CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 334/2010

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

Date of Hearing: 29.9.2011 **Date of Order: 13.8.2012**

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 ATS of Kopili-Khandong (Additional transmission Gohpur- Itanagar) in North Eastern Region for the tariff block 2009-14.

And

In the matter of:

Power Grid Corporation of India Ltd., Gurgaon **……Petitioner**

Vs

1. Assam State Electricity Board, Guwahati
2. Meghalaya Energy Corporation Ltd., Shillong
3. Government of Arunachal Pradesh, Itanagar
4. Power & Electricity Department, Government of Mizoram, Aizwal
5. Electricity Department, Government of Manipur, Imphal
6. Department of Power, Government of Nagaland, Kohima
7. Tripura State Electricity Corporation, Agartala **……Respondents**

The following were present:

1. Shri S.S. Raju, PGCIL
2. Shri M.M. Mondal, PGCIL
3. Shri Rajeev Gupta, PGCIL
4. Shri J. Mazumdar, PGCIL
5. Shri K. Goswami, APDCL, Assam

ORDER

This petition has been filed by PGCIL seeking approval of transmission tariff for ATS of Kopili-Khandong (Additional transmission Gohpur-Itanagar) in North Eastern Region (hereinafter referred to as "transmission assets") under Regulation 86 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "2009 Tariff Regulations") for the tariff block 2009-14.

2. Transmission tariff for the assets covered in the petition for the period 2004-09 was determined by this Commission, vide order dated 21.8.2009 in Petition No. 90/2006. The current petition has been filed under 2009 Tariff Regulations applicable for 2009-14 period based on the admitted capital cost as on 31.3.2009 and additional capital expenditure and decapitalization as per details given below:-

(` in lakh)

Asset	Admitted capital cost as on 31.3.2009	Projected additional capital expenditure				Total estimated completion cost
		Add-cap 2010-11	De-cap 2010-11	Add-cap 2013-14	De-cap 2013-14	
ATS of Kopili-Khandong {Additional Transmission Gohpur-Itnagar (ATGI)}	5537.51	244.70	49.50	132.50	31.14	5834.07

3. Details of the transmission charges claimed by the petitioner are given overleaf:-

(` in lakh)

	2009-10	2010- 11	2011-12	2012-13	2013-14
Depreciation	100.77	109.24	118.42	118.42	124.38
Interest on Loan	0.00	7.03	13.31	11.78	14.00
Return on equity	483.86	488.98	494.10	494.10	496.76
Interest on Working Capital	57.80	60.84	64.02	66.93	70.23
O & M Expenses	911.93	963.95	1019.16	1077.88	1139.42
Total	**1554.36**	**1630.04**	**1709.01**	**1769.11**	**1844.79**

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	136.79	144.59	152.87	161.68	170.91
O & M expenses	75.99	80.33	84.93	89.82	94.95
Receivables	259.06	271.67	284.84	294.85	307.46
Total	**471.84**	**496.59**	**522.64**	**546.35**	**573.32**
Interest	57.80	60.83	64.02	66.93	70.23
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%

5. 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. Respondents have also not filed any reply in the matter.

6. Having heard the representative of the petitioner and perused the material on record, we proceed to dispose of the petition.

CAPITAL COST

7. As per the last proviso to Regulation 7(2) of the 2009 Tariff Regulations, capital cost of `5537.51 lakh as on 31.3.2009 has been considered for the purpose of determining tariff in the petition.

ADDITIONAL CAPITAL EXPENDITURE

8. As per Regulation 9 (2) of 2009 Tariff Regulations**-**

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) XXX
(ii) XXX
(iii) XXX
(iv) XXX
(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.

9. The petitioner has claimed additional capital expenditure and decapitalization during 2009-14 under Regulation 9(2)(v) of the 2009 Tariff Regulations as per details given below:-

Name of the Asset	Year	Nature	Amount (` in lakh)	Details of Expenditure
ATS of Kopili-Khandong {Additional Transmission Gohapur-Itanagar (ATGI)}	2009-10	-	NIL	
	2010-11	S/S	94.70	Commissioning of 10 MVA ICT at Nirjuli S/S
		S/S	**49.50**	**Decapitalisation of old 10 MVA ICT at Nirjuli**
		S/S	150.00	Protection works due to landslide at Haflong S/S
	2011-12	-	NIL	
	2012-13	-	NIL	
	2013-14	S/S	132.50	Installation of Isolators
		S/S	**31.14**	**Decapitalisation of old Isolators.**

