

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Coram:**

- 1. Shri Bhanu Bhushan, Member**
- 2. Shri R.Krishnamoorthy, Member**

**Petition No. 89/2006**

**In the matter of**

Determination of transmission tariff for associated transmission system of  
Doyang HEP in North Eastern Region for the period from 1.4.2004 to 31.3.2009.

**And in the matter of**

Power Grid Corporation of India Ltd., Gurgaon

**.... Petitioner**

Vs

1. Assam State Electricity Board, Guwahati
2. Meghalaya State Electricity Board, Shillong
3. Power and Electricity Department, Govt. of Mizoram, Aizawl
4. Electricity Department Govt. of Manipur, Imphal
5. Department of Power, Government of Arunachal Pradesh, Itanagar
6. Department of Power, Govt. of Nagaland, Kohima
7. Department of Power, Govt. of Tripura, Agartala

**.Respondents**

**The following were present:**

1. Shri P.C.Pankaj, PGCIL
2. Shri U.K. Tyagi, PGCIL
3. Shri T.C.Sharma, PGCIL
4. Shri M.M.Mondal, PGCIL
5. Shri C.Kannan, PGCIL
6. Shri S.S.Raju, PGCIL
7. Shri Umesh Chandra, PGCIL
8. Shri Harmeet Singh, PGCIL
9. Shri B.P.Singh, PGCIL
10. Shri W.Rehman, PGCIL
11. Shri A.K.Das, PGCIL
12. Shri Utpal Sharma, PGCIL
13. Shri Mithilesh Kumar, PGCIL
14. Shri Anup Gan Choudhery, TSECL
15. Shri M.Debberma, TSECL
16. Shri L.Priyokumar, Electricity Deptt., Govt. of Manipur
17. Ms. Seema Sharma, Advocate, consumer
18. Shri Hemanta Sharma, consumer
19. Shri Rakesh, BSEB
20. Shri K.N. War, MeSEB
21. Shri S.S.Kharmih, MeSEB
22. Shri P.K.Hazarika, ASEB
23. Shri K.Goswami, ASEB
24. Shri H.C.Phukan, ASEB

**ORDER**  
**(DATE OF HEARING: 2.8.2007)**

The petition has been filed for approval of tariff for the transmission system associated with Doyang HEP (the transmission system) in North Eastern Region for the period from 1.4.2004 to 31.3.2009, based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004, (hereinafter referred to as "the 2004 regulations"). The petitioner has also prayed for the reimbursement of expenditure from the beneficiaries incurred towards publishing notices in the newspapers and the petition filing fee.

2. The investment approval for the transmission system was accorded by Ministry of Home Affairs under its letter dated 29.3.1985 at an estimated cost of Rs.4087 lakh. Subsequently, the revised cost estimates I and II for the transmission system were approved by Ministry of Power vide its letters dated 14.5.1993 and 30.6.2000, respectively at the estimated cost of Rs. 6966 lakh and Rs. 11778 lakh. The scope of work included in the transmission system and the date of commercial operation of the respective transmission line are as stated below:

S. No.	Name of the transmission line	Date of commercial operation	Line length in Ckt-km ( for O & M)
(i)	220 kV D/C Dimapur-Misa transmission line, LILO of 220 kV D/C Kopili-Samaguri and LILO of 132 kV D/C Mairani-Dimapur transmission line	1.7.1995	247.04
(ii)	132 kV D/C Doyang-Dimapur transmission line and 132 k V S/C Dimapur-Imphal transmission line with associated bays	1.4.1997	353.917
	Total		600.957

3. The petitioner has claimed the transmission charges as under:

(Rs in lakh)

	220 kV D/C Dimapur-Misa transmission line, LILO of 220 kV D/C Kopili-Samaguri and LILO of 132 kV D/C Mairani-Dimapur transmission line					132 kV D/C Doyang-Dimapur transmission line and 132 k V S/C Dimapur-Imphal transmission line with associated bays				
	2004-05	2005-06	2006-07	2007-08	2008-09	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	175.28	175.28	109.02	109.02	109.02	124.62	124.62	124.62	124.62	124.62
Interest on Loan	15.56	0.42	0.00	0.00	0.00	473.89	430.15	380.22	330.92	282.27
Return on Equity	420.76	420.76	420.76	420.76	420.76	144.63	144.63	144.63	144.63	144.63
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00	132.07	215.56	215.56	206.38	206.38
Interest on Working Capital	28.89	29.56	29.39	30.44	31.53	35.51	37.17	37.32	37.37	37.64
O & M Expenses	299.88	311.87	324.34	337.32	350.81	479.37	498.53	518.47	539.21	560.78
<b>Total</b>	<b>940.37</b>	<b>937.88</b>	<b>883.51</b>	<b>897.53</b>	<b>912.12</b>	<b>1390.09</b>	<b>1450.66</b>	<b>1420.82</b>	<b>1383.13</b>	<b>1356.33</b>

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

(Rs. in lakh)

