Date of Hearing: 15.3.2011

Date of Order: 1.8.2011

In the matter of:

Determination of transmission tariff for transmission system associated with Vindhyachal Stage-I in Western Region for the period from 1.4.2009 to 31.3.2014.

And

In the matter of:

Power Grid Corporation of India Limited, Gurgaon

Petitioner

Vs

1. Madhya Pradesh Power Trading company Ltd., Jabalpur
2. Maharashtra State Electricity Distribution Company Ltd., Mumbai
3. Gujarat Urja Vikas Nigam Ltd. Vadodara
4. Electricity Department. Goa, Panaji
5. Electricity Deptt. Administration of Daman and Diu, Daman
6. Electricity Deptt., Govt. of UT of Dadra and Nagar Haveli, Silvassa
7. Chattisgarh State Electricity Board, Raipur.
8. Madhya Pradesh Audyogik Kendra Vikas Nigam Ltd., Indore **Respondents**

The following was present:

1. Shri.U. K Tyagi, PGCIL
2. Shri M. M. Mondal, PGCIL
3. Shri S.S. Raju, PGCIL
4. Shri Rajeev Gupta, PGCIL



5. Shri Gopaljee, PGCIL
6. Shri Rajeev Kumar, PGCIL
7. Shri Manoj Dubey, MPPTCL

ORDER

This petition has been filed seeking approval for determination of transmission tariff for transmission system associated with Vindhyachal Stage-I (hereinafter referred to as "the transmission system") in Western Region for the 2009-14 period, based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009, (hereinafter referred to as "the 2009 regulations"). The petitioner has also sought the following reliefs:

- (a) Approve proposed additional capital expenditure amounting to ₹ 34.09 lakh during 2010-11, and ₹ 204.19 lakh during 2013-14 as per Regulation 9 (2) (v) of the 2009 regulations;
- (b) Allow grossing up the base rate of return with the applicable tax rate as per the relevant Finance Acts and direct settlement of tax liability with the long term transmission customers on year to year basis;
- (c) Approve the reimbursement, by the beneficiaries, of the expenditure, towards petition filing fee, and publishing of notices in newspapers in terms of Regulation 42 of the 2009 regulations, and other expenditure (if any) in relation to the filing of petition;



(d) Allow the petitioner to bill and adjust impact on loan due to change in interest rate on account of floating rate of interest applicable during the tariff period, if any, from the respondents;

(e) Allow the petitioner to bill and recover Service Tax on transmission charges separately from the respondents, if the petitioner is subjected to such service tax; and

(f) Allow the petitioner to bill and recover license fee separately from the respondents.

2. Transmission charges in respect of the transmission system for the period up to 31.3.2004 were initially approved vide Commission's order dated 14.12.2005 in Petition No. 111/2004. Subsequently, the transmission charges as approved were revised vide order dated 14.2.2008 in process of implementation of the judgment dated 4.10.2006, of the Hon'ble Appellate Tribunal for Electricity in Appeal No. 135/2005 and other orders in related appeals.

3. Details of the transmission charges claimed by the petitioner are as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	402.98	404.08	405.26	405.26	413.61
Interest on Loan	0.00	1.01	1.91	1.71	7.46
Return on equity	2358.91	2359.80	2360.70	2360.70	2366.05
Interest on Working Capital	122.65	126.42	130.43	134.60	139.39
O & M Expenses	1301.19	1375.41	1454.40	1537.62	1625.18
Total	4185.73	4266.72	4352.70	4439.89	4551.69

4. The details submitted by the petitioner in support of its claim for interest on working capital are given hereunder:

(₹ in lakh)					
	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance Spares	195.18	206.31	218.16	230.64	243.78
O & M expenses	108.43	114.62	121.20	128.14	135.43
Receivables	697.62	711.12	725.45	739.98	758.61
Total	1001.23	1032.05	1064.81	1098.76	1137.82
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
Interest	122.65	126.43	130.44	134.60	139.38

5. No comments or suggestions have been received from the general public in response to the public notice published by the petitioner on 18.12.2010 as required under Section 64 of the Electricity Act, 2003 (the Act) read with Regulation 3 (6) of the Central Electricity Regulatory Commission (Procedure for making of application for determination of tariff, publication of the application and other related matters) Regulations, 2004. Reply to the petition has been filed by Madhya Pradesh Power Trading Company Limited (MPPTCL).

