

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram:

- 1. Dr. Parmod Deo, Chairperson**
- 2. Shri R.Krishnamoorthy, Member**
- 3. Shri S.Jayaraman, Member**
- 4. Shri V.S.Verma, Member**

Petition No. 23/2009

In the matter of

Approval of transmission tariff due to additional capitalization incurred during 2007-08 in respect of LILO of Nagarjunasagar-Raichur 400 KV S/C transmission line at Mehboobnagar and LILO of both the circuits of Nellor-Sriperumbudur 400 KV D/C transmission line at Almathi along with associated bays at Mehboobnagar and Almathi under System Strengthening Scheme-IV in Southern Region for the period from 1.4.2007 to 31.3.2009.

And in the matter of

Power Grid Corporation of India Limited

..Petitioner

Vs

1. Karnataka Power Transmission Corporation Ltd., Bangalore
2. Transmission Corporation of Andhra Pradesh Ltd., Hyderabad
3. Kerala State Electricity Board, Thiruvananthapuram
4. Tamil Nadu Electricity Board, Chennai
5. Electricity Department, Govt. of Pondicherry, Pondicherry...**Respondents**

The following were present:

1. Shri U.K. Tyagi, PGCIL
2. Shri V.V.Sharma, PGCIL
3. Shri A.K.Nagpal, PGCIL
4. Shri B.C.Pant, PGCIL
5. Shri M.M.Mandol, PGCIL
6. Shri Mohd. Mohsin, PGCIL
7. Shri Rakesh Prasad, PGCIL

**ORDER
(DATE OF HEARING: 21.4.2009)**

This petition has been filed for revision of transmission tariff for additional capital expenditure incurred during 2007-08 in respect of LILO of Nagarjunasagar-Raichur 400 KV S/C transmission line at Mehboobnagar (Asset-I) and LILO of both the circuits of Nellor-Sriperumbudur 400 KV D/C transmission line at Almathi along with associated bays at Mehboobnagar and Almathi (Asset-II) under the System Strengthening Scheme-IV (the transmission scheme) in

Southern Region for the period from 1.4.2007 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 reimbursement of the petition filing fee and other expenditure .in connection with the filing of the petition.

2. The administrative approval and expenditure sanction for the scheme was accorded by the Board of Directors of the petitioner company vide Memorandum dated 25.2.2004 at an estimated cost of Rs. 10194 lakh, which included IDC of Rs. 703 lakh.

3. The details of the respective transmission asset, their dates of commercial operation and apportioned approved cost as indicated by the petitioner are as under:

(Rs in lakh)						
Name of the asset	Date of commercial operation	Apportioned approved cost	Expenditure up to the date of commercial operation	Expenditure from the date of commercial operation to 31.3.2007	Expenditure from 1.4.2007 to 31.3.2008	Total
Asset-I	1.1.2006	1098.51	1162.88	0.00	4.55	1167.43
Asset-II	1.6.2006	9095.70	7698.45	80.63	752.21	8531.29
Total		10194.21	8861.33	80.63	756.76	9698.73

4. The transmission charges for Asset-I and Asset-II were approved by the Commission in its order dated 12.5.2006 in Petition No.143/2007 for the period 1.1.2006 to 31.3.2009 based on capital cost of Rs. 1162.88 lakh and Rs. 7779.08 lakh respectively as per audited accounts, after considering additional capital expenditure of Rs. 80.63 lakh for the year 2006-07 for Asset-II. The summary of the transmission charges approved by the said order dated 12.5.2008 is extracted hereunder:

(Rs. in lakh)

	Asset-I				Asset-II		
	2005-06 (Pro rata)	2006-07	2007-08	2008-09	2006-07 (Pro rata)	2007-08	2008-09
Depreciation	10.42	41.67	41.67	41.67	178.01	214.65	214.65
Interest on Loan	15.42	59.77	56.69	53.61	342.79	400.97	384.67
Return on Equity	11.30	45.20	45.20	45.20	256.73	309.77	309.77
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	1.33	5.37	5.46	5.55	23.73	28.90	29.31
O & M Expenses	14.69	61.09	63.52	66.08	135.10	168.44	175.33
Total	53.16	213.10	212.54	212.11	936.35	1122.73	1113.72

5. The relevant details of the approved cost, completion cost etc. separately of the Asset-I and Asset-II claimed by the petitioner are as under:

(Rs.in lakh)

Name of the Element	Approved cost	Capital expenditure up to 31.3.2007	Additional Capitalization during 2007-08	Capital expenditure as on 1.4.2008
Asset-I	1162.88	00.0	4.55	1167.43
Asset-II	7698.45	80.63	752.21	8531.29
Total	8861.33	80.63	756.76	9698.73