	220 kV D/C Dimapur-Misa transmission line, LILO of 220 kV D/C Kopili-Samaguri and LILO of 132 kV D/C Mairani-Dimapur transmission line					132 kV D/C Doyang-Dimapur transmission line and 132 k V S/C Dimapur-Imphal transmission line with associated bays				
	2004-05	2005-06	2006-07	2007-08	2008-09	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	100.11	106.12	112.49	119.24	126.39	74.82	79.31	84.07	89.11	94.46
O & M expenses	24.99	25.99	27.03	28.11	29.23	39.95	41.54	43.21	44.93	46.73
Receivables	156.73	156.31	147.25	149.59	152.02	231.68	241.78	236.80	230.52	226.05
<b>Total</b>	<b>281.83</b>	<b>288.42</b>	<b>286.77</b>	<b>296.94</b>	<b>307.65</b>	<b>346.45</b>	<b>362.63</b>	<b>364.08</b>	<b>364.57</b>	<b>367.25</b>
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	4.27	4.30	4.34	30.44	31.53	35.51	37.17	37.32	37.37	37.64

5. The reply to the petition has been filed by Tripura State Electricity Corporation Limited and Assam State Electricity Board. Ms. Mallika Sharma Bazbaruah, the consumer has filed her response to the public notice published by the petitioner under section 64 of the Electricity Act, 2003.

6. The tariff is being determined from 1.4.2007 for the reasons recorded in the order dated 16.1.2008 in Petition No. 85/2006.

### **CAPITAL COST**

7. As per clause (1) of Regulation 52 of the 2004 regulations, subject to prudence check, the actual expenditure incurred on completion of the project shall

form the basis for determination of final tariff. The final tariff shall be determined based on the admitted capital expenditure actually incurred up to the date of commercial operation of the transmission system and shall include capitalised initial spares subject to a ceiling norm as 1.5% of original project cost. The regulation is applicable in case of the transmission system declared under commercial operation on or after 1.4.2004. As regards the project commissioned prior to 1.4.2004, clause (2) of Regulation 52 of the 2004 regulations provides that in case of the existing projects, the project cost admitted by the Commission prior to that date, shall form the basis for determination of tariff.

8. The capital expenditure as on the date of commercial operation is stated to be Rs. 6010.81 lakh in respect of 220 kV D/C Dimapur-Misa transmission line, LILO of 220 kV D/C Kopili-Samaguri and LILO of 132 kV D/C Mairani-Dimapur transmission line and Rs. 4976.00 lakh in respect of 132 kV D/C Doyang-Dimapur transmission line and 132 kV S/C Dimapur-Imphal transmission line with associated bays. The petitioner has considered additional capital expenditure of Rs. 54.09 lakh for the period from date of commercial operation to 31.3.2004 in respect of 132 kV D/C Doyang-Dimapur transmission line and 132 kV S/C Dimapur-Imphal transmission line. Accordingly, the capital expenditure including additional capital expenditure considered by the petitioner for tariff purpose is given here under:

(Rs. in lakh)

	Expenditure up to date of commercial operation	Expenditure from date of commercial operation to 31.3.2004	Expenditure up to 31.3.2004	Capital cost as on 1.4.2004
220 kV D/C Dimapur-Misa transmission line, LILO of 220 kV D/C Kopili-Samaguri and LILO of 132 kV D/C Mairani-Dimapur transmission line	6010.81	0.00	6010.81	6010.81
132 kV D/C Doyang-Dimapur transmission line and 132 kV S/C Dimapur-Imphal transmission line with associated bays	4976.00	54.09	5030.09	5030.09
	<b>10986.81</b>	<b>54.09</b>	<b>11040.90</b>	<b>11040.90</b>

9. As has been noted above, tariff for the transmission system during 2001-04 was not determined by the Commission under the terms and conditions specified by it and the UCPTT rate was allowed to continue. Therefore, the capital base for computation of tariff is to be traced from the date of commercial operation.

**Additional capitalization**

10. In the present case, the petitioner has claimed an additional capitalization of Rs.54.09 lakh for the period up to 31.3.2004 in respect of 132 kV D/C Doyang-Dimapur transmission line and 132 kV S/C Dimapur-Imphal transmission line with associated bays. The details submitted by the petitioner in support of its claim for additional capital expenditure are given hereunder:

Year	Amount (Rs. in lakh)	Head of expenditure
1.4.1997 to 31.3.1999	79.07	Transmission line = Rs.36.64 lakh (Balance payment)  Sub-station = Rs.31.10 lakh (Balance payment)  Sub-station = Rs.11.33 lakh (Payment for MBOA)
1.4.1999 to 31.3.2004	(-) 24.98	Building and Civil work = Rs. (-) 32.29 lakh (Regrouping of account codes)  Transmission line = Rs. (-) 42.64 lakh (Regrouping of account codes)  Transmission line = Rs. 1.20 lakh (Balance payment)  Transmission line = (-) Rs.2.83 lakh (Adjustment after reconciliation)  Sub-station = Rs. 42.64 lakh (Regrouping of account codes)  Sub-station = Rs. 8.94 lakh (Balance payment)
Total	Rs. 54.09	

11. The additional capital expenditure claimed is within original scope of work and is found to be in order. The combined completion cost of Rs. 11040.89 lakh

(Rs. 6010.81 lakh + Rs. 5030.09 lakh) for the transmission system has already been admitted in UCPTT and is within the estimated approved cost of Rs. 11778 lakh. Accordingly, the additional capital expenditure of Rs. 54.09 lakh has been allowed.