6. MPPTCL in its reply has submitted that the debt-equity ratio of 70:30 has been prescribed by the National Tariff Policy and the same must be adopted while computing tariff. MPPTCL has further questioned the necessity of tower strengthening and the admissibility of the projected additional capital expenditure under Regulation 9(2)(v) of the 2009 regulations. MPPTCL has requested not to allow

the additional capital expenditure on account of tower strengthening and direct the petitioner to defer the work.

7. The petitioner in its rejoinder has reiterated its submissions made in the petition and has requested for approval of transmission tariff as prayed for in the petition. The petitioner has submitted as under:

(i) With regard to debt-equity ratio, the petitioner has submitted that as per Regulation 12 (2) of the 2009 regulations, 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. Accordingly, tariff for the period 2009-14 has been claimed as per order dated 14.12.2005 and 14.2.2008 in Petition No. 111/2004; and

(ii) With regard to debt-equity ratio, the petitioner has submitted that the debt-equity ratio of 50:50 has been considered as per Regulation 12 (2) of the 2009 regulations. The issue of projected additional capital expenditure has been dealt in relevant para of the this order.

8. Having heard the representatives of the parties and perused the material on records, we proceed to dispose of the petition.



CAPITAL COST

9. As regards the capital cost, last proviso to clause 7 (2) of the 2009 regulations provides as under.

“Provided also that in case of the existing projects, the capital cost admitted by the Commission prior to 1.4.2009 and the additional capital expenditure projected to be incurred for the respective year of the tariff period 2009-14, as may be admitted by the Commission, shall form the basis for determination of tariff.”

10. Commission vide its order dated 14.12.2005 in Petition No. 111/2004 and its amendment order dated 14.2.2008 has approved the transmission charges based on admitted capital cost of ₹ 27034.45 lakh for transmission system for the tariff period 2004-2009. Accordingly, the above capital cost of ₹ 27034.45 lakh has been considered for the purpose of tariff.

ADDITIONAL CAPITAL EXPENDITURE

11. Clause 2 of Regulation 9 of the 2009 regulations as amended provides as under:

“The capital expenditure incurred on the following counts after the cut-off date may, in its discretion, be admitted by the Commission, subject to prudence check:

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

(ii) Change in law;

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

(iv) In case of hydro generating stations, any expenditure which has become necessary on account of damage caused by



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

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

Provided that in respect sub-clauses (iv) and (v) above, any expenditure on acquiring the minor items or the assets like tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, fans, washing machines, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for additional capitalization for determination of tariff w.e.f. 1.4.2009.

(vi) In case of gas/liquid fuel based open/combined cycle thermal generating stations, any expenditure which has become necessary on renovation of gas turbines after 15 of operation from its COD and the expenditure necessary due to obsolescence or non-availability of spares for successful and efficient operation of the stations;

Provided that any expenditure included in the R & M on consumables and cost of components and spares which is generally covered in the O & M expense during the major overhaul of gas turbine shall be suitably deducted after due prudence from the R & M expenditure to be allowed.

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

(vii) Any undercharged liability towards final payment/withheld payment due to contractual exigencies for works executed within the cut-off date, after prudence check of the details of such deferred liability, total estimated cost of package, reason

for such withholding of payment and release of such payments etc.”

