

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram:

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

Petition No. 61/2009

In the matter of

Determination of revised transmission tariff due to additional capitalization incurred during 2004-05, 2005-06 and 2007-08 for 400 kV S/C Jameshedpur-Rourkela (Ckt-II) transmission line along with its associated bays in 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. Bihar State Electricity Board, Patna
2. West Bengal State Electricity Board, Calcutta
3. Grid Corporation of Orissa Ltd., Bhubaneswar
4. Damodar Valley Corporation, Calcutta
5. Power Department, Govt. of Sikkim, Gangtok
6. Jharkhand State Electricity Board, Ranchi **Respondents**

The following were present:

1. Shri U.K.Tyagi, PGCIL
2. Shri B.C.Pant, PGCIL
3. Shri R.B.Sharma, Advocate, BSEB

**ORDER
(DATE OF HEARING: 16.6.2009)**

This petition has been filed for revision of transmission tariff for additional capital expenditure incurred during 2004-05, 2005-06 and 2007-08 for 400 kV S/C Jameshedpur-Rourkela (Ckt-II) transmission line (hereinafter referred to as "the transmission line") along with its associated bays in 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 reimbursement of the petition filing fee and other expenditure .in connection with the filing of the petition.

2. The investment approval for the transmission line was accorded by Board of Directors of the petitioner company under its letter dated 11.10.2000 at an estimated cost of Rs. 7540.00 lakh, including IDC of Rs. 861.00 lakh. The transmission line was declared under commercial operation 1.1.2003.

3. The transmission charges for the transmission line were approved by the Commission in its order dated 4.5.2006 in Petition No. 67/2005 for the period 1.4.2004 to 31.3.2009 including additional capitalization up to 31.3.2004 based on capital cost of Rs. 5115.02 lakh. The summary of the transmission charges approved by the said order dated 4.5.2006 is extracted hereunder:

(Rs.in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	143.66	143.66	143.66	143.66	143.66
Interest on Loan	394.79	370.88	339.52	304.93	270.34
Return on Equity	128.52	128.52	128.52	128.52	128.52
Advance against Depreciation	0.00	60.78	210.80	210.80	210.80
Interest on Working Capital	19.46	20.51	23.01	22.87	22.75
O & M Expenses	113.87	118.43	123.24	128.04	133.28
Total	800.33	842.81	968.78	938.84	909.38

4. The relevant details of the approved cost, completion cost etc. of the transmission assets claimed by the petitioner are as under:

(Rs.in lakh)

Capital expenditure up to 1.4.2004	Additional Capitalization during 2004-05	Capital expenditure as on 1.4.2005	Additional Capitalization during 2005-06	Capital expenditure as on 1.4.2006 and 1.4.2007	Additional Capitalization during 2007-08	Capital expenditure as on 1.4.2008	Balance estimated expenditure	Estimated completion cost
5115.02	19.30	5134.32	4.20	5138.52	250.84	5389.36	140.00	5529.36

5. Based on the above additional capital expenditure, the petitioner has claimed the revised transmission charges for the period 2004-05 to 2007-08 as under:

(Rs.in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	143.94	144.25	144.30	147.94	151.57
.Interest on Loan	395.45	372.28	340.95	314.67	287.37
Return on Equity	128.93	129.42	129.51	134.78	140.05
Advance against Depreciation	0.00	60.92	211.67	208.03	225.24
Interest on Working Capital	19.48	20.56	23.08	23.17	23.64
O & M Expenses	113.87	118.43	123.24	128.04	133.28
Total	801.67	845.86	972.75	956.63	961.15

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

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	46.97	49.80	52.77	55.94	59.29
O & M expenses	9.49	9.87	10.27	10.67	11.11
Receivables	133.61	140.98	162.13	159.44	160.19
Total	190.07	200.63	225.17	226.05	230.59
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	19.48	20.56	23.08	23.17	23.64

7. The reply to the petition has been filed by Bihar State Electricity Board (BSEB).

CAPITAL COST

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

Sl. No.	Year	Amount (Rs. in lakh)	Nature and details of expenditure
1.	2004-05	19.30	Retention/final payments
2.	2005-06	4.20	Retention/final payments
3.	2007-08	250.84	Retention/final payments

9. It is found that the additional capital expenditure claimed is in respect of retention/ final payments. These are part of the deferred liabilities relating to works/services which have materialised, 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

10. Based on the above, capital cost for the purpose of tariff for each of the transmission asset, works out as under, which is within the approved cost estimate:

(Rs.in lakh)

Capital expenditure up to 1.4.2004	Additional Capitalization during 2004-05	Capital expenditure as on 1.4.2005	Additional Capitalization during 2005-06	Capital expenditure as on 1.4.2006 and 1.4.2007	Additional Capitalization during 2007-08	Capital expenditure as on 1.4.2008
5115.02	19.30	5134.32	4.20	5138.52	250.84	5389.36

DEBT- EQUITY RATIO

11. Vide order dated 4.5.2006 in Petition No. 67/2005 debt-equity ratio of 82.05:17.95 was considered for the purpose of tariff. The petitioner has been considered same debt-equity ratio. The petitioner has also 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 1.4.2004	Notional additional equity during 2004-05	Average equity during 2004-05	Equity as on 1.4.2005	Notional additional equity during 2005-06	Average equity for 2005-06	Equity as on 1.4.2006 and 1.4.2007	Notional additional equity during 2007-08	Average equity for 2007-08	Equity as on 1.4.2008
918.02	5.79	920.92	923.81	1.26	924.44	925.07	75.25	962.70	1000.32

RETURN ON EQUITY

12. 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.