### **Time Over-run**

12. The transmission system was scheduled to be commissioned by June 1994. However, this was declared under commercial operation on 1.4.1997. Thus there is delay of about 33 months in the commissioning. The petitioner has explained following reasons for delay as under:

(i) As per original GoI approval dated 29.3.1985, the project was to be completed by NEEPCO by March, 1990. However, at the time of handing over of the transmission system by NEEPCO to the petitioner in April 1992 there was minimal progress of works and a few of the foundations and tower erection works were completed by NEEPCO at that time because of contractual dispute between NEEPCO and suppliers. Revised cost estimate-I, based on 2<sup>nd</sup> quarter 1989 price level of the project was sanctioned and conveyed by NEEPCO to the petitioner only in May 1993. As per RCE-I the project was to be completed June 1994.

(ii) The petitioner carried out detailed engineering activities after taking the transmission system from NEEPCO. Keeping in view the needs of completing the transmission portion of the project and also to avoid litigation problems, the petitioner had taken up various issues like price variation, retention money, benching rates with contractor for settlement etc. After settlement of these issues, execution of transmission system started from November/December, 1992.

(iii) Considering the scope of transmission project and also particular terrain conditions and very adverse law and order situation, it was not possible to complete the project by June 1994. The progress of transmission line was seriously affected on account of remoteness and repeated theft of strung conductors, line materials and tower parts.

(iv) Dimapur-Imphal line was almost ready in the end of May, 1995, but theft of conductor and tower parts and other line material occurred in the first week of June 1995. Due to this, completion of line was hampered and the transmission line could be completed in October 1996. Nevertheless, a part of transmission system along with sub-station were completed in June 1995 with in a period 2.5 years. All the transmission lines and sub-stations were completed far ahead of the generation projects, and were used by NEEPCO for its construction power.

13. In view of above, it has been submitted that delay in completion of the project was beyond the control of the petitioner.

14. We have considered the matter in right earnest. There is satisfactory explanation from the petitioner for the entire delay in completion of the transmission line. It needs to be pointed out that the petitioner does not gain anything by delaying the commissioning of its transmission assets. Therefore, the delay in commissioning of line is considered to be beyond the control of the petitioner.

#### **COST OVER-RUN**

15. The petitioner has submitted that RCE-I was approved in May 1993 at estimated cost of Rs.6966 lakh, and RCE-II was approved on 30.6.2000 at an

estimated cost of Rs.11778 lakh The broad reasons for increase in cost estimate are given below:

- (i) Price escalation: The increase in cost due to change in price is Rs.1863 lakh.
- (ii) Increase/decrease in approved items: (-) Rs.565 lakh.
- (iii) Others (Centages) : There has been increase in Rs.1933 lakh due to centages. Cost increase on this account is due to actual incurrence of expenditure towards establishment, contingency and such other centages. The expenditure incurred during the period after its take over by the petitioner is well within approved norms and have also been audited and found to be acceptable.
- (iv) Increase in interest during construction (IDC): Increase in IDC amounting to Rs. 158 lakh has primarily resulted from increase in phasing of expenditure during implementation, increase project cost. Further the project has a component of LIC loan which was borrowed by NEEPCO long time back and was transferred to petitioner along with assets and liabilities since the beginning. All these reasons have attributed to high IDC for the project.

16. We have taken note of the above facts. The completion cost of the transmission system is within the cost approved by the Central Government under Ministry of Power letter dated 30.6.2000 and as such there is no cost over-run.

### **TOTAL CAPITAL COST**

17. Based on the above, gross block as given below has been considered for the purpose of tariff for both transmission assets, after allowing additional capitalization on works as claimed by the petitioner:



(Rs. in lakh)

	Expenditure up on date of commercial operation	Additional capital expenditure up to 31.3.2004	Total capital expenditure
220 kV D/C Dimapur-Misa transmission line, LILO of 220 kV D/C Kopili-Samaguri and LILO of 132 kV D/C Mairani-Dimapur transmission line	6010.81	0.00	6010.81
132 kV D/C Doyang-Dimapur transmission line and 132 kV S/C Dimapur-Imphal transmission line with associated bays	4976.00	54.09	5030.09
	<b>10986.81</b>	<b>54.09</b>	<b>11040.90</b>

### **DEBT- EQUITY RATIO**

18. Clause (1) of Regulation 54 of the 2004 regulations *inter alia* provides that,-

“(1) In case of the existing projects, debt–equity ratio Considered by the Commission for fixation of tariff for the period ending 31.3.2004 shall be considered for determination of tariff with effect from 01.04.2004:

Provided that in cases where the tariff for the period ending 31.3.2004 has not been determined by the Commission, debt-equity ratio shall be as may be decided by the Commission:

Provided further that in case of the existing projects where additional capitalisation has been completed on or after 1.4.2004 and admitted by the Commission under Regulation 53, equity in the additional capitalisation to be considered shall be :-

- (a) 30% of the additional capital expenditure admitted by the Commission, or
- (b) equity approved by the competent authority in the financial package, for additional capitalisation, or
- (c) actual equity employed,

whichever is the least:

Provided further that in case of additional expenditure admitted under the second proviso, the Commission may considered equity of more than 30% if the transmission licensee is able to satisfy the Commission that deployment of such equity of more than 30% was in the interest of general public.”

19. The Note 1 below Regulations 53 lays down that any expenditure on account of committed liabilities with the original scope of work is to be serviced in the normative debt-equity ratio specified in Regulation 54.