12. The details submitted by the petitioner in support of its claim for projected additional capital expenditure is given hereunder:

Years	Nature and details of expenditure	Amount (₹ in lakh)
2010-11	Sub-station- New Lightening Arrestors for Reactors	34.09
2013-14	Transmission line- Tower Strengthening which has become necessary due to change in the wind zone	204.19
	Total	238.28

13. The petitioner has claimed projected additional capital expenditure amounting to ₹ 34.09 lakh and ₹ 204.19 lakh during 2010-11 and 2013-14 respectively on account of additional capital expenditure for New Lightening Arresters (LAs) for Reactors and tower strengthening for transmission asset which has become necessary due to change in the wind zone.

14. As regards the LAs, it is noticed that the same were commissioned during 1989-93 and have already completed around 15-20 years. In this context, the IEEE paper on assessment of the reliability of in-service gapped silicon-carbide distribution surge arresters concludes that “most gapped silicon carbide distribution lightning arresters of age in excess of 13 to 15 years have characteristics which render them no longer suitable for service”. In the light of this assessment about the reliability of in-service gapped silicon-carbide

distribution surge arresters, we hold that the proposed expenditure on new LAs is necessary for successful and efficient operation of transmission system.

15. As regards tower strengthening, the petitioner has submitted that 400 kV S/C Itarsi-Indore Ckt-I was designed as per IS: 802-1977 in medium wind zone and as per IS: 802-1995 this line falls in wind zone- 2.

16. The petitioner has submitted that tower strengthening is to be carried out on 415 Nos of suspension towers of 400 kV S/C Itarsi-Indore Ckt-I. The approximate total weight of additional tower members is 249 MT. The strengthening work includes supply of tower members and its installation in charged transmission line. We notice that the supply and installation works are proposed to be undertaken through competitive bidding process and the actual cost may vary with respect to estimated cost depending on market conditions prevailing at the time of procurement.

17. During the course of hearing on 15.3.2011, the representative of MPPTCL submitted that tower strengthening should be undertaken at those places where there has been some incidence of tower failure on account of changes in the wind zone. However, a generalized approach of strengthening of all the suspension towers of a transmission line which has never experienced any failure in last 20 years of its



commissioning cannot be considered as prudent exercise. The representative of MPPTCL also urged that the prayer of the petitioner for additional capital expenditure on account of tower strengthening is not in conformity with Regulation 9 (2) (v) of the 2009 regulations and should not be allowed.

18. Taking cognizance of the fact that although there was no instance of collapse of transmission towers in regard to 400 kV S/C Itarsi-Indore, Ckt-I, two transmission tower failures have been reported during the years 1997 and 1999 in Itarsi - Indore, ckt-II, the Commission, vide Record of Proceedings dated 15.3.2011, directed the petitioner to submit the report of the failure of these towers.

19. The petitioner vide its affidavit dated 4.5.2011 has submitted that the case of failure of towers of 400 kV S/C Itarsi - Indore, Ckt-II transmission line is very old and therefore, the records thereof are not traceable. Hence, the petitioner has submitted that its inability to provide the requisite information is unintentional and may kindly be condoned. We accept the statement made by the petitioner under affidavit and condone the inability of the petitioner to produce the records in question and proceed to formulate our views based on available information.

20. We have examined the issue of tower strengthening of towers keeping in view the latest code IS 802:1995 considers the 'Drag Coefficient' and 'Gust Response Factor' while calculating the forces on the towers, conductors and insulators. Based on these two additional factors, the forces calculated on towers etc as per IS 802:1995, are more than those calculated as per IS 802:1977. The terrain category 3 has been calculated as under:

- (i) Design Wind Pressure, P_d is given in the IS 802:1995 for each of the six wind zones. The wind load on tower body, F_{wt} , as per the IS 802:1995, is calculated by the following formula:

$$\text{Wind load on tower, } F_{wt} = P_d * C_{dt} * A_o * G_T$$

Where C_{dt} is the Drag Coefficient and the value of C_{dt} ranges from 2 to 3.6 depending upon the solidity ratio of the tower.

