

CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 91/2009

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

Date of Hearing: 15.3. 2011

Date of Order: 4.7.2011

In the matter of:

Approval under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations 1999, and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations 2009, for determination of transmission tariff for the Transmission System associated with 400 kV Central transmission Project-I in Southern 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. Karnataka Power Transmission Corporation, Ltd.
Bangalore
2. Transmission Corporation of Andhra Pradesh Ltd.
Hyderabad
3. Kerala State Electricity Board, Thiruvananthapuram
4. Tamil Nadu Electricity Board, Chennai
5. Electricity Department, Govt. of Pondicherry, Pondicherry
6. Eastern Power Distribution Company of Andhra Pradesh
Ltd., Visakhapatnam
7. Southern Power Distribution Company of Andhra
Pradesh Ltd., Tirupati
8. Central Power Distribution Company of Andhra Pradesh
Ltd., Hyderabad
9. Northern Power Distribution Company of Andhra
Pradesh Ltd. Warangal
10. Bangalore Electricity Supply Company Ltd., Bangalore
11. Gulbarga Electricity Supply Company Ltd., Gulbarga
12. Hubli Electricity Supply Company Ltd., Hubli
13. Mangalore Electricity Supply Company Ltd., Mangalore
14. Chamundeswari Electricity Supply Company Ltd.,
Mysore
15. Electricity Department, Govt. of Goa, Panaji

..... **Respondents**



The following was present:

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

ORDER

This petition has been filed for approval of transmission tariff for the Transmission System associated with 400 kV Central transmission Project-I in Southern Region (hereinafter referred to as “the transmission system”) for the 2009-14 period, in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009, (hereinafter referred to as “the 2009 regulations”). The petitioner has sought the following additional reliefs:

- (a) Approve the reimbursement of expenditure by the beneficiaries towards petition filing fee, license fee, publication expenditure and other expenditure (if any) in related to the filing of petition and
- (b) Approve the inclusion of service tax as one of the components in transmission charges.

2. Transmission charges for the transmission system for the period 1.4.2004 to 31.3.2009 were initially approved by the Commission vide its order dated 14.12.2005 in Petition No. 135/2004. The above tariff was revised vide order dated 17.3.2008 by way of implementation of the Judgment of the Appellate Tribunal for Electricity dated 4.10.2006 in Appeal No. 135 of 2005.

Capital cost admitted by the Commission as on 31.3.2009 based on which transmission tariff was awarded is Rs. 28282.93 lakh.

3. The petitioner has claimed the following transmission charges for admitted cost less de-capitalization as on 31.3.2009 (hereinafter referred to as “Stream –I”):

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	450.74	450.74	450.74	450.74	450.74
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on equity	2310.55	2310.55	2310.55	2310.55	2310.55
Interest on Working Capital	129.38	133.47	137.83	142.23	147.27
O & M Expenses	1436.05	1517.65	1604.95	1696.89	1793.68
Total	4326.72	4412.41	4504.07	4600.61	4702.24

4. The petitioner has also claimed transmission charges for the additional capital expenditure incurred or proposed to be incurred during the tariff period 2009-14 as under (hereinafter referred to as “Stream –II”):

	(₹ in lakh)				
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	-	-	11.96	32.93	41.71
Interest on Loan	-	-	10.98	27.75	31.69
Return on Equity	-	-	9.75	25.64	31.78
Interest Working Capital	-	-	0.68	1.80	2.19
O&M Expenses	-	-			
Total	-	-	33.37	88.12	107.37

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

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance Spares	215.41	227.65	240.74	254.53	269.05
O & M expenses	119.67	126.47	133.75	141.41	149.47
Receivables	721.12	735.40	756.24	781.46	801.61
Total	1056.20	1089.52	1130.73	1177.40	1220.13
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
Interest	129.38	133.47	138.51	144.23	149.47

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

(₹ in lakh)					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
O and M Expenses	-	-	-	-	-
Maintenance Spares	-	-	-	-	-
Receivables	-	-	5.56	14.69	17.90
Total Working Capital	-	-	5.56	14.69	17.90
Rate of Interest	-	-	12.25	12.25	12.25
Interest on Working Capital	-	-	0.68	1.80	2.19

7. 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.