6. Based on the above additional capital expenditure, the petitioner has claimed the transmission charges for the years 2007-08 and 2008-09 as under:

(Rs. in lakh)

	Asset-I		Asset-II	
	2007-08 (Pro rata)	2008-09	2007-08 (Pro rata)	2008-09
Depreciation	41.76	41.84	224.70	234.76
Interest on Loan	56.80	53.83	420.58	423.12
Return on Equity	45.30	45.39	325.57	341.36
Advance against Depreciation	0.00	0.00	0.00	0.00
Interest on Working Capital	5.46	5.56	29.69	30.87
O & M Expenses	63.53	66.08	168.44	175.33
Total	212.85	212.70	1168.98	1205.44

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

(Rs. in lakh)

	Asset-I		Asset-II	
	2007-08	2008-09	2007-08	2008-09
Maintenance Spares	12.51	13.26	80.83	85.68
O & M expenses	5.29	5.51	14.04	14.61
Receivables	35.48	35.45	194.83	200.91
Total	53.28	54.22	289.70	301.20
Rate of Interest	10.25%	10.25%	10.25%	10.25%
Interest	5.46	5.56	29.69	30.87

8. The reply to the petition has been filed by Tamil Nadu Electricity Board (TNEB).

CAPITAL COST

9. The details submitted by the petitioner in support of its claim for additional capital expenditure are given hereunder:

Asset-I			Asset-II		
Year	Amount (Rs. in lakh)	Nature and details of expenditure	Year	Amount (Rs. in lakh)	Nature and details of expenditure
2007-08	Sub-station = Rs.4.55 lakh	Balance payments	2007-08	Transmission line=Rs.676.59 lakh Sub-station = Rs. 75.62 lakh	Balance payments
Total	Rs. 4.55 lakh		Total	Rs. 752.21 lakh	

10. It is found that the additional capital expenditure claimed is in respect of balance payments. These are part of the deferred liabilities relating to works/services and are within the original scope of work. Therefore, the additional expenditure sought to be capitalised is allowed under clauses (1) and (2) of Regulation 53 of the 2004 regulations.

TOTAL CAPITAL COST

11. Based on the above, capital cost for the purpose of tariff for each of the transmission asset, works out as under:

	Capital expenditure up to the date of commercial operation	Capital Expenditure from the date of commercial operation to 31.3.2007	Additional Capital Expenditure from 1.4.2007 to 31.3.2008	Capital expenditure up to 31.3.2008
(Rs.in lakh)				
Asset-I				
Land	-	-	-	-
Building & Civil Works	-	-	-	-
Sub-station	984.47	-	4.55	989.02
Transmission line	130.39	-	-	130.39
PLCC	48.02	-	-	48.02
Total	1162.88	-	-	1167.43
Asset-II				
Land	-	-	-	-
Building & Civil Works	-	-	-	-
Sub-station	1243.73	-	75.62	1319.35
Transmission line	6398.95	80.63	676.59	7156.17
PLCC	55.77	-	-	55.77
Total	7698.45	80.63	752.21	8531.29

DEBT- EQUITY RATIO

12. Vide order dated 12.5.2008 in Petition No. 147/2007 debt-equity ratio of 72.23:27.77 and 71.57:28.43 for the Asset-I and Asset-II respectively was considered for the purpose of tariff. The petitioner has considered debt-equity ratio of 72.23:23.77 and 71.57:28.43 for Asset-I and Asset-II respectively as on 1.4.2007. The petitioner has further considered the amount of additional capitalization in the debt-equity ratio of 70:30. This has been found to be in order. Accordingly, for the purpose of tariff, equity considered for the transmission assets is as under:

(Rs. in lakh)

	Equity as on the date of the commercial operation	Notional additional equity up to 31.3.2007	Average equity during 2006-07	Equity as on 1.4.2007	Notional additional equity during 2007-08	Average equity for 2006-07	Equity as on 1.4.2008
Asset- I	322.88	0.00	0.00	322.88	1.37	323.56	324.24
Asset-II	2188.45	24.19	2200.54	2212.64	225.66	2325.47	2438.30

RETURN ON EQUITY

13. 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.

14. For the reasons already recorded, equity as given the table under para 12 above has been considered. However, tariff for the years 2007-08 has been allowed pro rata on average equity. Accordingly, return on equity allowed each year is given as under:

(Rs. in lakh)

Name of the asset	Return on equity	
	2007-08	2008-09
Asset- I	45.30	45.39
Asset- II	325.57	341.36

INTEREST ON LOAN

15. Clause (1) 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."

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

(a) Gross amount of loan and repayment of instalments as per earlier order dated 12.5.2008 in Petition No 143/2007 have been considered.