G_T is the Gust Response Factor and value of G_T ranges from 1.7 to 3.8 depending upon the height of the panel and terrain category and

A_o is the net surface area of the legs, bracings

For terrain category 2 and average height of tower 20 metre, value of G_T is 2.2, approximate value of C_{dt} for lattice type of structures is 3 and P_d for Reliability Level 1 for Terrain Category 2 for Wind Zone 3 is 614 Newton per square metre. [All these figures are available in various Tables in IS 802:1995]

$$F_{wt} = 2.2 * 3 * P_d * A_o = (6.6 * 614 * A_o) = 4052 A_o \text{ Newton}$$

[as per the IS 802:1995]

Wind load on tower as per as per the IS 802:1977 is calculated based on the Factor of Safety.

$$\text{Wind load on tower} = (\text{Factor of Safety}) * \text{Wind Pressure} * A_o$$

$$= (1.5 * 1270 * A_o) \text{ N} = 1905 A_o \text{ Newton}$$

[as per the IS 802:1977]



Where 1270 N/m^2 is the wind pressure on towers for light intensity of pressure upto the 30 metre above Mean Retarding Surface and Factor of Safety is 1.5.

- (ii) Thus , it is noted from the above calculations that wind load on towers as per IS 802:1995 is more than that as per the IS 802:1977.

21. It can be noted from the foregoing that wind load on towers as per IS 802:1995 is more than that as per the IS 802:1977. Accordingly, we are convinced about the justification for the projected additional capital expenditure for tower strengthening as claimed by the petitioner. As regards cost factor highlighted by the respondents, we direct the petitioner to exercise due diligence on the cost aspect while awarding the contracts for execution of the works.

22. From the foregoing, it is evident that wind load on towers as per IS 802:1995 is more than that as per IS 802:1977. Accordingly, we are convinced about the justification for the projected additional capital expenditure for tower strengthening as claimed by the petitioner. As regards cost factor highlighted by the respondents, we direct the petitioner to exercise due diligence on the cost aspect while awarding the contracts for execution of the works.

23. In the light of the foregoing discussions, we allow the capitalization of ₹ 34.09 lakh and ₹ 204.19 lakh during 2010-11 and 2013-14, respectively.



DEBT- EQUITY RATIO

24. Regulation 12 of the 2009 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."

25. Details of debt-equity in respect of the transmission asset as on 1.4.2009 are as under:

As Admitted on 31.3.2009		
	Amount (₹ in lakh)	%
Debt	13540.32	50.09
Equity	13494.13	49.91
Total	27034.45	100.00

26. The above debt equity ratio has been considered for tariff determination in this order as provided by Regulation 12 (2) of the 2009 regulations.

27. In respect of the additional capital expenditure, debt-equity ratio of 70:30 has been adopted as mandated by clause (3) read with (1) of Regulation 12 of the 2009 regulations, extracted hereinabove. Details of the debt-equity in respect of additional capital expenditure are as under:

Proposed additional capital expenditure		
2010-11	Amount (₹ in lakh)	%
Debt	23.86	70.00
Equity	10.23	30.00
Total	34.09	100.00
Proposed additional capital expenditure		
2013-14	Amount (₹ in lakh)	%
Debt	142.93	70.00
Equity	61.26	30.00
Total	204.19	100.00

RETURN ON EQUITY

28. Regulation 15 of the 2009 regulations provides that,-

"15. (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 12.

(2) Return on equity shall be computed on pre-tax basis at the base rate of 15.5% to be grossed up as per clause (3) of this regulation:

*Provided that in case of projects commissioned on or after 1st April, 2009, an additional return of 0.5% shall be allowed if such projects are completed within the timeline specified in **Appendix-II**:*

Provided further that the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever.

(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."