8. Reply has been filed only by the Tamil Nadu Generation and Distribution Corporation Ltd. (TANGEDCO), the successor of the fourth respondent, viz. Tamil Nadu Electricity Board. The respondent has raised the following issues:

(a) The petitioner is obliged to carry out the necessary strengthening at his own cost, as the original design is found to be without adequate safety margin to take care of the possible change in wind pattern. Even if hip bracing up to bottom cross arm of all the suspension towers were absolutely necessary, the cost could be recovered in three annual installments instead of treating it as additional capital expenditure.

(b) Actual equity should be considered instead of the normative equity adopted so far and equity should be limited to 30% in case

actual equity is more than 30% in view of the change in regulations awarding pre-tax return on equity.

(c) The claim for additional capitalization be negated in line with the decision in the earlier tariff period.

(d) Grossing up of base rate of return on account of change in income tax rates during the tariff period should be allowed based on the proposed amendment to the 2009 regulations.

(e) The claim for service tax be negated in line with the decision of the Commission in its order dated 23.9.2010 in Petition No. 62/2009.

(f) Regulations do not provide for reimbursement of licence fee and it is a levy on the petitioner to be in the business and therefore, it should not be passed on to the beneficiaries.

(g) The petitioner's request to revise the norms for O&M expenditure, if the impact of wage hike effective from 1.1.2007 is more than 50%, should be negated as the 2009 regulations do not provide for revisiting the normative O&M charges.

(h) The provisions of Regulation 5 of the 2009 regulations be relaxed to allow reasonable time to the beneficiaries to liquidate the arrears without any interest considering the financial hardship faced by them.

9. As regards the respondent's request for relaxation of Regulation 5 of the 2009 regulations, it is clarified that the regulations provide for payment of interest by the beneficiaries or the transmission licensees for the shortfall or excess recovery in the transmission charges respectively. On account of delay in determination of the transmission charges, the respondent has retained the arrears which it would have otherwise paid on month to month basis and the petitioner has been deprived of the benefits of the arrears when it was due. Therefore, Regulation 5 is evenly balanced in favour of the petitioner and the respondents and does not require relaxation. Moreover, the arrears are to be liquidated over a period of 6 months which in our view is sufficient.

10. Having heard the representatives of the parties and perused the material on records, we proceed to dispose of the petition. While doing so, we also take care of the submissions of the respondent and address them in the relevant paragraphs.

CAPITAL COST

11. The last proviso to Regulation 7 (2) of the 2009 regulations, as amended vide Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (Second Amendment) Regulations, 2011, provides as under:

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

12. As stated herein above, the Commission had vide its order dated 17.3.2008 in Petition No. 135/2004 approved the final Transmission Tariff for the period 2004-09, based on capital cost of ₹ 28282.93 lakh and there is no projected additional capital expenditure thereafter up to 31.3.2009. Accordingly, capital expenditure of ₹ 28282.93 lakh, as on 1.4.2009 has been considered for tariff determination for 2009-14 period.

ADDITIONAL CAPITAL EXPENDITURE

13. With regard to additional capital expenditure, Regulation 9(2) of the 2009 regulations as amended vide Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (Second Amendment) Regulations, 2011, 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 year 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 expenses 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-materialisation of full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station.

(viii) Any undischarged 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.”

14. The petitioner has projected additional capital expenditure amounting to ₹ 372.00 lakh and ₹ 234.00 lakh for the year 2011-12 and 2012-13 respectively. The projected additional capital expenditure claimed in the current petition pertains to tower strengthening necessitated by change in the wind zone.

15. The Commission, vide letter dated 20.1.2011 had directed the petitioner to furnish following information/clarification under affidavit by 4.2.2011 with an advance copy to the respondents:

“(i) The year of design of towers of the Transmission Lines mentioned in the petition. The DOCO of the Transmission Lines mentioned are in the year 1991 and 1992.

