

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

1. **Shri Ashok Basu, Chairman,**
2. **Shri K.N.Sinha, Member**
3. **Shri. Bhanu Bhushan, Member**
4. **A.H Jung, Member**

Petition No.104/2005

In the matter of

Petition for approval of tariff for LILO of 400 kV Bongaigaon-Malda transmission line at Purnea and Sub-station at Purnea (New) in Eastern Region for the period 1.11.2003 to 31.3.2004.

And in the matter of

Power Grid Corporation of India Ltd.

.... Petitioner

Vs

1. Bihar State Electricity Board, Patna
2. West Bengal State Electricity Board, Kolkata
3. Grid Corporation of Orissa Ltd., Bhubaneswar
4. Damodar Valley Corporation, Kolkata
5. Power Dept., Govt. of Sikkim, Gangtok
6. Jharkhand State Electricity Board, Ranchi

.....Respondents

The following were present

1. Shri Rakesh Prasad, PGCIL
2. Shri M.M Mondal, PGCIL
3. Shri U.K. Tyagi, PGCIL
4. Shri C. Kannan, PGCIL
5. Shri P.C. Pankaj, PGCIL
6. Shri R.B Sharma, Advocate, BSEB

**ORDER
(DATE OF HEARING: 31.1. 2006)**

In this petition, the petitioner, Power Grid Corporation of India Ltd has sought approval for tariff in respect of LILO of 400 kV Bongaigaon-Malda transmission line at Purnea and Sub-station at Purnea (New) in Eastern Region (hereinafter referred to as "the transmission line") for the period 1.11.2003 to

31.3.2004. The tariff is to be regulated based on the terms and conditions of tariff contained in the Commission's notification dated 26.3.2001, (hereinafter referred to as "the notification dated 26.3.2001").

2. Ministry of Power, vide its letter dated 19.4.2000, accorded approval for the cost estimate of Rs. 8020 lakh, including IDC of Rs. 1091 lakh, in respect of the transmission lines. During the hearing, the petitioner submitted that the revised cost approval was under progress and sought time for its submission. As per the revised approval submitted by the petitioner under affidavit dated 5.5.2006 the approved cost of the transmission line is Rs. 8550 lakh, including IDC of Rs. 1395 lakh. The actual date of commercial operation of the transmission line is 1.11.2003.

3. Based on the above noted facts, the petitioner has sought approval for transmission charges for the period from 1.11.2003 to 31.3.2004 as under on the total cost of Rs. 8298.86 lakh:

(Rs. in lakh)

Transmission Tariff	2003-2004
Interest on Loan	241.21
Interest on Working Capital	13.73
Depreciation	97.46
Advance against Depreciation	16.51
Return on Equity	79.95
O & M Expenses	101.37
Total	550.23

4. In addition, the petitioner has prayed for approval of other charges like Foreign Exchange Rate Variation, Income Tax, incentive, late payment surcharge, other statutory taxes, levies, cess, filing fee, etc in terms of the notification dated 26.3.2001.

5. The petitioner has claimed interest on working capital as per the details given below:

(Rs in lakh)

	2003-04
Maintenance Spares	73.43
O & M expenses	20.27
Receivables	220.09
Total	313.79
Rate of Interest	10.50%
Interest	32.95
Interest Pro-rata	13.73

CAPITAL COST

6. As per Para 4.3 (b) of the CERC notification dated 26.03.2001, the capital cost shall include capitalised initial spares for the first 5 years of operation. The approved project cost shall be the cost, which has been specified, in the techno-economic clearance of the Authority or as approved by an appropriate independent agency, as the case may be.

7. Further, Para 4.3 (c) of the notification dated 26.3.2001 provides that the actual capital expenditure incurred on completion of the project shall be the criterion for the fixation of tariff. Where the actual expenditure exceeds the approved project cost, the excesses as approved by the Authority or an appropriate independent agency, as the case may be, shall be deemed to be the actual capital expenditure for the purpose of determining the tariff, provided that excess expenditure is not attributable to the Transmission Utility or its suppliers or contractors and where a transmission services agreement entered into between the Transmission Utility and the beneficiary provides a ceiling on capital expenditure, the capital expenditure shall not exceed such ceiling.