ADDITIONAL CAPITALISATION DURING 2010-11

10. As regards the additional capital expenditure of `94.70 lakh for commissioning of 10 MVA ICT and de-cap of `49.50 lakh for old 10 MVA ICT at Nirjuli Sub-station, the petitioner has submitted that the 10 MVA ICT-I at Nirjuli failed on 27.5.2008 while feeding fault in 33 kV feeder. The transformer was in commercial operation since 20.10.1991 and has completed about 17 years of service life. There was continuous stress on the transformer for about a year due to frequent faults in the 33 kV feeders. Bharat Bijlee, the Original Equipment Manufacturer (OEM), expressed their inability to repair the transformer due to non-availability of adequate facility at their works and it was decided to procure a new 10 MVA, 132/33 kV Transformer, as the transformer feeds power to the capital of Arunachal Pradesh. The petitioner, in its affidavit dated 19.8.2011, has submitted that the failure was mainly due to a number of faults in 33 kV SEB feeder, which was beyond its control. During the hearing on 29.9.2011, the petitioner has submitted that there were 246 number of transformer trippings during April, 2007and May, 2008 due to fault in 33 kV feeders.

11. The petitioner has further submitted, during hearing, that such failure of equipments is not covered in the insurance policy. The petitioner has submitted, vide affidavit dated 19.12.2011 that the transformer ceased to operate due to machinery failure while feeding fault current due to fault in SEB feeder and the same was not covered in Self Insurance Scheme of PGCIL. Hence, it was proposed to procure the same through additional capital expenditure.

12. In response to the Commission's query regarding the details of steps taken for protecting its equipment from external faults in the 33 kV feeders, the

petitioner has submitted that the transformer was provided with required protection in line with OEM recommendations. Regarding the reason for failure of transformer in spite of protection system in place, it was submitted that the ICTs are also provided with primary and back-up protection. Primary protection normally takes care of faults within the transformer unit, while the back-up protection takes care of fault beyond the transformer unit as well, but with a time gradation allowing the protective gear in the faulty outgoing feeder to isolate the fault first.

13. The petitioner has further submitted that at every incident of inception of fault in any of the outgoing feeders, the transformer is subjected to stress due to higher current through the faulty phase. The effect of such higher current becomes more adverse when such instances of inception of faults are quite frequent and time taken by protective gears to clear the fault is higher. However, in the present case, the failure of the transformer is due to frequent inception of fault in 33 kV SEB feeders as the protective elements in the respective outgoing feeders have always isolated the fault as per the set characteristic which also indicates healthiness of protective elements. The petitioner has also submitted that it could have adopted a setting of protective gears so as to isolate the transformer unit immediately on inception of any fault in any of the outgoing SEB feeders, but adoption of such setting would deprive a large number of consumers who are getting power through this ICT, as the power through this ICT is fed to different area by a number of lines.

14. The respondent No. 1, Assam Power Distribution Company Limited (APDCL), in its affidavit dated 15.2.2011, submitted that the issue of failure of the transformer came up for discussion in the 6th NERPC meeting held on 8.8.2008 and it transpired that the transformer failed due to frequent tripping on

account of fault of lines emanating from the transformer leading to Arunachal Pradesh. It was decided that all the technical and commercial matters regarding failure of this ICT would be settled bilaterally between the petitioner and Arunachal Pradesh. APDCL, therefore, requested that the additional capital expenditure on account of replacement of the transformer should not be allowed.

15. In response to APDCL's objection, the petitioner vide affidavit dated 6.7.2012, has submitted that 132/33 kV, 10 MVA ICT-I at Nirjuli transformer is a regional transmission element since its commissioning in 1989. It is regional transmission element in NER grid and as such separate treatment of this ICT is against the regulation. It has been further submitted that in the 6th NERPC meeting on 8.8.2008, immediate restoration of the failed transformer through a temporary arrangement was discussed along with other issues related to this temporary arrangement. In view of the urgency of providing a transformer at Nirjuli, the petitioner has taken transformer on loan basis from Arunachal Pradesh, which is a bilateral issue between the petitioner and Arunachal Pradesh. This is a short term arrangement for immediate restoration of the failed transformer and has no relevance with the permanent restoration of the failed transformer through procurement of a new transformer by the petitioner. A new transformer has been procured and installed in place of the failed transformer. The replaced transformer continues to provide the same level of service in the grid as it was before failure. The transformer is a regional transmission element and hence the transmission tariff for this transformer may be shared by all the beneficiaries.