20. The debt-equity ratio claimed by the petitioner for the transmission lines for the purpose of determination of tariff in the present petition is indicated below:

	Name of the transmission assets	debt-equity ratio
1.	220 kV D/C Dimapur-Misa transmission line, LILO of 220 kV D/C Kopili-Samaguri and LILO of 132 kV D/C Mairani-Dimapur transmission line	50:50
2.	132 kV D/C Doyang-Dimapur transmission line and 132 k V S/C Dimapur-Imphal transmission line with associated bays	80:20

21. The petitioner has considered debt-equity ratio as on the date of commercial operation. The petitioner has further claimed tariff after accounting for the additional capital expenditure of Rs. 54.09 lakh for the period up to 31.3.2004 towards equity in respect of 132 kV D/C Doyang-Dimapur transmission line and 132 kV S/C Dimapur-Imphal transmission line with associated bays. In case of 220 kV D/C Dimapur-Misa transmission line, LILO of 220 kV D/C Kopili-Samaguri and LILO of 132 kV D/C Mairani-Dimapur transmission line the petitioner has segregated gross block as on date of commercial operation and 1.4.2004 into debt-equity ratio of 50:50 for the purpose of tariff calculations. We have considered the debt-equity ratio of 50:50 and 79.46:20.54 on the date of commercial operation of the respective transmission line. The additional capitalisation of Rs. 54.09 lakh for the period up to 31.3.2004 on works has been segregated into debt and equity in such a manner so as to bring the overall debt-equity ratio nearer to approved debt-equity ratio. Accordingly, for the purpose of tariff, amounts of Rs. 3005.41 lakh and Rs. 1033.09 lakh respectively have been considered as equity as on 1.4.2007.

### **RETURN ON EQUITY**

22. As per clause (iii) of Regulation 56 of the 2004 regulations, return on equity shall be computed on the equity base determined in accordance with regulation 54 @ 14% per annum. Equity invested in foreign currency is to be allowed a

return in the same currency and the payment on this account is made in Indian Rupees based on the exchange rate prevailing on the due date of billing.

23. The petitioner has claimed return on equity as on 1.4.2004 after accounting for equity of Rs. 54.09 lakh on account of additional capital expenditure on works. For the reasons recorded in para 21 above the petitioner shall be entitled to return on equity during the tariff period as under.

Name of the assets	Equity	Return in Equity	
		2007-08	2008-09
(i) 220 kV D/C Dimapur-Misa transmission line, LILO of 220 kV D/C Kopili-Samaguri and LILO of 132 kV D/C Mairani-Dimapur transmission line	3005.41	420.76	420.76
(ii) 132 kV D/C Doyang-Dimapur transmission line and 132 k V S/C Dimapur-Imphal transmission line with associated bays	1033.09	144.63	144.63

### **INTEREST ON LOAN**

24. Clause (i) of regulation 56 of the 2004 regulations *inter alia* provides that,-

“(a) Interest on loan capital shall be computed loan wise on the loans arrived at in the manner indicated in regulation 54.

(b) The loan outstanding as on 1.4.2004 shall be worked out as the gross loan in accordance with Regulation 54 minus cumulative repayment as admitted by the Commission or any other authority having power to do so, up to 31.3.2004. The repayment for the period 2004-09 shall be worked out on a normative basis.

(c) The transmission licensee shall make every effort to re-finance the loan as long as it results in net benefit to the beneficiaries. The costs associated with such re-financing shall be borne by the beneficiaries.

(d) The changes to the loan terms and conditions shall be reflected from the date of such re-financing and benefit passed on to the beneficiaries.

(e) In case of dispute, any of the parties may approach the Commission with proper application. However, the beneficiaries shall not withhold any payment ordered by the Commission to the transmission licensee during pendency of any dispute relating to re-financing of loan;

(f) In case any moratorium period is availed of by the transmission licensee, depreciation provided for in the tariff during the years of moratorium shall be treated as repayment during those years and interest on loan capital shall be calculated accordingly.

(g) The transmission licensee shall not make any profit on account of re-financing of loan and interest on loan;

(h) The transmission licensee may, at its discretion, swap loans having floating rate of interest with loans having fixed rate of interest, or vice versa, at its own cost and gains or losses as a result of such swapping shall accrue to the transmission licensee:

Provided that the beneficiaries shall be liable to pay interest for the loans initially contracted, whether on floating or fixed rate of interest.”

25. The petitioner has claimed interest on loan on the basis of following amount of loan:

(Rs. in lakh)

S.No.	Name of the assets	Gross loan
1.	220 kV D/C Dimapur-Misa transmission line, LILO of 220 kV D/C Kopili-Samaguri and LILO of 132 kV D/C Mairani-Dimapur transmission line	3005.41
2.	132 kV D/C Doyang-Dimapur transmission line and 132 k V S/C Dimapur-Imphal transmission line with associated bays	3997.00

- (i) In case of 220 kV D/C Dimapur-Misa transmission line, LILO of 220 kV D/C Kopili-Samaguri and LILO of 132 kV D/C Mairani-Dimapur transmission line, the petitioner has arrived at gross notional loan as 50% of gross block as on the date of commercial operation;
- (ii) In case of 132 kV D/C Doyang-Dimapur transmission line and 132 kV S/C Dimapur-Imphal transmission line with associated bays, the petitioner has considered actual loan as on the date of commercial operation as notional loan;
- (iii) On the basis of actual rate of interest on actual average loan, the weighted average rate of interest on loan is worked out for various years.
- (iv) The weighted average rate of interest on loan for respective years as per above has been multiplied to arrive at interest on loan.

