

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram:

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

Petition No. 128/2007

In the matter of

Determination of final transmission tariff along with additional capitalization-I for Neelmangala-Somanahally 400 kV D/C transmission line with bay extension at Neelmangala (KPTL) and Somanahally (Power Grid) under Scheme for System Strengthening-III of Southern Region Grid from 1.1.2007 to 31.3.2009.

And in the matter of

Power Grid Corporation of India Limited, Gurgaon

..Petitioner

Vs

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

The following were present:

1. Shri U.K. Tyagi, PGCIL
2. Shri C.Kannan, PGCIL
3. Shri M.M.Mondal, PGCIL
4. Shri Manoj Rastogi, PGCIL

ORDER

(DATE OF HEARING: 11.12.2007)

The application has been made for approval of tariff for Neelmangala-Somanahally 400 kV D/C transmission line along with bay extension at Neelmangala (KPTCL) and Somanahally (Powergrid) (the transmission line) under the System Strengthening Scheme-III (the transmission scheme) in Southern Region from 1.1.2007 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") after accounting for additional capitalization of Rs. 99.14 lakh during 2006-07. The petitioner has also prayed for the reimbursement of expenditure from the beneficiaries incurred towards publishing notices in newspapers and the petition filing fee.

2. The investment approval for the transmission scheme was accorded by Ministry of Power vide its letter dated 26.10.2004 at an estimated cost of Rs. 28478 lakh, which includes IDC of Rs. 801 lakh. The transmission line is part of the transmission scheme, the apportioned approved cost of which is stated to be Rs. 6057 lakh.

3. The provisional transmission charges for the transmission line, declared under commercial operation on 1.1.2007, were approved by the Commission in its order dated 16.7.2007 in Petition No. 64/2007. The present petition is for approval of final tariff.

4. The transmission line was scheduled to be commissioned by April 2007. During 140th SREB meeting held on 18.3.2006, preponment of transmission line was discussed and the constituents agreed to earlier commissioning of this line.

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

(Rs. in lakh)

	2006-07(Pro rata)	2007-08	2008-09
Depreciation	30.13	122.04	122.04
Interest on Loan	48.21	188.89	180.17
Return on Equity	43.68	176.81	176.81
Advance against Depreciation	31.32	4.15	12.30
Interest on Working Capital	4.68	16.86	17.28
O & M Expenses	35.59	147.94	153.95
Total	193.61	656.69	662.55

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

(Rs. in lakh)

	2006-07(Pro rata)	2007-08	2008-09
Maintenance Spares	41.61	42.76	45.32
O & M expenses	11.86	12.33	12.83
Receivables	129.07	109.45	110.42
Total	182.54	164.54	168.57
Rate of Interest	10.25%	10.25%	10.25%
Interest	4.68	16.86	17.28

7. The reply to the petition has been filed by Tamil Nadu Electricity Board. 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.

CAPITAL COST

8. 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.

9. The petitioner has claimed additional capitalization of Rs. 99.14 lakh on works for the period from 1.1.2007 to 31.3.2007 over the capital expenditure of Rs. 4111.73 lakh as on the date of commercial operation.

ADDITIONAL CAPITALIZATION 2006-07

10. Clause (1) of Regulation 53 of the 2004 regulations provides-

“(1) The following capital expenditure within the original scope of work actually incurred after the date of commercial operation and up to the cut off date may be admitted by the Commission, subject to prudence check:

- (i) Deferred liabilities;
- (ii) Works deferred for execution;
- (iii) Procurement of initial capital spares in the original scope of works subject to the ceiling norm specified in regulation 52;
- (iv) Liabilities to meet award of arbitration or compliance of the order or decree of a court; and
- (v) On account of change in law:

Provided that original scope of work along with estimates of expenditure shall be submitted along with the application for provisional tariff:

Provided further that a list of the deferred liabilities and works deferred for execution shall be submitted along with the application for final tariff after the date of commercial operation of the transmission system.”