8. Against the scheduled completion date of 1.11.2002, the actual date of commercial operation was 1.11.2003. Thus there is a delay of one year. The petitioner has attributed this delay to right of way problem, hindrances by the local people, encroachment of land, poor law and order, bad weather, etc. Upon hearing the petitioner and the beneficiaries, the Commission is satisfied that the reasons for delay as stated by the petitioner were beyond its control. Accordingly, the delay of 12 months in commissioning of the transmission assets is regularised.

9. Audited expenditure up to the date of commercial operation is Rs. 8298.86 lakh which is less than the approved revised cost estimate of Rs. 8549.83 lakh. Accordingly, tariff is being calculated on the capital cost of Rs. 8298.86 lakh.

SOURCES OF FINANCING. DEBT – EQUITY RATIO

10. As per Para 4.3 of the notification dated 26.3.2001, capital expenditure of the transmission system shall be financed as per approved financial package set out in the techno-economic clearance of CEA or as approved by an appropriate independent agency, as the case may be.

11. The petitioner has claimed the tariff for the transmission line on the basis of ADB loan, domestic borrowings and equity. As per Government of India approval dated 19.4.2000, the sources of funding are ADB loan (Rs. 6217 lakh), domestic borrowings and the petitioner's internal resources. In the petition, ADB loan drawl was shown as Rs. 5447.55 lakhs only. Accordingly, the petitioner was directed during the hearing held on 31.1.2006 to file reasons for the under-utilization of ADB loan. The petitioner vide its affidavit dated 13.2.2006 has

clarified that for ADB I loan closing date was 31.3.2003 and the loan account was open up to 30.6.2003 for drawal of expenditure incurred up to 31.3.2003. However, out of the total expenditure of Rs. 8298.86 lakh incurred up to 1.11.2003, the date of commercial operation, the expenditure incurred only up to 31.3.2003 could be financed from ADB I loan as per the loan terms and conditions and the remaining loan of 1552 lakh had to be financed through domestic borrowings and internal resources.

12. Accordingly the debt equity ratio has been worked out to 85.55:14.45 by taking a total loan of Rs. 7099.55 lakh and equity of Rs.1199.31 lakh, as on the date of commercial operation, are being considered.

INTEREST ON LOAN

13. As provided in the notification dated 26.3.2001, interest on loan capital is to be computed on the outstanding loans, duly taking into account the schedule of repayment, as per financial package approved by CEA or any independent agency. In keeping with this provision, while calculating Interest on loan, closing balance of the notional loan as on 31.3.2001 has been taken as opening balance of the loan as on 1.4.2001.

14. The petitioner has submitted loan details for the assets commissioned after 31.3.2003 vide affidavit dated 18.5.2005

15. In the calculation, the interest on loan has been worked out by considering the gross amount of loan, repayment of instalments etc. as per the loan allocation statement up to 2003-04 based on the loan allocation details submitted

by the petitioner and rate of interest as on the date of commercial operation as given in the petition.

16. Certain loans are carrying floating rate of interest and the interest rate as submitted by the petitioner stated to be prevailing on the date of commercial operation has been taken in the calculation. Any change/resetting of the interest rate of the above loan during the tariff period covered in this petition would require settlement of the same mutually between the parties.

17. The difference in the figures of interest on loan submitted by the petitioner and those considered, is mainly due to difference in instalment amount of ADB-I loan. Further, the petitioner has not considered any instalment before the date of commercial operation while repayment of instalments of ADB-I loan prior to/after the date of commercial operation as per loan reconciliation statement mentioned above, have been considered in the calculations.

18. The details of calculation of interest on loan are as given below:

Calculation of Interest on Loan

(Rs. in lakh)

Details of Loan	2003-04
Bonds IX	
Gross Loan -Opening	836.00
Cumulative Repayment upto DOCO	83.60
Net Loan-Opening	752.40
Repayment during the year	0.00
Net Loan-Closing	752.40
Rate of Interest	12.25%
Interest	38.28
Repayment Schedule	10 Annual Instalments from 22.8.2003
Bonds X	
Gross Loan -Opening	661.00