13. For the reasons already recorded, equity as given the table under para 11 above has been considered. However, tariff for the years 2004-05 and 2005-06 has been allowed pro rata on average equity. Accordingly, revised return on equity allowed each year is given as under:

(Rs. in lakh)

Return on equity				
2004-05	2005-06	2006-07	2007-08	2008-09
128.93	129.42	129.51	134.78	140.05

INTEREST ON LOAN

14. 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.”

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

(a) Gross amount of loan, repayment of instalments and rate of interest and weighted average rate of interest on actual loan as per earlier order dated 4.5.2006 in Petition No. 67/2005 have been considered.

(b) Notional loan arising out of additional capital expenditure up to 31.3.2008 has been added in loan amount as on 1. 4.2004 to arrive at total notional loan. This adjusted gross loan is considered as normative loan for tariff calculations.

(c) Tariff has been worked out considering normative loan and normative repayments. Normative repayments are worked out by the following formula :

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

(d) Moratorium in repayment of loan is considered with reference to normative loan and if 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.

(e) Weighted average rate of interest on actual loan worked out as per (i) above is applied on the notional average loan during the year to arrive at the interest on loan.

16. Based on above, revised year-wise interest on loan has been worked out as under:

(Rs. in lakh)					
Details	2004-05	2005-06	2006-07	2007-08	2008-09
Gross Normative Loan	4197.00	4210.51	4213.45	4213.45	4389.04
Cumulative Repayment up to Previous Year/date of commercial operation	28.40	222.05	502.48	858.45	1214.42
Net Loan-Opening	4168.60	3988.46	3710.97	3355.00	3174.61
Addition due to Additional Capitalisation	13.51	2.94	0.00	175.59	
Repayment during the year	193.65	280.43	355.97	355.97	376.81
Net Loan-Closing	3988.46	3710.97	3355.00	3174.61	2797.80
Average Loan	4078.53	3849.71	3532.98	3264.81	2986.21
Weighted Average Rate of Interest on Loan	9.70%	9.67%	9.65%	9.64%	9.62%
Interest	395.45	372.28	340.95	314.67	287.37

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

DEPRECIATION

18. 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 Variation up to 31.3.2004 already allowed by the Central Government/Commission.

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

(d) 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.

19. Depreciation allowed has been worked out as below:

	(Rs. in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Gross block as on 1 st April of the year	5115.02	5134.32	5138.52	5138.52	5389.36
Addition due to Additional Capitalisation	19.30	4.20	0.00	250.84	-
Gross Block	5134.32	5138.52	5138.52	5389.36	5389.36
Rate of Depreciation	2.8086%	2.8083%	2.8082%	2.8104%	2.8124%
Depreciable Value	4612.20	4622.78	4624.67	4737.55	4850.42
Balance Useful life of the asset	-	-	-	-	-
Remaining Depreciable Value	4458.81	4325.45	4122.18	3879.09	3636.00
Depreciation	143.93	144.24	144.30	147.94	151.57

ADVANCE AGAINST DEPRECIATION

20. 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

21. 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.

22. Accordingly, in our calculation the Advance Against Depreciation has been worked as detailed below:

(a) 1/10th of gross loan is worked out from the Gross Notional Loan as per para 16 above.

(b) Repayment of notional loan during the year is considered as per para 16 above.

(c) Depreciation is worked out as per para 19 above.

(d) In the calculation of Advance Against Depreciation, cumulative depreciation/Advance Against Depreciation up to the preceding year along with the depreciation of the current year have been considered for working out the Advance Against Depreciation.

23. Details of revised Advance Against Depreciation allowed are given hereunder:

	(Rs. in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
1/10th of Gross Loan(s)	419.70	421.05	421.35	421.35	438.90
Repayment of the Loan	193.65	280.43	355.97	355.97	376.81
Minimum of the above	193.65	280.43	355.97	355.97	376.81
Depreciation during the year	143.93	144.24	144.30	147.94	151.57
(A) Difference	49.72	136.19	211.67	208.03	225.24
Cumulative Repayment of the Loan	222.05	502.48	858.45	1214.42	1591.24
Cumulative Depreciation/ Advance against Depreciation	297.32	441.57	646.78	1006.39	1366.00
(B) Difference	-75.27	60.92	211.67	208.03	225.24
Advance against Depreciation Minimum of (A) and (B)	0.00	60.92	211.67	208.03	225.24

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 4.5.2006 in Petition No. 67/2005 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. 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 4.5.2006 in Petition No. 67/2005 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 1.4.2004, which is in accordance with the 2004 regulations and has been allowed.