26. In our calculation, the interest on loan has been worked out as detailed below:

- (i) In case of GOI loan, gross amount of loan, repayment of instalments and rate of interest as per Form 13 of the petition is used to work out weighted average rate of interest on actual loan. For LIC, NEEPCO loan, the loan reconciliation statement for 2005-06 has been referred to;
- (ii) Notional loan corresponding to additional capitalization from date of commercial operation to 31.3.2005 has been added to the loan amount as on the date of commercial operation to arrive at total notional loan. This adjusted gross loan has been considered as normative loan for tariff calculation;
- (iii) For the purpose of calculating the interest on loan to be recovered in tariff, cumulative repayment up to 31.3.2004 as per the petition has been considered as repayment. Depreciation during 2004-05, 2005-06 and 2006-07 has been considered as repayment of the respective years. Average outstanding loan has thereafter been computed considering notional loan repayment equal to the depreciation allowed during the year 2007-08 and 2008-09;
- (iv) Weighted average rate of interest on actual loan worked out as per (i) above has been applied on the average loan during the year to arrive at the interest on loan.

27. Based on the above, the year-wise details of interest worked out are given hereunder:

	2007-08	2008-09	2007-08	2008-09
	220 kV D/C Dimapur-Misa transmission line, LILO of 220 kV D/C Kopili-Samaguri and LILO of 132 kV D/C Mairani-Dimapur transmission line		132 kV D/C Doyang-Dimapur transmission line and 132 kV S/C Dimapur-Imphal transmission line with associated bays	
Opening Gross Loan	3005.41	3005.41	3997.00	3997.00
Cumulative Repayment up to 31.3.2007	3005.41	3005.41	1016.81	1141.43
Net Loan-Opening	0.00	0.00	2980.19	2855.57
Repayment during the year	0.00	0.00	124.62	124.62
Net Loan-Closing	0.00	0.00	2855.57	2730.95
Average Loan	0.00	0.00	2917.88	2793.26
Weighted Average Rate of Interest on Loan	17.00%	17.00%	14.70%	14.70%
<b>Interest</b>	<b>0.00</b>	<b>0.00</b>	<b>428.87</b>	<b>410.55</b>

28. The detailed calculations in support of the weighted average rate of interest are contained in Annexure attached.

### **DEPRECIATION**

29. Sub-clause (a) of clause (ii) of Regulation 56 of the 2004 regulations provides for computation of depreciation in the following manner, namely:

- (i) The value base for the purpose of depreciation shall be the historical cost of the asset.
- (ii) Depreciation shall be calculated annually based on straight line method over the useful life of the asset and at the rates prescribed in Appendix II to these regulations. The residual value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the historical capital cost of the asset. Land is not a depreciable asset and its cost shall be excluded from the capital cost while computing 90% of the historical cost of the asset. The historical capital cost of the asset shall include additional capitalisation on account of Foreign Exchange Rate Variation up to 31.3.2004 already allowed by the Central Government/Commission.

- (iii) On repayment of entire loan, the remaining depreciable value shall be spread over the balance useful life of the asset.
- (iv) Depreciation shall be chargeable from the first year of operation. In case of operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

30. The petitioner has claimed the depreciation on the capital cost of Rs. 6010.81 lakh and Rs. 5030.09 lakh, respectively. The petitioner has not indicated any cumulative depreciation recovery for the period up to 31.3.2004.

31. For the period 1.4.2007 to 31.3.2009 the depreciation works out to Rs. 109.02 lakh and Rs. 124.62 lakh respectively each year by applying rate of depreciation of 2.916% and 2.477% respectively.

**ADVANCE AGAINST DEPRECIATION**

32. Advance Against Depreciation is permissible only if loan repayment in a year exceeds the depreciation, and the cumulative repayment up to a particular year exceeds the cumulative depreciation up to that year. Since notional loan repayment has been assumed to be equal to the depreciation recovered in tariff, no Advance Against Depreciation is admissible.

**OPERATION & MAINTENANCE EXPENSES**

33. In accordance with clause (iv) of Regulation 56 the 2004 regulations, the following norms are prescribed for O & M expenses:

	Year				
	2004-05	2005-06	2006-07	2007-08	2008-09
O&M expenses (Rs. in lakh per ckt-km)	0.227	0.236	0.246	0.255	0.266
O&M expenses (Rs in lakh per bay)	28.12	29.25	30.42	31.63	32.90

34. The petitioner in its affidavit dated 17.9.2007 has submitted that the transmission voltage in all the regions except NER is 400 kV and 220 kV and very few lines are of 132 kV voltage level, and keeping this in view, while working out total number of bays and the unit O&M rates for NER, the outgoing line feeders of voltage level up to 132 kV only were considered. It may be mentioned that in NER generally the main transmission lines are of 132 kV level and outgoing feeders are of 33 kV level with 132/33 kV ICTs. Due to omission of 33 kV voltage level outgoing line bays, the total number of bays considered for calculation purpose were less. Further, inadvertently, a few of 132 kV voltage level outgoing feeders were also not considered in the calculations submitted in the petition. Accordingly, the petitioner has revised the statement for the total number of bays under operation in NER. The statement has been prepared considering the following bays which are in line with the methodology considered.