Cumulative Repayment upto DOCO	0.00
Net Loan-Opening	661.00
Repayment during the year	0.00
Net Loan-Closing	661.00
Rate of Interest	10.90%
Interest	29.92
Repayment Schedule	12 Annual Instalments from 21.06.2004
Bond XI Option I	
Gross Loan -Opening	75.00
Cumulative Repayment upto DOCO	0.00
Net Loan-Opening	75.00
Repayment during the year	0.00
Net Loan-Closing	75.00
Rate of Interest	9.80%
Interest	3.05
Repayment Schedule	12 Annual Instalments from 07.12.2005
Bonds XII	
Gross Loan -Opening	5.00
Cumulative Repayment upto DOCO	0.00
Net Loan-Opening	5.00
Repayment during the year	0.00
Net Loan-Closing	5.00
Rate of Interest	9.70%
Interest	0.20
Repayment Schedule	12 Annual Instalments from 28.03.2006
PNB-II	
Gross Loan -Opening	41.00
Cumulative Repayment upto DOCO	0.00
Net Loan-Opening	41.00
Repayment during the year	0.00
Net Loan-Closing	41.00
Rate of Interest	8.60%
Interest	1.46
Repayment Schedule	12 Annual Instalments from 08.03.2005
OBC	
Gross Loan -Opening	34.00
Cumulative Repayment upto DOCO	0.00
Net Loan-Opening	34.00
Repayment during the year	0.00
Net Loan-Closing	34.00

Rate of Interest	8.60%
Interest	1.21
Repayment Schedule	12 Annual Instalments from 22.03.2005
ADB-I	
Gross Loan -Opening	5447.55
Cumulative Repayment upto DOCO	258.91
Net Loan-Opening	5188.64
Repayment during the year- 1 st December	6.83
Net Loan-Closing	5181.81
Rate of Interest	7.51%
Interest	161.66
Repayment Schedule	Half Yearly Instalments- 01.06.2001, 01.12.2001, 01.06.2002, 01.12.2002, 01.06.2003 & 01.12.2003.
Total Loan	
Gross Loan -Opening	7099.55
Cumulative Repayment upto Previous Year	342.51
Net Loan-Opening	6757.04
Repayment during the year	6.83
Net Loan-Closing	6750.21
Interest	235.79

DEPRECIATION

19. With regard to depreciation, para 4(b) of the CERC notification dated 26.3.2001 provides:

(i) The value base for the purpose of depreciation shall be the historical cost of the asset.

(ii) Depreciation shall be calculated annually as per straight-line method at the rate of depreciation as prescribed in the Schedule attached to the notification in Appendix II.

Provided that the total depreciation during the life of the project shall not exceed 90% of the approved Original Cost. The approved original cost shall include additional capitalization on account of foreign exchange rate variation also.

(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.

(v) Depreciation against assets relating to environmental protection shall be allowed on case-to-case basis at the time of fixation of tariff subject to the condition that the environmental standards as prescribed have been complied with during the previous tariff period.

20. The petitioner has claimed depreciation on the capital expenditure of Rs. 8298.86 lakh as claimed by it. As the claim of the petitioner has been worked out on the admitted capital cost and on the rates as prescribed in notification dated 26.3.2001, the same is allowed.

21. Based on the above, depreciation for individual items of capital expenditure has been calculated on the capital cost considered for the purpose of tariff at the rates as prescribed in the notification dated 26.3.2001. While approving depreciation component of tariff, the weighted average depreciation rate of 2.82%

has been worked out. The calculations in support of weighted average rate of depreciation of 2.82% are appended hereinbelow:

(Rs. in lakh)

	Capital Cost	Approved cost	Rate of Depreciation	Depreciation
Capital Expenditures as on 1.11.2003				
Land	244.20		0%	0.00
Building & Other Civil Works	456.24		1.80%	8.21
Sub-Station Equipment	2616.67		3.60%	94.20
Transmission Line	4880.57		2.57%	125.43
PLCC	101.18		6.00%	6.07
Total	8298.86	8720.00		233.91
Weighted Average Rate of Depreciation				2.82%

22. Accordingly, depreciation of Rs. 97.46 lakh has been allowed.

ADVANCE AGAINST DEPRECIATION

23. In addition to allowable depreciation, the petitioner becomes entitled to Advance Against Depreciation when originally scheduled loan repayment exceeds the depreciation allowable as per schedule to the notification. Advance Against Depreciation is computed in accordance with the following formula:

AAD = Originally scheduled loan repayment amount subject to a ceiling of 1/12th of original loan amount minus depreciation as per schedule.