29. The petitioner has computed return on equity on pre-tax basis on 11.33% MAT in accordance with tax rate applicable for the year 2008-09 and has claimed return on equity @ 17.481% .

30. The petitioner has prayed for grossing up of base rate of return with MAT rate as per the applicable Finance Act. It is clarified that the Commission has notified the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (Second Amendment) Regulations, 2011 on 21.6.2011. Accordingly, the petitioner shall be entitled to recover the shortfall, if any, in the annual fixed charges on account of

Return on Equity due to change in applicable Minimum Alternate Tax in accordance with clause (5) of Regulation 15 of the 2009 regulations.

31. In view of the above , the following amount of equity has been considered for calculation of return on equity:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Equity	13494.13	13494.13	13504.36	13504.36	13504.36
Addition due to additional capital expenditure	0.00	10.23	0.00	0.00	61.26
Closing Equity	13494.13	13504.36	13504.36	13504.36	13565.61
Average Equity	13494.13	13499.24	13504.36	13504.36	13534.99
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%	15.50%
Tax rate for the year 2008-09	11.330%	11.330%	11.330%	11.330%	11.330%
Rate of Return on Equity (Pre Tax)	17.481%	17.481%	17.481%	17.481%	17.481%
Return on Equity (Pre Tax)	2358.91	2359.80	2360.70	2360.70	2366.05

INTEREST ON LOAN

32. Regulation 16 of the 2009 regulations provides that,-

"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."

33. In these calculations, interest on loan has been worked out as detailed below:

(a) Tariff has been worked out considering normative loan and normative repayments. Depreciation allowed has been taken as normative repayment for the tariff period 2009-14;

(b) Weighted average rate of interest on actual loan worked out has been applied on the notional average loan during the year to arrive at the interest on loan;

(c) Proposed domestic loan (for year 2013-14) taken for the additional capital expenditure has not been taken into consideration for working out the weighted average rate of interest;

(d) Repayment of Bond XXXII (Drawn on 31.3.2011, for additional capital expenditure 2010-11) starts w.e.f 29.3.2014, but no repayment for the loan has been considered by the petitioner for the 2013-14 period whereas the same has been taken into account for the purpose of calculations;

(e) There is an addition to the normative loan amounting to ₹ 23.86 lakh and ₹142.93 lakh, corresponding to projected additional capital expenditure during 2010-11 and 2013-14, respectively. This loan too gets repaid during the same year as depreciation has been considered as repayment and the net loan closing is zero at the end of the above stated periods.

34. The detailed calculations in support of the weighted average rate of interest for transmission asset are contained in Annexure attached to this



order. Based on the above, annual interest on loan has been worked out as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Gross Normative Loan	13540.32	13540.32	13564.18	13564.18	13564.18
Cumulative Repayment upto Previous Year	13540.32	13540.32	13564.18	13564.18	13564.18
Net Loan-Opening	0.00	0.00	0.00	0.00	0.00
Addition due to additional capital expenditure	0.00	23.86	0.00	0.00	142.93
Repayment during the year	0.00	23.86	0.00	0.00	142.93
Net Loan-Closing	0.00	0.00	0.00	0.00	0.00
Average Loan	0.00	0.00	0.00	0.00	0.00
Weighted Average Rate of Interest on Loan	0.0000%	8.8400%	8.8400%	8.8400%	8.8400%
Interest	0.00	0.00	0.00	0.00	0.00

DEPRECIATION

35. Regulation 17 of the 2009 regulations provides for computation of depreciation in the following manner, namely:

"17. (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.

XXXX
XXXX

(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."

36. The transmission asset covered in the petition have already completed 12 years. Thus, the remaining depreciation value of the asset been spread over the balance useful life of the asset. The balance useful life of the asset has been calculated as 20 years as on 1.4.2004, in the order dated 14.12.2005 in Petition No. 111/2004.