- (i) line bay up to voltage level of 132 kV;
- (ii) Outgoing line bays up to voltage level of 33 kV (distribution bays);
- (iii) Bus reactor line bays up to voltage level of 33 kV; and
- (iv) HV and LV bays with all the ICTs.

35. The petitioner has submitted a detailed statement of bays under operation as on 31.3.2005 in NER. The petitioner has prayed that for computation of O & M expenses, Form-2 filed with petition may be taken in to consideration and O & M expenses may be allowed accordingly.

36. Against the petitioner's claim based on per bay rates of Rs 39,84,930 and Rs. 41,44,330 for the years 2007-08 and 2008-09, per bay rates of Rs. 31,63,000 and Rs. 32,90,000 respectively have been applied for O & M expenses as per the 2004 regulations. Similarly, against the petitioner's claim based on per ckt. kilometre rate of Rs. 39,760 and Rs. 41,350 for the years 2007-08 and 2008-09,



per kilometre rates of Rs. 25,500 and Rs. 26,600 respectively have been applied as laid down under the 2004 regulations.

37. The petitioner's entitlement to O & M expenses for ckt km and bays has been worked out as given hereunder:

(Rs. in lakh)

	220 kV D/C Dimapur-Misa transmission line, LILO of 220 kV D/C Kopili-Samaguri and LILO of 132 kV D/C Mairani-Dimapur transmission line		132 kV D/C Doyang-Dimapur transmission line and 132 k V S/C Dimapur-Imphal transmission line with associated bays	
	2007-08	2007-08	2007-08	2008-09
O&M expenses for 247.04 ckt km line length	63.00	65.71	O&M expenses for 353.917ckt-km line length	94.14
O&M expenses for 6 bay	189.78	197.40	O&M expenses for 12 bays	394.80
<b>TOTAL</b>	<b>252.78</b>	263.11	<b>TOTAL</b>	488.94

38. The petitioner has submitted that the wage revision of its employees is due with effect from 1.1.2007. Therefore, O&M expenses should be subject to revision on account of revision of employee cost from that date. In the alternative, it has been prayed that the increase in employee cost due to wage revision be allowed as per actuals for extra cost to be incurred consequent to wage revision. We are not expressing any view, as this issue does not arise for consideration at this stage. The petitioner may approach for a relief in this regard at an appropriate stage in accordance with law.

### **INTEREST ON WORKING CAPITAL**

39. The components of the working capital and the interest thereon are discussed hereunder:

#### **(i) Maintenance spares**

Regulation 56(v)(1)(b) of the 2004 regulations provides for maintenance spares @ 1% of the historical cost escalated @ 6% per annum from the date of commercial operation. The capital expenditure on

the date of commercial operation i.e. Rs. 6010.81 lakh and Rs. 4976.00 lakh, respectively has been considered as the historical cost for the purpose of the present petition and maintenance spares have been worked out accordingly by escalating 1% of the historical cost @ 6% per annum. In this manner, the value of maintenance spares works out as on 1.4.2007 are given hereunder:

(Rs. in lakh)		
Name of the assets	Date of commercial operation	Value of maintenance spares as on 1.4.2007
(i) 220 kV D/C Dimapur-Misa transmission line, LILO of 220 kV D/C Kopili-Samaguri and LILO of 132 kV D/C Mairani-Dimapur transmission line	1.7.1995	119.24
(ii) 132 kV D/C Doyang-Dimapur transmission line and 132 k V S/C Dimapur-Imphal transmission line with associated bays	1.4.1997	89.11

**(ii) O & M expenses**

Regulation 56(v)(1)(a) of the 2004 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 O&M expenses of the respective year as claimed in the petition. This has been considered in the working capital.

**(iii) Receivables**

As per Regulation 56(v)(1)(c) of the 2004 regulations, receivables will be equivalent to two months average billing calculated on target availability level. The petitioner has claimed the receivables on the basis 2 months' transmission charges claimed in the petition. In the tariff being allowed, receivables have been worked out on the basis 2 months' transmission charges.

(iv) **Rate of interest on working capital**

As per Regulation 56(v)(2) of the 2004 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 1.4.2004 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 @ 10.25% based on SBI PLR as on 1.4.2004. SBI PLR as on 1.4.2004 (10.25%) has been considered in the calculation.

40. The necessary computations in support of interest on working capital are appended hereinbelow:

(Rs. in lakh)

	220 kV D/C Dimapur-Misa transmission line, LILO of 220 kV D/C Kopili-Samaguri and LILO of 132 kV D/C Mairani-Dimapur transmission line		132 kV D/C Doyang-Dimapur transmission line and 132 kV S/C Dimapur-Imphal transmission line with associated bays	
	<b>2007-08</b>	<b>2008-09</b>	<b>2007-08</b>	<b>2008-09</b>
Maintenance Spares	119.24	126.39	89.11	94.46
O & M expenses	21.07	21.93	39.15	40.75
Receivables	135.13	137.02	200.27	200.53
Total	275.43	285.34	328.53	335.73
Rate of Interest	10.25%	10.25%	10.25%	10.25%
Interest	<b>28.23</b>	<b>29.25</b>	<b>33.67</b>	<b>34.41</b>