(ii) The justification of Tower strengthening required as there is no reported failure of towers in the Transmission Lines or change in wind speed zones.

(iii) Justification of actual works to be undertaken under additional capitalisation along with the cost break-up.”

16. In response, the petitioner vide affidavit dated 27.2.2011, has stated that (i) the towers of the Transmission Line were designed in the year 1988 as per IS 802:1977, (ii) that there were failures of towers (7 nos.) on 400kV S/C Nagarjunasagar-Gooty line in year 1993 and (iii) that the modification/strengthening of lines are required due to the change in wind zone as per design criteria in IS : 802 from light wind zone (1977) to wind zone – 3 (1995).

17. The Petitioner has further submitted that tower strengthening is to be carried out on 390 Nos. suspension towers of 400 kV S/C Ramagundam-Khammam line, by providing additional bracings in the towers. The approx total weight of additional tower members is 234 MT. The strengthening work includes supply of the tower members and its installation in charged transmission line. The cost of the strengthening work has been estimated as ₹ 234 lakh. Further, tower strengthening is to be carried out on 620 Nos. suspension towers of 400 kV S/C Nagarjunsagar-Gooty line (by providing additional bracings in the towers). The approx total weight of additional tower members is 372 MT. The strengthening work includes supply of the tower members and its installation in charged transmission line. The cost of the strengthening work has been estimated as ₹ 372 lakh.

18. TANGEDCO in its affidavit dated 22.1.2011, has submitted that tower strengthening is debatable, as the strengthening of towers are proposed, on the pretext of change in wind zone and on the basis of the structural analysis

carried out on the straight towers used in Ballabgarh – Dadri –Kurwail Nagar in Northern Region.

19. During the hearing on 15.3.2011, the Commission directed the petitioner to submit the following information/clarification on affidavit:

- (a) Report of the failure of towers during 1993;
- (b) To establish if the safety margin available in the tower design is not sufficient to take care of the wind zone;
- (c) The details of exact design changes in the proposed strengthening of towers and calculation indicating that towers strengthening can be achieved only up to 90-92%.

20. The petitioner in its affidavit dated 15.4.2011 has submitted the “Report on failures of suspension towers – 400 kV S/C Nagarjunsagar – Munirabad and Nagarjunsagar – Gooty Transmission Line”. The said Report concludes with the following finding:

“The collapses of these towers have occurred due to strong wind forces which exceeded the wind force considered for design development of tower. In the recent study and comparison of wind data by Indian Meteorological Department (IMD) for this area which reflected in IS 875:1975-1987 specified 51% more wind pressure compared to the design wind pressure. Therefore, tower in this area may fail when at 49% less wind pressure than the highest wind pressure predicted by the IMD as well as IS 875:1987. Therefore, this failure can be attributable to the excessive wind pressure experienced by the transmission towers in that area.”

21. We have considered the issue. It is observed that the latest code IS 802:1995 considers the “Drag Coefficient’ and ‘Gust Response Factor’ while calculating the forces on the towers, conductors and insulators whereas the earlier code IS 802:1977 considered the factor of safety. 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.

22. In this regard, we reproduce hereunder the sample calculation for terrain Category 2:

“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]

$$F_{wt} = 2.2 * 3 * P_d * A_o = (6.6 * 614 * A_o) = 4052 A_o \text{ Newton} \\ \text{[As per the IS 802:1995]}$$

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

$$\text{Wind load on tower} = (\text{Factor of Safety}) * \text{Wind Pressure} * A_o \\ = (1.5 * 1270 * A_o) \text{ N} = 1905 A_o \text{ Newton} \\ \text{[As per the IS 802:1977]}$$

Where 1270 N/m² 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.”

23. It may be seen from the foregoing that wind load on the towers as per IS 802:1995 is more than the IS 802:1977 specification. Accordingly, we are

convinced about the justification for the projected additional capital expenditure for tower strengthening as claimed by the petitioner. As regards cost of the mild steel, etc., as 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.