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

Year	Nature of expenditure		
2006-07	Sub-station	=	Rs. 46.24 lakh
	Transmission line	=	Rs. 52.90 lakh
	Total	=	Rs. 99.14 lakh

12. The additional capital expenditure claimed is within the original scope of work and is found to be in order as it was against the committed liability. Accordingly, the additional capital expenditure of Rs. 99.14 lakh has been allowed.

COST VARIATION

13. As against the apportioned approved cost of Rs. 6057 lakh, the total estimated completion cost is Rs. 4831.99 lakh. There is cost reduction by Rs. 1225 lakh (20.22%). The petitioner has submitted that the main reasons for cost variation is due to reduction in line length by 8 kms which in turn reduced expenditure for all lines items

TOTAL CAPITAL COST

14. Against the above background, gross block of Rs. 4210.87 lakh as on 31.3.2007 has been worked out for the purpose of tariff over the gross block of Rs. 4111.73 lakh as on the date of commercial operation.

DEBT- EQUITY RATIO

15. Clause (2) of Regulation 54 of the 2004 regulations *inter alia* provides that,-

“(2) In case of the transmission system for which investment approval was accorded prior to 1.4.2004 and which are likely to be declared under commercial operation during the period 1.4.2004 to 31.3.2009, debt and equity in the ratio of 70:30 shall be considered:

Provided that where equity actually employed to finance the project is less than 30%, the actual debt and equity shall be considered for determination of tariff:

Provided further that the Commission may in appropriate cases consider equity higher than 30% for determination of tariff, where the transmission licensee is able to establish to the satisfaction of the Commission that deployment of equity higher than 30% was in the interest of general public.”

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

17. The petitioner has considered debt-equity ratio of 70.01:29.99 as actually deployed on the date of commercial operation. The petitioner has further considered the amount of additional capitalization in the debt-equity ratio of 70:30. We have considered the debt-equity ratio on the date of commercial operation and for the additional capitalisation on works of Rs. 99.14 lakh as considered by the petitioner. Accordingly, for the purpose of tariff, an amount of Rs. 1233.15 lakh has been considered as equity as on 1.1.2007 and Rs. 1262.89 lakh as on 1.4.2007.

RETURN ON EQUITY

18. 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.

19. For the reasons recorded in para 17 above equity of Rs.1233.15 lakh has been considered as on 1.1.2007 and from 1.4.2007 onwards, equity of Rs. 1262.89 lakh has been considered each year. However, tariff for the period 1.1.2007 to 31.3.2007 has been allowed on average equity of Rs. 1248.02 lakh. Accordingly, the petitioner shall be entitled to return on equity of Rs. 43.68 lakh during 2006-07 on pro rata basis and Rs. 176.80 lakh each year during 2007-09.

INTEREST ON LOAN

20. 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.”

21. The petitioner has claimed interest on loan in the following manner:
- (i) Gross loan opening has been considered from 2006-07.
 - (ii) 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.
 - (iii) To the total gross loan of 2006-07, notional loan amounting to Rs. 60.40 lakh corresponding to additional capital expenditure for the year 2006-07 has been added. This resulting amount has been considered as notional loan and weighted average rate of interest on loan for respective years as per above has been multiplied to arrive at interest on loan. As the actual yearly repayment is less than the respective year's Deprecation + Advance against Deprecation, Deprecation plus Advance Against Deprecation has been considered as repayment.
22. In our calculation, the interest on loan has been worked out as detailed below:
- (i) Gross amount of loan, repayment of instalments and rate of interest submitted is used to work out weighted average rate of interest on actual loan. It includes part corresponding to additional capital expenditure from date of commercial operation to 31.3.2007 .
 - (ii) Notional loan arising out of additional capitalization from date of commercial operation to 31.3.2007 has been added in loan amount as on date of commercial operation to arrive at total notional loan. This adjusted gross loan has been considered as normative loan for tariff calculations.