37. Details of the depreciation worked out are as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Gross block (as per last order)	27034.45	27034.45	27068.54	27068.54	27068.54
Addition during 2009-14 due to additional capital expenditure	0.00	34.09	0.00	0.00	204.19
Closing gross block	27034.45	27068.54	27068.54	27068.54	27272.73
Average gross block	27034.45	27051.50	27068.54	27068.54	27170.64
Rate of Depreciation	5.1877%	5.1878%	5.1879%	5.1879%	5.1882%
Depreciable Value	24123.98	24139.32	24154.66	24154.66	24246.54
Weighted Balance Useful life of the asset (Balance life as per order dated 14.2.2008 in petition no. 111/2004)	15	14	13	12	11
Remaining Depreciable Value	6044.74	5657.10	5268.36	4863.10	4549.73
Depreciation	402.98	404.08	405.26	405.26	413.61

OPERATION & MAINTENANCE EXPENSES

38. Clause (g) of regulation 19 of the 2009 regulations prescribes the norms for operation and maintenance expenses based on the type of

sub-station and transmission line. Norms prescribed in respect of the elements covered in the instant petition are as under:

Elements	2009-10	2010-11	2011-12	2012-13	2013-14
Double Circuit (Twin conductor) AC transmission line (₹ lakh per km)	0.627	0.663	0.701	0.741	0.783
Single Circuit (Twin conductor) AC transmission line (₹ lakh per km)	0.358	0.378	0.400	0.423	0.447
400 kV bay (₹ lakh per Bay)	52.40	55.40	58.57	61.92	65.46

39. Based on the above norms, the petitioner has calculated the following operation and maintenance expenses which is allowed:

Element (Asset-I)	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
400 kV S/C (twin conductor) transmission line (695 km).	248.81	262.71	278	293.985	310.665
400 kV D/C (twin conductor) transmission line (592 km)	371.184	392.496	414.992	438.672	463.536
400 kV Bay (13 bays)	681.2	720.2	761.41	804.96	850.98
Total O&M	1301.19	1375.41	1454.40	1537.62	1625.18

40. The petitioner has submitted that O & M expenditure for 2009-14 tariff block had been arrived on the basis of normalized actual O & M expenses of the petitioner during the year 2003-04 to 2007-08. The wage hike of 50% on account of pay revision of the employees of public sector undertaking was also considered while calculating the O & M charges for 2009-14 periods. The petitioner has submitted that it would approach the Commission for suitable revision in the norms of O & M expenses in case the impact of wage hike w.e.f. 1.1.2007 is more than 50%. With reference to the submission of the

petitioner, it is clarified that if any such application is made, it will be dealt with in accordance with law.

INTEREST ON WORKING CAPITAL

41. As per the 2009 regulations the components of the working capital and the interest thereon are discussed hereunder:

(i) Receivables: As per Regulation 18(1) (c) (i) of the 2009 regulations, receivables will be equivalent to two months' average billing calculated on target availability level. The petitioner has claimed the receivables on the basis of 2 months' transmission charges claimed in the petition. In the tariff being allowed, receivables have been worked out on the basis of 2 months' transmission charges.

(ii) Maintenance spares: Regulation 18(1)(c)(ii) of the 2009 regulations provides for maintenance spares @ 15% per annum of the O & M expenses from 1.4.2009. The value of maintenance spares has accordingly been worked out.

(iii) O & M expenses: Regulation 18(1) (c) (iii) of the 2009 regulations provides for operation and maintenance expenses for one month as a component of working capital. The petitioner has claimed O&M expenses for 1 month of the

respective year as claimed in the petition. This has been considered in the working capital.

(iv) Rate of interest on working capital: As per Regulation 18(3) of the 2009 regulations, rate of interest on working capital shall be on normative basis and shall be equal to the SBI short-term Prime Lending Rate as on 1.4.2009 or on 1st April of the year in which the project or part thereof (as the case may be) is declared under commercial operation, whichever is later for the unit or station whose date of commercial operation falls on or before 30.6.2010. The petitioner has claimed interest on working capital @ 12.25% based on SBI PLR as on 1.4.2009, which is in accordance with the 2009 regulations as amended on 20.6.2011 and has been allowed.