16. We did not allow the add-cap claimed on account of damage to ICTs in Rihand transmission system, vide order dated 3/2/2009 in Petition No.80/2008, as the capitalisation of net cost was to be financed out of insurance fund reserve created under internal insurance policy of the petitioner, towards which contribution is being regularly made by the beneficiaries as part of the O&M expenses. The relevant portion of the order is given overleaf:-

> *"10. We have gone through the details of self-insurance policy being pursued by the petitioner. We do not find any distinction between the internal and external cause of damage in the policy papers submitted by the petitioner. Even the inclusion or exclusions on this account also have not been indicated. The cause of fire resulting in burning of the ICT, whether internal or external necessitating its replacement does not alter the basic fact that the ICT was burnt. The insurance policy covers damages to the equipment because of fire, without exception. So, the cause of fire, whether internal or external, is really not material, for meeting the expenditure.*
>
> *11**.** We are not convinced by the petitioner's argument for capitalization of net cost which is to be financed out of insurance fund reserve created under internal insurance policy, towards which contribution is being regularly made by the beneficiaries as part of the O & M expenses. Accordingly, neither the decapitalisation nor the additional capitalisation on account of the ICTs replaced can be considered."*

17. Though in the present case, capitalisation and de-capitalisation is involved, it is different from Petition No. 80/2008, as the failure of ICT in the instant case is not due to fire. As per the documents submitted by the petitioner, damage due to fire is covered under the self insurance scheme, but the instant case is not covered under the self insurance scheme of the petitioner, as the failure is not due to fire. The relevant extract of the document submitted by the petitioner is as under:-

> *"Insurance reserve is created @ 0.1% on gorss value of fixed assets as at the close of the year in respect of failure losses which may arise from uninsured risk except for machinery breakdown for valve hall of HVDC and fire risk for HVDC equipments and SVC substations". Accordingly, the policy generally covers the losses due to following events:*
>
> *a)* *<u>Fire</u>*
> - ----- *Lightning*
> - ----- Explosion/Implosion
> - ----- *Bush Fire*
>
> b) *<u>Natural Calamity</u>*
> - ----- *Floods, Earthquake, Storm, Cyclone, Typhoon, Tempest, Hurricane, Tornado, Subsidence and Land Slide.*
>
> c) Riot, Strike/Malicious and Terrorist damage

d) Theft, Burglary, Missile testing equipments, impact damage due to rail/road or anima, Aircraft and article dropped there from."

18. In the "Statement of Objects and Reasons" for 2009 Tariff Regulations, the issue of equipment damage raised by the petitioner was discussed and it has been mentioned that the self insurance policy of the petitioner is to be interpreted on a case to case basis. The relevant extract of the SOR is given overleaf:-

> "*(d) POWERGRID has stated that failure of most of the equipment like ICT, Reactor etc. do not qualify under Self Insurance Policy. POWERGRID has requested that insurance premium for insurance of such equipment should be allowed in O&M expenses or alternatively additional capitalisation may be allowed in such eventualities."*
>
> "23.8 We have already covered issue regarding failure of converter transformer raised by POWERGRID. With regard to issue of change in self-insurance policy raised by POWERGRID, we would like to state that the coverage of the self-insurance policy has been decided by the POWERGRID itself and we would not like to micro-manage the same. We are only interpreting this policy whenever an issue of capitalization or repair and maintenance of any asset is brought before us."

19. The other difference in the instant case is that in 2004 Tariff Regulations there was no provision for allowing such add-cap, whereas as per the additional capital expenditure for damage of equipments is allowed after cut-off date under Regulation 9 (2) (v) of 2009 Tariff Regulations. The relevant extract is as under:-

> *"(2) The capital expenditure incurred on the following counts after cut-off date may, in its discretion by the Commission, subject to prudence check:*
>
> \- - - - - - - - - - -
>
> *(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 in fault level, emergency restoration system, insulator 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."*

20. In view of above, the decapitalisation and additional capitalization claimed by the petitioner for the replacement of damaged ICT is being allowed.