(b) The petitioner has computed rate of interest @ 8.94% on Bond XIX for the period from 2006-07 by taking weighted average rate of interest @ 7.50% (short term bridge loan from Canara Bank) from 10.5.2006 to 23..2006 for 53 days and @ 9.25% for the period from 24.7.2006 to 31.3.2007 for 251 days. This has been found in order.

(c) On the basis of actual rate of interest on actual average loan, the weighted average rate of interest on loan has been worked out.

(d) Tariff has been worked out considering normative loan and normative repayments, and the weighted average rate of interest on loan for respective years as per the above has been multiplied to arrive at interest on loan . Normative repayments are worked out by the following formula :

$$\frac{\text{Actual repayment of actual loan during the year}}{\text{Opening balance of actual loan during the year}} \times \text{Opening balance of normative loan during the year}$$

(e) In case the normative repayment of loan during the year is less than the depreciation including Advance Against Depreciation during the year, then depreciation including Advance Against Depreciation during the year is deemed as normative repayment of loan during the year.

17. Based on above, year-wise interest on loan has been for 2007-08 and 2008-09 worked out as under:

(Rs. in lakh)

Details	Asset-I		Asset-II	
	2007-08	2008-09	2007-08	2008-09
Gross Normative Loan	840.00	843.19	5566.44	6092.99
Cumulative Repayment up to Previous Year/date of commercial operation	52.09	93.85	178.01	402.71
Net Loan-Opening	787.91	749.34	5388.43	5690.28
Addition due to Additional Capitalisation	3.19	-	526.55	-
Repayment during the year	41.76	41.84	224.70	234.76
Net Loan-Closing	749.34	707.50	5690.28	5455.52
Average Loan	768.62	728.42	5539.36	5572.90
Weighted Average Rate of Interest on Loan	7.39%	7.39%	7.59%	7.59%
Interest	56.80	53.83	420.58	423.12

18. The detailed calculations in support of the weighted average rate of interest are contained in Annexure-I and Annexure-II attached.

DEPRECIATION

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

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

(b) 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.

(c) Variation up to 31.3.2004 already allowed by the Central Government/Commission.

(d) On repayment of entire loan, the remaining depreciable value shall be spread over the balance useful life of the asset.

(e) 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.

20. Depreciation allowed for the years 2007-08 and 2008-09 has been worked out as below:

(Rs. in lakh)

	Asset-I		Asset-II	
	2007-08	2008-09	2007-08	2008-09
Rate of Depreciation	3.5836%	3.5837%	2.7553%	2.7517%
Depreciable Value	1048.64	1050.69	7339.67	7678.16
Balance Useful life of the asset	-	-	-	-
Remaining Depreciable Value	996.55	956.84	7161.66	7275.45
Depreciation	41.76	41.84	224.70	234.76
Cumulative Depreciation/ Advance against Depreciation	93.85	135.68	402.71	637.47

ADVANCE AGAINST DEPRECIATION

21. As per sub-clause (b) of clause (ii) of Regulation 56 of the 2004 regulations, in addition to allowable depreciation, the transmission licensee is entitled to Advance Against Depreciation, computed in the manner given hereunder:

AAD = Loan repayment amount as per regulation 56 (i) subject to a ceiling of 1/10th of loan amount as per regulation 54 minus depreciation as per schedule

22. It is provided that Advance Against Depreciation shall be permitted only if the cumulative repayment up to a particular year exceeds the cumulative depreciation

up to that year. It is further provided that Advance Against Depreciation in a year shall be restricted to the extent of difference between cumulative repayment and cumulative depreciation up to that year.

23. The petitioner has not claimed Advance Against Depreciation and accordingly, Advance Against Depreciation has not been considered.

OPERATION & MAINTENANCE EXPENSES

24. 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

25. O&M expenses as taken for the tariff calculations as per order dated 12.5.2008 in Petition No. 143/2007 have been considered, since line length and number of bays remain unchanged.

INTEREST ON WORKING CAPITAL

26. 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 petitioner has claimed maintenance spares after accounting for additional capital expenditure. TNEB in its reply has urged to retain the cost of maintenance spare at 1% of the project cost as on the date of commercial operation as already considered for award of tariff.

For the purpose of computation of maintenance spares, the historical cost is being taken as the cost on the date of commercial operation. Maintenance spares on additional capital expenditure are not being considered for the present. Therefore, the petitioner's claim in this regard is not being allowed. Accordingly, maintenance spares have been worked out on the historical cost and providing escalation from the date of commercial operation.