24. While claiming Advance Against Depreciation the petitioner has included repayment of ADB-I loan during the year but before DOCO for the calculation of Advance against depreciation. For calculations purpose, repayment of ADB-I loan during the year after the date of commercial operation has been considered. Advance Against Depreciation has been allowed as detailed below:

(i) 1/12th of gross loan is worked out from the gross loan as considered for interest on loan under para 18 above.

- (ii) Repayment of loans during the year as considered for Interest on loan under para 18 is considered.
- (iii) Depreciation as allowed in para 22 above.

25. The entitlement of the petitioner has been considered in accordance with the notification dated 26.3.2001. As per the calculation, the petitioner's entitlement to Advance Against Depreciation works out 'nil' as shown below:

(Rs. in lakh)	
Advance Against Depreciation	2003-04
1/12th of Gross Loan(s)	591.63
Scheduled Repayment of the Loan(s)	6.83
Minimum of the above	6.83
Depreciation during the year	97.46
Advance Against Depreciation	0.00

OPERATION & MAINTENANCE EXPENSES

26. In accordance with the notification, Operation and Maintenance expenses, including expenses on insurance, if any, are to be calculated as under:

- i) Where O&M expenses, excluding abnormal O&M expenses, if any, on sub-station (OMS) and line (OML) are separately available for each region, these shall be normalised by dividing them by number of bays and line length respectively. Where data as aforesaid is not available, O&M expenses in the region are to be apportioned to the sub-station and lines on the basis of 30:70 ratio and these are to be normalised as below:

$$\text{O\&M expenses per Unit of the line length in Kms (OMLL)} = \frac{\text{Expenses for lines (OML) / Average line length in Kms (LL)}}{}$$

O&M expenses for sub-stations (OMB) = O&M expenses
for substations (OMB)/Average number of bays (BN)]

ii) The five years average of the normalised O&M expenses for lines and for bays for the period 1995-96 to 1999-2000 is to be escalated at 10% per annum for two years (1998-99 and 1999-2000) to arrive at normative O&M expenses per unit of line length and per bay for 1999-2000.

iii) The normative O&M per unit length and normative O&M per bay for the year 1999-2000 for the region derived in the preceding paragraph is to be escalated @ 6% per annum to obtain normative values of O&M expenses per unit per line length and per bay in the relevant year. These normative values are to be multiplied by line length and number of bays (as the case may be) in a given system in that year to compute permissible O&M expenses for the system.

iv) The escalation factor of 6% per annum is to be used to revise normative base figure of O&M expenses. Any deviation of the escalation factor computed from the actual inflation data that lies within 20% of the notified escalation factor of 6% shall be absorbed by utilities/beneficiaries.

27. The normalised O & M expenses for Eastern Region have been calculated separately in a number of cases pertaining to Eastern Region. The following table gives comparison of the normative O&M expenses as calculated by the petitioner and as per our calculations allowed for the base year i.e. 1999-2000 and afterwards:

NORMALIZED O&M EXPENSES FOR EASTERN REGION

(All Figures in Rs. in lakh)

S. NO.	Items	1995-96	1996-97	1997-98	1998-99	1999-00	Total for five years 95-96 to 99-00	1999-00	2000-01	2001-02	2002-03	2003-04
1	Total O&M expenses(Rs. Lakhs)	2529.29	2601.18	3586.76	4261.31	4490.56						
2	Abnormal O&M expenses	0.00	23.33	0.68	24.78	143.56	192.35					
3	Normal O&M expenses (S.No. 1 -S.NO. 2)	2529.29	2577.85	3586.08	4236.53	4347.00						
4	OML (O&M for lines)= 0.7 X S. NO.3	1770.50	1804.49	2510.25	2965.57	3042.90	12093.71					
5	OMS (O&M for substation) = 0.3XS.NO.3	758.79	773.35	1075.82	1270.96	1304.10	5183.02					
6	Line length at beginning of the year in Kms.	4418.70	4418.70	4418.70	4482.70	4665.70						
7	Line length added in the year in Kms.	0.00	0.00	64.00	183.00	86.00						
8	Line length at end of the year in Kms.	4418.70	4418.70	4482.70	4665.70	4751.70						
9	LL (Average line length in the Region)	4418.70	4418.70	4450.70	4574.20	4708.70	22571.00					
10	NO. of bays at beginning of the year	76	88	88	90	92						
11	NO. of bays added in the year	12	0	2	2	1						
12	NO. of bays at the end of the year	88	88	90	92	93						
13	BN (Average number of bays in the Region)	82.0	88.0	89.0	91.0	92.5	442.50					
14	AVOMLL(OML/LL)	0.40	0.41	0.56	0.65	0.65	2.668					
15	AVOMBN(OMS/BN)	9.25	8.79	12.09	13.97	14.10	58.194					
16	NOMLL(allowable O&M per unit of line length)			0.5335	0.5869	0.6456		0.6456	0.6843	0.7254	0.7689	0.8150
17	NOMBN(Allowable O&M per bay)			11.6389	12.8028	14.0831		14.0831	14.9280	15.8237	16.7731	17.7795
18	NOMLL(as calculated by petitioner)					0.6456		0.6456	0.6843	0.7254	0.7689	0.8150
19	NOMBN(as calculated by petitioner)					14.0831		14.0831	14.9280	15.8237	16.7731	17.7795