21. The petitioner submitted that, due to land slide the boundary wall, equipment and structure foundations at Haflong sub-station were damaged. It was submitted that damage was due to natural calamity and beyond control of the petitioner. Unless protective measures are undertaken immediately, the entire switch yard would be in danger. In its affidavit dated19.4.2011 it has been stated that the revised estimate for additional capital expenditure is `370 lakh, based on detailed study and soil investigation, against the original claim of `150 lakh. The petitioner requested to allow add-cap of `150 lakh, with a provision for approaching the Commission for claim of the actual expenditure.

22. The additional capital expenditure towards wall protection work is being allowed as it is essential for safety of the equipments and the sub-station, with a liberty to the petitioner to claim the expenditure as per actuals at the time of truing up.

ADDITIONAL CAPITALISATION DURING 2013-14

23. As regards Isolators, the petitioner has claimed additional capital expenditure of ` 132.50 lakh for installation of Isolators and decapitalization of ` 31.14 lakh for old Isolators. The petitioner has submitted that these isolators manufactured in early 1980s would complete 25 years of useful life in the current tariff block of 2009-14. Since OEM no longer exists and maintenance/ spares/ service supports are not available, the overhauling /repair cannot be carried out and hence replacement is proposed. In its affidavit dated 19.8.2011, the petitioner submitted that due to aging, the isolators have developed operational problems including damage of main contacts, and due to high leakage through

the support insulator stacks, during bad weather conditions (which is common in NER) it becomes hazardous for the operating personnel to operate these isolators, as these are manually operated isolators.

24. The isolators have completed their useful life and spares as well as service support is not available from OEM resulting in difficulty in maintenance. Therefore, keeping in view the reliable operational requirements and threat to safety of personnel, the replacement of isolators is essential for safe and reliable system operation. The petitioner's claim for additional capital expenditure towards replacement of insulators is found to be reasonable and justified. Accordingly, additional capital expenditure towards replacement of isolators is allowed under Regulation 9 (2) (v) of 2009 Tariff Regulations.

DEBT- EQUITY RATIO

25. Regulation 12 of the 2009 Tariff Regulations provides that,

"(1) XXX

(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."

26. The details of debt-equity of asset considered for the purpose of tariff calculation as on the date of commercial operation is given below:-

(` in lakh)

Admitted Capital cost as on 31.3.2009		
Particulars	Amount	%
Debt	2769.58	50.01
Equity	2767.93	49.99
Total	**5537.51**	**100.00**

27. Details of debt- equity ratio corresponding to additional capital expenditure after adjusting de-cap are given below:-

(` in lakh)

2010-11	Normative	
Particulars	Amount	%
Debt	136.64	70.00
Equity	58.56	30.00
Total	**195.20**	**100.00**
2013-14	**Normative**	
Debt	70.95	70.00
Equity	30.41	30.00
Total	**101.36**	**100.00**

Additional capital expenditure has been considered in the current petition in a Debt- equity ratio of 70:30.

28. Debt-equity as on 31.3.2014 is given below:-

(` in lakh)

Cost as on 31.3.2014		
Particulars	Amount	%
Debt	2977.18	51.03
Equity	2856.90	48.97
Total	**5834.08**	**100.00**

RETURN ON EQUITY

29. Regulation 15 of the 2009 Tariff 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 financial year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations".

30. The petitioner has prayed to allow grossing up of base rate of return with the applicable base rate as per the Finance Act for the relevant year and direct settlement of tax liability between generating company/transmission licensee

	2009-10	2010-11	2011-12	2012-13	2013-14

and the beneficiaries/long term transmission customers on year to year basis.

31. The petitioner's prayer to allow grossing up the base rate of return on equity based on tax rates viz., MAT, surcharge, any other cess, charges, levies etc., as per relevant Finance Act, shall be settled in accordance with the provisions of Regulation 15 of 2009 Tariff Regulations.

32. The following amount of equity has been considered for calculation of return of equity:-

(` in lakh)

Opening Equity	2767.93	2767.93	2826.49	2826.49	2826.49
Addition due to additional capital expenditure	0.00	58.56	0.00	0.00	30.41
Closing Equity	2767.93	2826.49	2826.49	2826.49	2856.90
Average Equity	2767.93	2797.21	2826.49	2826.49	2841.69
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%	15.50%
Tax rate for the year 2008-09 (MAT)	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)	483.86	488.98	494.10	494.10	496.76

INTEREST ON LOAN

33. Regulation 16 of the 2009 Tariff 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 these calculations, interest on loan has been worked out as under:-

(i) Gross amount of loan, repayment of instalments, rate of interest and weighted average rate of interest on actual average loan have been considered as per the petition.