**TRANSMISSION CHARGES**

41. The transmission charges being allowed for the transmission system are summarised below:

(Rs.in lakh)

	2007-08	2008-09	2007-08	2008-09
220 kV D/C Dimapur-Misa transmission line, LILO of 220 kV D/C Kopili-Samaguri and LILO of 132 kV D/C Mairani-Dimapur transmission line			132 kV D/C Doyang-Dimapur transmission line and 132 kV S/C Dimapur-Imphal transmission line with associated bays	
Depreciation	109.02	109.02	124.62	124.62
Interest on Loan	0.00	0.00	428.87	410.55
Return on Equity	420.76	420.76	144.63	144.63
Advance against Depreciation	0.00	0.00	0.00	0.00
Interest on Working Capital	28.23	29.25	33.67	31.41
O & M Expenses	252.78	263.11	469.81	488.94
<b>Total</b>	<b>810.79</b>	<b>822.13</b>	<b>1201.60</b>	<b>1203.16</b>

42. In addition to the transmission charges, the petitioner shall be entitled to other charges like income-tax, incentive, surcharge and other cess and taxes in accordance with the 2004 regulations. .

43. The petitioner has sought approval for the reimbursement of expenditure of Rs. 1, 55,458/- incurred on publication of notices in the newspapers. The petitioner shall claim reimbursement of the said expenditure directly from the respondent in one installment. The petitioner has also sought reimbursement of filing fee of Rs.5 lakh paid. A final view on reimbursement of filing fee is yet to be taken by the Commission for which views of the stakeholder have been called for. The view taken on consideration of the comments received shall apply in the present case as regards reimbursement of filing fee.

44. The petitioner is already billing the respondents on provisional basis in accordance with the Commission's order dated 27.4.2007. The provisional billing of tariff shall be adjusted in the light of final tariff now approved by us.

45. This order disposes of Petition No. 89/2006.

Sd/-  
**(R.KRISHNAMOORTHY)**  
**MEMBER**  
New Delhi dated the 21<sup>st</sup> February 2008

sd/-  
**(BHANU BHUSHAN)**  
**MEMBER**

## Annexure

220 kV D/C Dimapur-Misa transmission line, LILO of 220 kV D/C Kopili-Samaguri and LILO of 132 kV D/C Mairani-Dimapur transmission line

### CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN

(Rs. in Lakh)

	Details of Loan	2004-05	2005-06	2006-07	2007-08	2008-09
<b>1</b>	<b>Bond-I (Issue-I)</b>					
	Gross Loan opening	19.00	19.00	19.00	19.00	19.00
	Cumulative Repayment up to DOCO/previous year	19.00	19.00	19.00	19.00	19.00
	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	16.75%	16.75%	16.75%	16.75%	16.75%
	Interest	0.00	0.00	0.00	0.00	0.00
<b>2</b>	<b>Bond-I (Issue-II)</b>					
	Gross Loan opening	15.00	15.00	15.00	15.00	15.00
	Cumulative Repayment up to DOCO/previous year	15.00	15.00	15.00	15.00	15.00
	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	17.00%	17.00%	17.00%	17.00%	17.00%
	Interest	0.00	0.00	0.00	0.00	0.00
<b>3</b>	<b>Bond-I (Issue-III)</b>					
	Gross Loan opening	42.30	42.30	42.30	42.30	42.30
	Cumulative Repayment up to DOCO/previous year	42.30	42.30	42.30	42.30	42.30
	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	9.00%	9.00%	9.00%	9.00%	9.00%
	Interest	0.00	0.00	0.00	0.00	0.00
<b>4</b>	<b>Bond-III(Issue-I)</b>					
	Gross Loan opening	5.00	5.00	5.00	5.00	5.00
	Cumulative Repayment upto DOCO/previous year	5.00	5.00	5.00	5.00	5.00
	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	13.50%	13.50%	13.50%	13.50%	13.50%
	Interest	0.00	0.00	0.00	0.00	0.00
<b>5</b>	<b>Bond-III (Issue-II)</b>					
	Gross Loan opening	29.00	29.00	29.00	29.00	29.00
	Cumulative Repayment up to DOCO/previous year	29.00	29.00	29.00	29.00	29.00
	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	9.75%	9.75%	9.75%	9.75%	9.75%
	Interest	0.00	0.00	0.00	0.00	0.00
6	<b>LIC NEEPCO</b>					
	Gross Loan opening	721.00	721.00	721.00	721.00	721.00
	Cumulative Repayment up to DOCO/previous year	667.72	698.80	709.90	721.00	721.00
	Net Loan-Opening	53.28	22.20	11.10	0.00	0.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	31.08	11.10	11.10	0.00	0.00
	Net Loan-Closing	22.20	11.10	0.00	0.00	0.00
	Average Loan	37.74	16.65	5.55	0.00	0.00
	Rate of Interest	14.00%	14.00%	14.00%	14.00%	14.00%
	Interest	5.28	2.33	0.78	0.00	0.00
7	<b>GOI</b>					
	Gross Loan opening	1683.49	1683.49	1683.49	1683.49	1683.49
	Cumulative Repayment up to DOCO/previous year	1062.76	1195.61	1328.46	1461.31	1594.16
	Net Loan-Opening	620.73	487.88	355.03	222.18	89.33
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	132.85	132.85	132.85	132.85	89.33
	Net Loan-Closing	487.88	355.03	222.18	89.33	0.00
	Average Loan	554.31	421.46	288.61	155.76	44.67
	Rate of Interest	17.00%	17.00%	17.00%	17.00%	17.00%
	Interest	94.23	71.65	49.06	26.48	7.59
	<b>Total Loan</b>					
	Gross Loan opening	2514.79	2514.79	2514.79	2514.79	2514.79
	Cumulative Repayment up to DOCO/previous year	1840.78	2004.71	2148.66	2292.61	2425.46
	Net Loan-Opening	674.01	510.08	366.13	222.18	89.33
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	163.93	143.95	143.95	132.85	89.33
	Net Loan-Closing	510.08	366.13	222.18	89.33	0.00
	Average Loan	592.05	438.11	294.16	155.76	44.67
	Rate of Interest	16.81%	16.89%	16.94%	17.00%	17.00%
	<b>Interest</b>	99.52	73.98	49.84	26.48	7.59