24. In the light of the foregoing discussions, we allow the petitioner's claim for additional capital expenditure.

(₹ in lakh)					
	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Gross Block	28282.93	28282.93	28282.93	28654.93	28889.93
Addition during 2009-14	0.00	0.00	372.00	234.00	0.00
Gross Block	28282.93	28282.93	28654.93	28888.93	28888.93

DEBT- EQUITY RATIO

25. Clause (2) of 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.”

26. Details of debt-equity in respect of the transmission assets as admitted by the Commission for determination of tariff for the period ending 31.3.2009 are as under:

Admitted on 31.3.2009		
	Amount (₹ in lakh)	%
Debt	15065.43	53.27
Equity	13217.50	46.73
Total	28282.93	100.00

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

28. In respect of the additional capital expenditure debt-equity ratio of 70:30 has been adopted as mandated by clause (3) read with (1) extracted hereinabove. Details of the debt–equity in respect of additional capital expenditure are given hereunder:

Normative		
2011-12	Amount (₹ in lakh)	%
Debt	260.40	70.00
Equity	111.60	30.00
Total	372.00	100.00
Normative		
2012-13	Amount (₹ in lakh)	%
Debt	163.80	70.00
Equity	70.20	30.00
Total	234.00	100.00

RETURN ON EQUITY

29. Regulation 15 of the 2009 regulations, as amended vide Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (Second Amendment) Regulations, 2011, 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.”

30. Return on Equity has been calculated based on pre- tax basis on 11.33% MAT in accordance with the tax rate applicable for 2008-09 and has been allowed @ 17.481%.

31. As regards the petitioner's claim for grossing up of Return of Equity as per the applicable tax rate in accordance with the relevant Finance Act, the petitioner shall be entitled to claim the shortfall on account of Return on Equity due to change in the applicable Minimum Alternate Tax in accordance with clause (5) of Regulation 15 of 2009 regulations.

32. Return on Equity as admissible to the petitioner has been calculated as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Equity	13217.50	13217.50	13217.50	13329.10	13399.30
Addition due to additional capital expenditure	0.00	0.00	111.60	70.20	0.00
Closing Equity	13217.50	13217.50	13329.10	13399.30	13399.30
Average Equity	13217.50	13217.50	13273.30	13364.20	13399.30
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)	2310.55	2310.55	2320.31	2336.20	2342.33

INTEREST ON LOAN

33. 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."

34. In the present case, it is noticed that as per para 19 of the order dated 14.12.2005 in Petition No 135/2004 awarding tariff for the 2004-09 period, entire loan was repaid during 2002-03 and petitioner was not entitled to interest on loan.

35. Consequent to the additional capital expenditure during the current tariff period, there is an addition to the normative loan amounting to ₹260.40 lakh and ₹163.80 lakh, during 2011-12 and 2012-13 respectively. However, 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.

36. There is no actual loan corresponding to the projected additional capital expenditure. Accordingly, proposed domestic loan for additional capital expenditure for the years 2011-12 and 2012-13 has not been taken in to consideration for calculating weighted average rate of interest.

37. In view of the fact that the average loan during the aforesaid period is zero, the concept of weighted average rate of interest is not applicable in this case. Therefore, the interest on loan has been considered as nil.

DEPRECIATION

38. 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.

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.”

39. In these calculations, depreciation has been worked out on the basis of capital expenditure as on 1.4.2009 as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Gross Block	28282.93	28282.93	28282.93	28654.93	28888.93
Addition due to Projected Additional Capitalisation	0.00	0.00	372.00	234.00	0.00
Closing Gross Block	28282.93	28282.93	28654.93	28888.93	28888.93
Average Gross Block	28282.93	28282.93	28468.93	28771.93	28888.93
Rate of Depreciation	5.1312%	5.1312%	5.1322%	5.1337%	5.1343%
Depreciable Value	25075.56	25075.56	25242.96	25515.66	25620.96
Elapsed Life (Beginning of the year)	16	17	18	19	20
Balance Useful life of the asset (As per CERC Order in pet No. 7/2002)	16	15	14	13	12
Remaining Depreciable Value	7211.83	6761.09	6477.75	6287.75	5909.38
Depreciation	450.74	450.74	462.70	483.67	492.45