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

(iii) Weighted average rate of interest on actual loan worked out as above has been applied on the notional average loan during the year to arrive at the interest on loan.

(iv) Petitioner has considered separate loan portfolio for decapitalization and additional capitalization in order to work out the weighted average rate of interest. A combined loan portfolio has been considered in this petition for calculating the weighted average rate of interest.

35. Detailed calculations of the weighted revised average rate of interest are given in Annexure to this order.

36. Details of the interest on loan worked on the above basis are as follows:-

(` in lakh)

	2010-11	2010-11	2011-12	2012-13	2013-14
Gross Normative Loan	2769.58	2769.58	2906.22	2906.22	2906.22
Cumulative Repayment upto previous year	2769.58	2769.58	2879.56	2906.22	2906.22
Net Loan-Opening	0.00	0.00	26.66	0.00	0.00
Addition due to Additional Capital Expenditure	0.00	136.64	0.00	0.00	70.95
Repayment during the year	0.00	109.98	26.66	0.00	70.95
Net Loan-Closing	0.00	26.66	0.00	0.00	0.00
Average Loan	0.00	13.33	13.33	0.00	0.00
Weighted Average Rate of Interest on Loan	10.0000%	8.6468%	8.6425%	8.6417%	8.6407%
Interest	0.00	1.15	1.15	0.00	0.00

DEPRECIATION

37. Regulation 17 (4) of the 2009 Tariff Regulations provides as under:-

> *"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 asset".*

38. The petitioner has submitted that the ICT at Nirjuli and old isolators have been decapitalised from the assets of ATS of Kopili-Khandong {(Additional Transmission Gohpur-Itanagar (ATG)} in NER because of operational problems. The ICT and Isolators are parts of sub-station which in turn is part of the combined assets of transmission lines and sub-stations. It has been submitted, in the petition, that the capital cost of the de-capitalised ICT is `49.495 lakh and that of the old Isolators is `31.14 lakh. The whole depreciable values (90% of the original gross block) against these part assets have been recovered in 2007-08 and cumulative depreciation amount corresponding to the de-capitalised assets works out to `44.55 lakh for ICT at Nirjuli and `28.03 lakh for old Isolators. Only a part-asset of the sub-station is being taken out of service and the sub-station

itself has not been taken out. The petitioner has submitted that the full depreciable value corresponding to the part assets 'ICT' and 'Isolators' has been recovered whereas the sub-station, of which these part-assets are a part, has not depreciated fully. Thus, there is a mismatch in the depreciation recovery. As UCPTT was applicable in the NE Region prior to 1.4.2004, head- wise expenditure and depreciation details are not available. The details of gross block and accumulated depreciation for the combined asset of Transmission Lines and Sub-station/Bay, as on 31.3.2004, submitted by the petitioner, has been considered for working out the tariff for 2004-09 period. Further, by replacing the assets (de-cap & add-cap), there is no change in the life of the asset.

39. The 2009 Tariff Regulations do not provide for separate depreciation rates for sub-station and their individual components and as such only a single depreciation rate is applied to the sub-station as a whole. The individual component is being depreciated in proportion to the depreciation recovered so far by the whole asset.

40. Proportionate depreciation corresponding to the ICT and Isolators has been worked out by multiplying the capital cost of ICT and Isolators by the ratio of accumulated depreciation up to 31.3.2009 and gross block for the combined asset up to 31.3.2009. The proportionate accumulated depreciation for ICT works out to `31.8430 lakh and that for Isolators ` 20.0342 lakh. As the part assets have been taken out of service, these amounts of depreciation have been reduced from the accumulated depreciation during the years 2009-10 and 2012-13 respectively, the overall depreciable value of the combined asset being 90%. The decapitalization and additional capitalization during the tariff period shall

change the value of gross block, and hence, in order to have a common reference point for depreciation, the ratio has been calculated considering the gross block as on the beginning of the tariff block. Although this would address the issue of recovery of depreciation of the transmission asset, the actual recovery may vary.

41. As per the Commission's order dated 21.8.2009 in Petition No. 90/2006, balance useful life of the asset was fifteen years as on 1.4.2008 and depreciation was spread over the balance useful life. The same concept has been adopted in the present tariff period also.