- (iii) Tariff has been worked out considering normative loan and normative repayments. Once the normative loan has been arrived at, it has been considered for all purposes in the tariff. Normative repayment has been worked out by the following formula :

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

- (iv) Moratorium in repayment of loan has been considered with reference to normative loan and if the normative repayment of loan during the year is less than the depreciation during the year, it has been considered as moratorium and depreciation during the year has been deemed as normative repayment of loan during the year.
- (v) 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.
- (vi) As per the repayment schedule provided by the petition, the first repayment instalment of Rs. 61.45 lakh was due on 15.12.2006, 16 days before the date of commercial operation. The petitioner has considered the same as repayment for the tariff beginning from date of commercial operation. However, in our calculations this repayment during 2006-07 has been reduced to `zero` as the same was repaid before date of commercial operation. This has resulted in marginal increase in `interest on loan` with consequential reduction in Advance Against Deprecation to `zero` during 2006-07.

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

(Rs. in lakh)			
Details of loan	2006-07(Pro rata)	2007-08	2008-09
Interest on Loan			
Opening Gross Loan	2878.58	2947.98	2947.98
Cumulative Repayment up to date of commercial operation/previous year	0.00	30.13	157.62
Net Loan-Opening	2878.58	2917.85	2790.36
Additions due to Additional Capitalisation	69.40	0.00	0.00
Repayment during the year	30.13	127.49	135.73
Net Loan-Closing	2917.85	2790.36	2654.63
Average Loan	2898.21	2854.10	2722.49
Weighted Average Rate of Interest on Loan	6.69%	6.69%	6.69%
Interest	48.47	190.94	182.13

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

DEPRECIATION

25. 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.

26. The petitioner has claimed the depreciation on the average gross block of Rs. 4161.30 lakh for the year 2006-07 and Rs. 4210.87 lakh w.e.f. 1.4.2007 .

27. The gross depreciable value of the transmission line is $0.9 \times (\text{Rs } 4210.87 \text{ lakh}) = \text{Rs. } 3789.78 \text{ lakh}$.

28. Depreciation works out to Rs. 30.13 lakh for the period 1.1.2007 to 31.3.2007 on average gross block of Rs. 4161.30 lakh and Rs. 122.04 lakh each year for the period 1.4.2007 to 31.3.2009 on gross block of Rs. 4210.87 lakh by applying rates of depreciation of 2.8981% during 2006-09 thereafter as shown below:

Details of Depreciation	(Rs. in lakh)		
	2006-07 (Pro rata)	2007-08	2008-09
Gross block at the beginning of the period	4111.73	4210.87	4210.87
Additional Capitalisation during the period	99.14	-	-
Gross Block at the end of the period	4210.87	4210.87	4210.87
Rate of Depreciation	2.8981%	2.8981%	2.8981%
Depreciable Value (90%)	3745.17	3789.78	3789.78
Balance Useful life of the asset	-	-	-
Remaining Depreciable Value	3745.17	3759.65	3632.16
Depreciation	30.13	122.04	122.04

ADVANCE AGAINST DEPRECIATION

29. 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

30. 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.

31. The petitioner has claimed Advance Against Depreciation in the following manner:

- (i) 1/10th of gross loan considered for tariff computation.
- (ii) Cumulative loan as well as repayment of notional loan considered during the year.
- (iii) Depreciation as claimed in the petition.

32. In our calculation, Advance Against Depreciation has been worked as under:

- (i) 1/10th of gross loan has been worked out from the gross notional loan as per para 23 above.
- (ii) Repayment of notional loan during the year has been considered as per para 23 above.
- (iii) Depreciation as worked out as per para 28 has been taken into account.