132 kV D/C Doyang-Dimapur transmission line and 132 kV S/C Dimapur-Imphal transmission line with associated bays

(Rs. in Lakh)

	Details of Loan	2004-05	2005-06	2006-07	2007-08	2008-09
<b>1</b>	<b>Bond-I (Issue-I)</b>					
	Gross Loan opening	15.00	15.00	15.00	15.00	15.00
	Cumulative Repayment up to DOCO/previous year	15.00	15.00	15.00	15.00	15.00
	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	16.75%	16.75%	16.75%	16.75%	16.75%
	Interest	0.00	0.00	0.00	0.00	0.00
<b>2</b>	<b>Bond-I (Issue-II)</b>					
	Gross Loan opening	13.00	13.00	13.00	13.00	13.00
	Cumulative Repayment up to DOCO/previous year	13.00	13.00	13.00	13.00	13.00
	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	17.00%	17.00%	17.00%	17.00%	17.00%
	Interest	0.00	0.00	0.00	0.00	0.00
<b>3</b>	<b>Bond-I (Issue-III)</b>					
	Gross Loan opening	35.00	35.00	35.00	35.00	35.00
	Cumulative Repayment up to DOCO/previous year	35.00	35.00	35.00	35.00	35.00
	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	9.00%	9.00%	9.00%	9.00%	9.00%
	Interest	0.00	0.00	0.00	0.00	0.00
<b>4</b>	<b>Bond-III(Issue-I)</b>					
	Gross Loan opening	4.00	4.00	4.00	4.00	4.00
	Cumulative Repayment up to DOCO/previous year	4.00	4.00	4.00	4.00	4.00
	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	13.50%	13.50%	13.50%	13.50%	13.50%
	Interest	0.00	0.00	0.00	0.00	0.00
<b>5</b>	<b>Bond-III (Issue-II)</b>					
	Gross Loan opening	24.00	24.00	24.00	24.00	24.00
	Cumulative Repayment up to DOCO/previous year	24.00	24.00	24.00	24.00	24.00
	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	9.75%	9.75%	9.75%	9.75%	9.75%
	Interest	0.00	0.00	0.00	0.00	0.00
6	<b>LIC NEEPCO</b>					
	Gross Loan opening	596.00	596.00	596.00	596.00	596.00
	Cumulative Repayment up to DOCO/previous year	551.95	577.64	586.82	595.99	595.99
	Net Loan-Opening	44.05	18.36	9.18	0.01	0.01
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	25.69	9.17	9.17	0.00	0.00
	Net Loan-Closing	18.36	9.18	0.01	0.01	0.01
	Average Loan	31.20	13.77	4.60	0.01	0.01
	Rate of Interest	14.00%	14.00%	14.00%	14.00%	14.00%
	Interest	4.37	1.93	0.64	0.00	0.00
7	<b>GOI</b>					
	Gross Loan opening	3310.00	3310.00	3310.00	3310.00	3310.00
	Cumulative Repayment up to DOCO/previous year	0.00	231.00	562.00	893.00	1224.00
	Net Loan-Opening	3310.00	3079.00	2748.00	2417.00	2086.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	231.00	331.00	331.00	331.00	331.00
	Net Loan-Closing	3079.00	2748.00	2417.00	2086.00	1755.00
	Average Loan	3194.50	2913.50	2582.50	2251.50	1920.50
	Rate of Interest	14.70%	14.70%	14.70%	14.70%	14.70%
	Interest	469.52	428.22	379.57	330.92	282.27
	<b>Total Loan</b>					
	Gross Loan opening	3997.00	3997.00	3997.00	3997.00	3997.00
	Cumulative Repayment up to DOCO/previous year	642.95	899.64	1239.82	1579.99	1910.99
	Net Loan-Opening	3354.05	3097.36	2757.18	2417.01	2086.01
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	256.69	340.17	340.17	331.00	331.00
	Net Loan-Closing	3097.36	2757.18	2417.01	2086.01	1755.01
	Average Loan	3225.70	2927.27	2587.10	2251.51	1920.51
	Rate of Interest	14.69%	14.69%	14.70%	14.70%	14.70%
	<b>Interest</b>	473.89	430.15	380.22	330.92	282.27