42. Details of the depreciation worked out are given below:-

(` in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Opening Gross Block	5537.51	5537.51	5732.71	5732.71	5732.71
Addition during 2009-14 due to Projected Additional capital expenditure	0.00	195.20	0.00	0.00	101.36
Closing Gross Block	5537.51	5732.71	5732.71	5732.71	5834.07
Average Gross Block	5537.51	5635.11	5732.71	5732.71	5783.39
Rate of Depreciation	5.0722%	5.0758%	5.0793%	5.0793%	5.0810%
Depreciable Value	4973.41	5061.25	5149.09	5149.09	5194.70
Balance useful life of the asset	14	13	12	11	10
Remaining Depreciable Value	1410.81	1429.72	1407.58	1290.28	1238.63
Depreciation	100.77	109.98	117.30	117.30	123.86

<u>OPERATION & MAINTENANCE EXPENSES</u>

43. Clause (g) of Regulation 19 of the 2009 Tariff Regulations prescribes the norms for O&M expenses based on the type of sub-station and line. The norms for the assets covered in this petition are as follows:-

Element	2009-10	2010-11	2011-12	2012-13	2013-14
132 kV S/C single conductor, T/L(` lakh/ kms.)	0.179	0.189	0.200	0.212	0.224
220 kV D/C single conductor, T/L(` lakh/ kms.)	0.269	0.284	0.301	0.318	0.336
220 kV bay (` lakh/ bay)	36.68	38.78	41.00	43.34	45.82
132 kV bay (` lakh/ bay)	26.20	27.70	29.28	30.96	32.73
33 kV bay (` lakh/ bay)	26.20	27.70	29.28	30.96	32.73

44. In accordance with above mentioned norms, the O & M expenses for the assets covered in this petition are allowed as given hereunder:-

Element	2009-10	2010-11	2011-12	2012-13	2013-14
107.23 (72.791+34.439) kms, 220 kV, D/C, single conductor T/Line	28.84	30.45	32.28	34.10	36.03
571.626 (10.914+42.48+100.63+172.315+6.719+132.902+42.5) kms, 132 kv, S/C, single conductor T/L	102.32	108.04	114.33	121.18	128.04
2 nos. 220 kV bay	73.36	77.56	82.00	86.68	91.64
27 nos., 132& 33 kV bays	707.40	747.90	790.56	835.92	883.71
Total O&M Expenses	911.93	963.95	1019.16	1077.88	1139.42

(` in lakh)

45. The petitioner has submitted that the O&M expenses 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 expenses for tariff period 2009-14. The petitioner has submitted that it would approach the Commission for suitable revision in the norms for O&M expenses in case the impact of wage hike w.e.f 1.1.2007 is more than 50%.

46. It is clarified that, if any application for revision of norms of O&M expenditure is filed by the petitioner in future, it will be dealt in accordance with law. In the instant petition, O&M expenses are allowed as per the prevailing regulations.

INTEREST ON WORKING CAPITAL

47. As per the 2009 Tariff Regulations the components of the working capital and the interest thereon are given as under:-

(i) Receivables: As per Regulation 18(1) (c) (i) of the 2009 Tariff Regulations, receivables will be equivalent to two months of fixed cost. In the tariff being allowed, receivables have been worked out on the basis of 2 months of annual transmission charges.

(ii) Maintenance spares: Regulation 18(1) (c) (ii) of the 2009 Tariff 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 Tariff Regulations provides for operation and maintenance expenses for one month of the recommended O & M expenses. O&M expenses have accordingly been worked out.

(v) **Rate of interest on working capital:** In the calculations, as per Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (Second Amendment) Regulations, 2011 dated 21.6.2011, SBI PLR as on 1.4.2009 i.e. 12.25% has been considered as the rate of interest on working capital.

48. Necessary computations in support of interest on working capital are as under:-

(` in lakh)

	2009-10	2010- 11	2011- 12	2012-13	2013-14
Maintenance Spares	136.79	144.59	152.87	161.68	170.91
O & M expenses	75.99	80.33	84.93	89.82	94.95
Receivables	259.06	270.80	282.58	292.66	304.99
Total	**471.84**	**495.72**	**520.38**	**544.16**	**570.86**
Rate of Interest	57.80	60.73	63.75	66.66	69.93
Interest	**12.25%**	**12.25%**	**12.25%**	**12.25%**	**12.25%**

TRANSMISSION CHARGES

49. The transmission charges being allowed for the transmission lines are summarized as under:-

(` in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	100.77	109.98	117.30	117.30	123.86
Interest on Loan	0.00	1.15	1.15	0.00	0.00
Return on equity	483.86	488.98	494.10	494.10	496.76
Interest on Working Capital	57.80	60.73	63.75	66.66	69.93
O & M Expenses	911.93	963.95	1019.16	1077.88	1139.42
Total	**1554.36**	**1624.79**	**1695.46**	**1755.94**	**1829.97**

FILING FEE AND THE PUBLICATION EXPENSES:-

50. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses. In accordance with the Commission's 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. 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.