(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. O&M expenses as considered in the order dated 12.5.2008 in Petition No. 143/2007 have been considered.

(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. Accordingly, 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 1.4.2005/1.4.2006, which is in accordance with the 2004 regulations and has been allowed.

27. The necessary computations in support of interest on working capital are appended herein below:

(Rs. in lakh)

	Asset-I		Asset-II	
	2007-08	2008-09	2007-08	2008-09
Maintenance Spares	12.51	13.26	80.83	85.68
O & M expenses	5.29	5.51	14.04	14.61
Receivables	35.47	35.45	194.83	200.91
Total	53.28	54.22	289.70	301.20
Rate of Interest	10.25%	10.25%	10.25%	10.25%
Interest	5.46	5.56	29.69	30.87

TRANSMISSION CHARGES

28. The revised transmission charges being allowed for the two transmission assets for the period 2007-08 are summarised below:

(Rs. in lakh)

	Asset-I		Asset-II	
	2007-08	2008-09	2007-08	2008-09
Depreciation	41.76	41.84	224.70	234.76
Interest on Loan	56.80	53.83	420.58	423.12
Return on Equity	45.30	45.39	325.57	341.36
Advance against Depreciation	0.00	0.00	0.00	0.00
Interest on Working Capital	5.46	5.56	29.69	30.87
O & M Expenses	63.52	66.08	168.44	175.33
Total	212.84	212.70	1168.98	1205.45

29. The transmission charges for the year 2004-07 already approved vide order dated 12.5.2008 ibid remain unaltered.

30. The petitioner shall recover from the beneficiaries the additional transmission charges for the period up to 31.8.2008 in two monthly instalments.

31. 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. These transmission charges shall be

included in the regional transmission tariff for Southern Region and shall be shared by the regional beneficiaries in accordance with the 2004 regulations.

35. This order disposes of Petition No. 23/2009.

sd/-	sd/-	sd/-	sd/-
(V.S.VERMA)	(S.JAYARAMAN)	(R.KRISHNAMOORTHY)	(DR.PRAMOD DEO)
MEMBER	MEMBER	MEMBER	CHAIRPERSON
New Delhi dated the 13th May 2009			

CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN

LILO of Nagarjunasagar-Raichur 400 KV S/C transmission line at
Mehboobnagar

(Rs. in lakh)

Details of Loan	2005-06	2006-07	2007-08	2008-09
Bond XVII				
Gross Loan opening	840.00	840.00	840.00	840.00
Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
Net Loan-Opening	840.00	840.00	840.00	840.00
Additions during the year	0.00	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00	0.00
Net Loan-Closing	840.00	840.00	840.00	840.00
Average Loan	840.00	840.00	840.00	840.00
Rate of Interest	7.39%	7.39%	7.39%	7.39%
Interest	62.08	62.08	62.08	62.08
Repayment Schedule	10 Annual instalments from 22.9.2009			
Gross Loan opening	840.00	840.00	840.00	840.00
Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
Net Loan-Opening	840.00	840.00	840.00	840.00
Additions during the year	0.00	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00	0.00
Net Loan-Closing	840.00	840.00	840.00	840.00
Average Loan	840.00	840.00	840.00	840.00
Rate of Interest	7.39%	7.39%	7.39%	7.39%
Interest	62.08	62.08	62.08	62.08

Annexure-II

LILO of both the circuits of Nellor-Sriperumbudur 400 KV D/C transmission line at Almathi along with associated bays at Mehboobnagar and Almathi

(Rs. In lakh)

Details of Loan	2006-07	2007-08	2008-09
Bond XVII			
Gross Loan opening	4910.00	4910.00	4910.00
Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	4910.00	4910.00	4910.00
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	4910.00	4910.00	4910.00
Average Loan	4910.00	4910.00	4910.00
Rate of Interest	7.39%	7.39%	7.39%
Interest	362.85	362.85	362.85
Repayment Schedule	10 Annual instalments from 22.9.2009		
Bond XIX			
Gross Loan opening	600.00	600.00	600.00
Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	600.00	600.00	600.00
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	600.00	600.00	600.00
Average Loan	600.00	600.00	600.00
Rate of Interest	8.94%	9.25%	9.25%
Interest	53.67	55.50	55.50
Repayment Schedule	12 Annual Installments from 24.7.2010		
Gross Loan opening	5510.00	5510.00	5510.00
Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	5510.00	5510.00	5510.00
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	5510.00	5510.00	5510.00
Average Loan	5510.00	5510.00	5510.00
Rate of Interest	7.56%	7.59%	7.59%
Interest	416.52	418.35	418.35