28. The differences in NOMLL and NOMBN as calculated by the petitioner and as allowed are mainly on account of certain expenses disallowed by us. Using these normative values, O&M charges have been calculated.

29. The petitioner has claimed O&M expenses for 124 ckt-kms of line length and 8 bays, which have been considered for calculation of O&M expenses.

30. O&M expenses allowed are given hereunder:

		O&M expenses (Rs. in lakh)
Line length in ckt-kms	- 124	42.11
Number of bays	- 8	59.26
Total		101.37

RETURN ON EQUITY

31. In accordance with the notification, the petitioner is entitled to return on equity at the rate of 16% per annum. For the purpose of tariff, equity base of Rs. 1199.31 lakh has been considered. Accordingly, the petitioner shall be entitled to return on equity of Rs.79.95 lakh during 2003-04.

INTEREST ON WORKING CAPITAL

32. As provided in the notification, the interest on working capital shall cover:

- (a) Operation and maintenance expenses (cash) for one month;
- (b) Maintenance spares at a normative rate of 1% of the capital cost less 1/5th of the initial capitalised spares. Cost of maintenance spares for each subsequent year shall be revised at the rate applicable for revision of expenditure on O & M of the transmission system; and
- (c) Receivables equivalent to two months' average billing calculated on normative availability level, which is 98%.

33. In keeping with the above methodology, working capital has been worked out, on the basis of capital expenditure as on the date of commercial operation. Deduction of 1/5th of the initial capitalised spares has been considered in the calculations.

34. The petitioner has claimed interest on working capital at the rate of 10.50%. The same has been allowed as the SBI PLR interest rate on the date of commercial operation was 10.50%. The detailed calculations in support of interest on Working Capital are as under:

Interest on Working Capital

(Rs. in lakh)

		2003-04
Maintenance Spares	1%	82.99
Less Capitalised Initial Spares		9.56
		73.43
O & M expenses		20.27
Receivables		211.17
Total		304.87
Rate of Interest		10.50%
Interest		13.34

TRANSMISSION CHARGES

35. In the light of above discussion, we approve the transmission charges as given in the Table below:

(Rs. in lakh)

Transmission Tariff	2003-04
Interest on Loan	235.79
Interest on Working Capital	13.34
Depreciation	97.46
Advance against Depreciation	0.00
Return on Equity	79.95
O & M Expenses	101.37
Total	527.92

36. 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 notification dated 26.3.2001 subject to directions if any, of the superior courts.

37. The petitioner by an affidavit dated 19.10.2005 has sought approval for the reimbursement of expenditure of Rs. 83,204/- incurred on publication of notices in the newspapers. The petitioner shall claim reimbursement of the said expenditure directly from the respondents in one installment in the ratio applicable for sharing of transmission charges. The petitioner shall also be entitled to recovery of filing fee of Rs 5 lakh, which shall be recovered from the respondents in five monthly installments of Rupees one lakh each and shall be shared by the respondents in the same ratio as other transmission charges.

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

39. The transmission charges approved by us shall be included in the regional transmission tariff for Eastern Region and shall be shared by the regional beneficiaries in accordance with the notification dated 26.3.2001.

40. This order disposes of Petition No.104/2006.

**Sd/-
(A.H. Jung)
MEMBER**

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

**Sd/-
(K.N. SINHA)
MEMBER**

**Sd/-
(ASHOK BASU)
CHAIRMAN**

New Delhi dated the 9th May 2006