LICENCE FEE

51. The petitioner has submitted that in the O&M norms for tariff block 2009-14, the cost associated with license fees had not been captured and hence they be allowed to bill and recover the licence fee separately from the respondents.

52. The petitioner's prayer for licence fee shall be dealt with in accordance with our order dated 25.10.2011 in Petition Nos. 21/2011 and 22/2011.

SERVICE TAX

53. The petitioner has prayed that it be allowed to bill and recover the service tax on transmission charges separately from the respondents, if it is subjected to such service tax in future. We consider the prayer of the petitioner pre-mature and accordingly it is rejected.

SHARING OF TRANSMISSION CHARGES

54. The billing, collection & 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 as amended from time to time.

55. This order disposes of Petition No.334/2010.

Sd/-	Sd/-	Sd/-	Sd/-
(M. Deena Dayalan)	**(V.S. Verma)**	**(S. Jayaraman)**	**(Dr. Pramod Deo)**
Member	**Member**	**Member**	**Chairperson**

ANNEXURE

CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN						
						(` in lakh)
	Details of Loan	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
1	**Bond XXXIII**					
	Gross loan opening	0.00	**0.00**	**171.29**	**171.29**	**171.29**
	Cumulative Repayment upto DOCO/previous year	0.00	**0.00**	**0.00**	**0.00**	**0.00**
	Net Loan-Opening	0.00	0.00	171.29	171.29	171.29
	Additions during the year	0.00	171.29	0.00	0.00	92.75
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	0.00	171.29	171.29	171.29	264.04
	Average Loan	0.00	85.65	171.29	171.29	217.67
	Rate of Interest	8.64%	8.64%	8.64%	8.64%	8.64%
	Interest	0.00	7.40	14.80	14.80	18.81
	Rep Schedule	12 Annual Instalments from 8.7.2014				
2	**NHPC Bond**					
	Gross loan opening	2.05	**2.05**	**2.05**	**2.05**	**2.05**
	Cumulative Repayment upto DOCO/previous year	2.05	**2.05**	**2.05**	**2.05**	**2.05**

	Net Loan-Opening	0.00	0.00	0.00	0.00	0.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	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
	Rate of Interest	0.00%	0.00%	0.00%	0.00%	0.00%
	Interest	0.00	0.00	0.00	0.00	0.00
	Rep Schedule					
3	**LIC III**					
	Gross loan opening	10.18	**10.18**	**10.18**	**10.18**	**10.18**
	Cumulative Repayment upto DOCO/previous year	9.59	**9.70**	**9.81**	**9.91**	**10.02**
	Net Loan-Opening	0.59	0.48	0.37	0.27	0.16
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.11	0.11	0.11	0.11	0.11
	Net Loan-Closing	0.48	0.37	0.27	0.16	0.05
	Average Loan	0.53	0.43	0.32	0.21	0.11
	Rate of Interest	10.00%	10.00%	10.00%	10.00%	10.00%
	Interest	0.05	0.04	0.03	0.02	0.01
	Rep Schedule	12 Annual Instalments from 31.3.2008				
	Total Loan					
	Gross loan opening	12.23	12.23	183.52	183.52	183.52
	Cumulative Repayment upto DOCO/previous year	11.64	11.75	11.86	11.96	12.07
	Net Loan-Opening	0.59	0.48	171.66	171.56	171.45
	Additions during the year	0.00	171.29	0.00	0.00	92.75
	Repayment during the year	0.11	0.11	0.11	0.11	0.11
	Net Loan-Closing	0.48	171.66	171.56	171.45	264.09
	Average Loan	0.53	86.07	171.61	171.50	217.77
	Weighted Average Rate of Interest	**10.0000%**	**8.6468%**	**8.6425%**	**8.6417%**	**8.6407%**
	Interest	0.05	7.44	14.83	14.82	18.82