33. The details of Advance Against Depreciation allowed for the transmission line is given hereunder:

(Rs. in lakh)

Details of Advance Against Depreciation	2006-07	2007-08	2008-09
1/10th of Gross Loan(s)	287.86	294.80	294.80
Repayment of Loan	30.13	127.49	135.73
Minimum of the above	30.13	127.49	135.73
Depreciation during the year	30.13	122.04	122.04
(A) Difference	0.00	5.45	13.69
Cumulative Repayment of the Loan	30.13	157.62	293.35
Cumulative Depreciation/ Advance against Depreciation	30.13	152.17	279.66
(B) Difference	0.00	5.45	13.69
Advance Against Depreciation	0.00	5.45	13.69

OPERATION & MAINTENANCE EXPENSES

34. 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

35. The petitioner has claimed O & M expenses for 84.008 ckt km and 4 bays which have been allowed. Accordingly, the petitioner's entitlement to O & M expenses has been worked out as given hereunder:

(Rs. in lakh)

	Year		
	2006-07(Pro rata)	2007-08	2008-09
O&M expenses for 84.008 ckt kms line length	5.17	21.42	22.35
O&M expenses for 4 bays	30.42	126.52	131.60
Total	35.59	147.94	153.95

36. 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

37. 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. In the present case, the capital expenditure on the date of commercial operation is Rs. 4111.73 lakh, which 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 to Rs. 41.12 lakh as on 1.1.2007.

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

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

	(Rs. in lakh)		
	2006-07(Pro rata)	2007-08	2008-09
Maintenance Spares	41.12	41.73	44.24
O & M expenses	11.86	12.33	12.83
Receivables	108.00	110.00	110.97
Total	160.98	164.06	168.04
Rate of Interest	10.25%	10.25%	10.25%
Interest	4.13	16.82	17.22

TRANSMISSION CHARGES

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

	(Rs. in lakh)		
	2006-07(Pro rata)	2007-08	2008-09
Depreciation	30.13	122.04	122.04
Interest on Loan	48.47	190.94	182.13
Return on Equity	43.68	176.80	176.80
Advance against Depreciation	0.00	5.45	13.69
Interest on Working Capital	4.13	16.82	17.22
O & M Expenses	35.59	147.94	153.95
Total	162.00	659.99	665.84

40. 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. .

41. The petitioner has sought approval for the reimbursement of expenditure of Rs.1,25,485/- 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.

42. The petitioner is already billing the respondents on provisional basis in accordance with the Commission's order dated 16.7.2007 in Petition No. 64/2007. The provisional billing of tariff shall be adjusted in the light of final tariff now approved by us.

43. This order disposes of Petition No. 128/2007.

Sd/-
(R.KRISHNAMOORTHY)
MEMBER
New Delhi dated the 8th February 2008

sd/-
(BHANU BHUSHAN)
MEMBER

Annexure

CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN				
(Rs. in Lakh)				
	Details of Loan	2006-07	2007-08	2008-09
1	IBRD-II			
	Gross Loan opening	2878.58	2878.58	2878.58
	Cumulative Repayment upto DOCO/previous year	60.00	60.00	183.21
	Net Loan-Opening	2818.58	2818.58	2695.36
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	123.21	131.18
	Net Loan-Closing	2818.58	2695.36	2564.19
	Average Loan	2818.58	2756.97	2629.77
	Rate of Interest	6.69%	6.69%	6.69%
	Interest	188.56	184.44	175.93
	Repayment Schedule	Half yearly Instalments from 15.12.2006		
2	IBRD-II			
	Gross Loan opening	0.00	0.00	0.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	2.97
	Net Loan-Opening	0.00	69.38	66.41
	Additions during the year	69.38	0.00	0.00
	Repayment during the year	0.00	2.97	3.16
	Net Loan-Closing	69.38	66.41	63.25
	Average Loan	34.69	67.90	64.83
	Rate of Interest	6.69%	6.69%	6.69%
	Interest	2.32	4.54	4.34
	Repayment Schedule	Half yearly Instalments from 15.12.2006		
	Total Loan			
	Gross Loan opening	2878.58	2878.58	2878.58
	Cumulative Repayment upto DOCO/previous year	60.00	60.00	186.18
	Net Loan-Opening	2818.58	2887.96	2761.77
	Additions during the year	69.38	0.00	0.00
	Repayment during the year	0.00	126.18	134.34
	Net Loan-Closing	2887.96	2761.77	2627.44
	Average Loan	2853.27	2824.87	2694.60
	Rate of Interest	6.69%	6.69%	6.69%
	Interest	190.88	188.98	180.27