OPERATION & MAINTENANCE EXPENSES

40. 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 line. Norms prescribed in respect of the elements covered in the instant petition are given hereunder:

	(₹ in lakh)				
Name of Elements	2009-10	2010-11	2011-12	2012-13	2013-14
400 kV Twin conductor, S/C, transmission line(₹ lakh/ bay)	0.358	0.378	0.400	0.423	0.447
400 kV Bay (₹ lakh/ bay)	52.40	55.40	58.57	61.92	65.46

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

(₹ in lakh)					
Name of Elements	2009-10	2010-11	2011-12	2012-13	2013-14
400 kV Twin conductor, S/C, transmission line (1230.294 km.)	440.45	465.05	492.12	520.41	549.94
400 kV Bay 19 Nos.	995.6	1052.6	1112.83	1176.48	1243.74
Total	1436.05	1517.65	1604.95	1696.89	1793.68

42. The petitioner has submitted that 50% compensation considered in the O&M norms in 2009 regulations on account of pay revision of the employees of public sector undertaking is insufficient to meet the actual impact of pay revision of its employees. The petitioner intends to approach the Commission for suitable revision in the O & M norms in case the impact of wage hike with effect from 1.1.2007 is more than 50%. If any application is made by the petitioner, the same shall be dealt with in accordance with law.

INTEREST ON WORKING CAPITAL

43. 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' of fixed cost. 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 short-term Prime Lending Rate of State Bank of India as on 1.4.2009 or on 1st April of the year in which the project or part thereof (as the case may be) is declared under commercial operation, whichever is later. The interest on working capital is payable on normative basis notwithstanding that the transmission licensee has not taken working capital loan from any outside agency. 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 and has been allowed.

44. Interest on working capital admissible to the petitioner has been worked out as under:

(₹ in lakh)					
	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance Spares	215.41	227.65	240.74	254.53	269.05
O & M expenses	119.67	126.47	133.75	141.41	149.47
Receivables	721.12	735.40	754.37	776.74	796.21
Total	1,056.20	1,089.52	1,128.86	1,172.68	1,214.74
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
Interest	129.38	133.47	138.29	143.65	148.81

TRANSMISSION CHARGES

45. The petitioner shall be entitled to the following transmission charges in respect of the transmission asset:

(₹ in lakh)					
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	450.74	450.74	462.70	483.67	492.45
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on equity	2310.55	2310.55	2320.31	2336.20	2342.33
Interest on Working Capital	129.38	133.47	138.29	143.65	148.81
O & M Expenses	1436.05	1517.65	1604.95	1696.89	1793.68
Total	4326.72	4412.41	4526.24	4660.41	4777.27

Filing fee and the publication expenses

46. The petitioner has sought reimbursement of fee paid by it for filing the petition. In accordance with the Commission's decision in order dated 11.1.2010 in Petition No. 109/2009, the petitioner shall be entitled to recover the filing fee directly from the beneficiaries on *pro rata* basis.

47. The petitioner shall also be entitled for reimbursement of the publication expenses in connection with the present petition directly from the beneficiary on *pro rata* basis.

Service Tax

48. The petitioner prayed 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. We consider the prayer pre-mature. The petitioner is at liberty to approach the Commission for any relief as per law.

49. The transmission charges allowed shall be recovered on monthly basis in accordance with Regulation 23. The transmission charges shall be shared by the respondents in accordance Regulation 33 of the 2009 regulations upto 30.6.2011 and by the designated ISTS customers with effect from 1.7.2011 in accordance with Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and losses, Regulations, 2010).

50. This order disposes of Petition No. 91/2009.

Sd/-

**(V.S.Verma)
Member**

Sd/-

**(S.Jayaraman)
Member**

Sd/-

**(Dr. Pramod Deo)
Chairperson**