42. Necessary computations in support of interest on working capital are appended hereinbelow:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance Spares	195.18	206.31	218.16	230.64	243.78
O & M expenses	108.43	114.62	121.20	128.14	135.43
Receivables	697.62	710.95	725.13	739.69	757.35
Total	1,001.23	1,031.88	1,064.49	1,098.47	1,136.55
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
Interest	122.65	126.41	130.40	134.56	139.23

TRANSMISSION CHARGES

43. The transmission charges being allowed for the transmission assets are summarized below:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	402.98	404.08	405.26	405.26	413.61
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on equity	2358.91	2359.80	2360.70	2360.70	2366.05
Interest on Working Capital	122.65	126.41	130.40	134.56	139.23
O & M Expenses	1301.19	1375.41	1454.40	1537.62	1625.18
Total	4185.73	4265.70	4350.75	4438.14	4544.07

Filing fee and the publication expenses

44. The petitioner has sought approval for the reimbursement of fee paid by it for filing the petition. In accordance with our decision in order dated 11.1.2010 in Petition No. 109/2009, the petitioner shall be entitled to recover the filing fee from the beneficiaries on pro rata basis. The petitioner shall also be entitled for reimbursement of publication expenses from the beneficiaries on pro-rata basis.

Licence fee

45. The petitioner has prayed for reimbursement of licence fee separately from the respondents. It is clarified that the matter is under consideration of the Commission and any decision on the issue as and when taken will be applicable to this petition.

Service Tax

46. The petitioner has made a specific prayer to be allowed to bill and recover the Service tax on transmission charges separately from

the respondents if the exemption granted to it is withdrawn and transmission of power is made a taxable service. As the petitioner has no liability for service tax at present, the prayer is infructuous and is accordingly rejected.

47. The transmission charges allowed shall be recovered on monthly basis in accordance with Regulation 23 and shall be shared by the respondent in accordance with Regulation 33 of the 2009 regulations up to 30.6.2011. With effect from 1.7.2011, billing, collection and disbursement of the transmission charges shall be governed by the provisions of Central Electricity Regulatory Commission (Sharing of inter-State transmission charges and losses) Regulations, 2010 and the Removal of Difficulties orders issued thereunder.

48. This order disposes of Petition No. 275/2010.

Sd/-

(V.S.Verma)
Member

Sd/-

(S. Jayaraman)
Member

Sd/-

(Dr. Pramod Deo)
Chairperson



Annexure**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN**

(₹ in lakh)

lo	Details of Loan	2009-10	2010-11	2011-12	2012-13	2013-14
1	Bond XXXII					
	Gross loan opening	0.00	0.00	23.86	23.86	23.86
	Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	23.86	23.86	23.86
	Additions during the year	0.00	23.86	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	1.99
	Net Loan-Closing	0.00	23.86	23.86	23.86	21.87
	Average Loan	0.00	11.93	23.86	23.86	22.87
	Rate of Interest	8.84%	8.84%	8.84%	8.84%	8.84%
	Interest	0.00	1.05	2.11	2.11	2.02
	Rep Schedule	12 equal annual installment from 29.03.2014				
	Total Loan					
	Gross loan opening	0.00	0.00	23.86	23.86	23.86
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	23.86	23.86	23.86
	Additions during the year	0.00	23.86	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	1.99
	Net Loan-Closing	0.00	23.86	23.86	23.86	21.87
	Average Loan	0.00	11.93	23.86	23.86	22.87
	Weighted Average Rate of Interest	0.0000%	8.8400%	8.8400%	8.8400%	8.8400%
	Interest	0.00	1.05	2.11	2.11	2.02