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

	(Rs. in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	46.97	49.78	52.77	55.94	59.29
O & M expenses	9.49	9.87	10.27	10.67	11.11
Receivables	133.61	140.98	162.12	159.44	160.19
Total	190.07	200.63	225.17	226.05	230.59
Rate of interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	19.48	20.56	23.08	23.17	23.64

Annexure

Details of calculations in support of the weighted revised average rate of interest.

(Rs. in lakh)

Details of Loan	2004-05	2005-06	2006-07	2007-08	2008-09
Bond IX					
Gross Loan opening	284.00	284.00	284.00	284.00	284.00
Cumulative Repayment upto previous year	28.40	56.80	85.20	113.60	142.00
Net Loan-Opening	255.60	227.20	198.80	170.40	142.00
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	28.40	28.40	28.40	28.40	28.40
Net Loan-Closing	227.20	198.80	170.40	142.00	113.60
Average Loan	241.40	213.00	184.60	156.20	127.80
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
Interest	29.57	26.09	22.61	19.13	15.66
Repayment Schedule	10 annual installments from 22.08.2003				
Bond X					
Gross Loan opening	1057.00	1057.00	1057.00	1057.00	1057.00
Cumulative Repayment upto previous year	0.00	88.08	176.17	264.25	352.33
Net Loan-Opening	1057.00	968.92	880.83	792.75	704.67
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	88.08	88.08	88.08	88.08	88.08
Net Loan-Closing	968.92	880.83	792.75	704.67	616.58
Average Loan	1012.96	924.88	836.79	748.71	660.63
Rate of Interest	10.90%	10.90%	10.90%	10.90%	10.90%
Interest	110.41	100.81	91.21	81.61	72.01
Repayment Schedule	12 annual installments from 21.06.2004				
Bond XI - option I					
Gross Loan opening	913.00	913.00	913.00	913.00	913.00
Cumulative Repayment upto previous year	0.00	0.00	76.08	152.17	228.25
Net Loan-Opening	913.00	913.00	836.92	760.83	684.75
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	0.00	76.08	76.08	76.08	76.08
Net Loan-Closing	913.00	836.92	760.83	684.75	608.67
Average Loan	913.00	874.96	798.88	722.79	646.71
Rate of Interest	9.80%	9.80%	9.80%	9.80%	9.80%
Interest	89.47	85.75	78.29	70.83	63.38
Repayment Schedule	12 annual installments from 07.12.2005				
Bond XII					
Gross Loan opening	117.00	117.00	117.00	117.00	117.00
Cumulative Repayment upto previous year	0.00	0.00	9.75	19.50	29.25
Net Loan-Opening	117.00	117.00	107.25	97.50	87.75
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	0.00	9.75	9.75	9.75	9.75
Net Loan-Closing	117.00	107.25	97.50	87.75	78.00
Average Loan	117.00	112.13	102.38	92.63	82.88
Rate of Interest	9.70%	9.70%	9.70%	9.70%	9.70%
Interest	11.35	10.88	9.93	8.98	8.04
Repayment Schedule	12 annual installments from 28.03.2006				

Bond XIII - option I					
Gross Loan opening	900.00	900.00	900.00	900.00	900.00
Cumulative Repayment upto previous year	0.00	0.00	0.00	75.00	150.00
Net Loan-Opening	900.00	900.00	900.00	825.00	750.00
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	0.00	0.00	75.00	75.00	75.00
Net Loan-Closing	900.00	900.00	825.00	750.00	675.00
Average Loan	900.00	900.00	862.50	787.50	712.50
Rate of Interest	8.63%	8.63%	8.63%	8.63%	8.63%
Interest	77.67	77.67	74.43	67.96	61.49
Repayment Schedule	12 annual installments from 31.07.2006				
LOAN FROM OBC					
Gross Loan opening	421.00	421.00	421.00	421.00	421.00
Cumulative Repayment upto previous year	0.00	35.08	70.17	105.25	140.33
Net Loan-Opening	421.00	385.92	350.83	315.75	280.67
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	35.08	35.08	35.08	35.08	35.08
Net Loan-Closing	385.92	350.83	315.75	280.67	245.58
Average Loan	403.46	368.38	333.29	298.21	263.13
Rate of Interest	8.60%	8.60%	8.60%	8.60%	8.60%
Interest	34.70	31.68	28.66	25.65	22.63
Repayment Schedule	12 annual installments from 23.03.2005				
LOAN FROM PNB-II					
Gross Loan opening	505.00	505.00	505.00	505.00	505.00
Cumulative Repayment upto previous year	0.00	42.08	84.17	126.25	168.33
Net Loan-Opening	505.00	462.92	420.83	378.75	336.67
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	42.08	42.08	42.08	42.08	42.08
Net Loan-Closing	462.92	420.83	378.75	336.67	294.58
Average Loan	483.96	441.88	399.79	357.71	315.63
Rate of Interest	8.60%	8.60%	8.60%	8.60%	8.60%
Interest	41.62	38.00	34.38	30.76	27.14
Repayment Schedule	12 annual installments from 08.03.2005				
Gross Loan opening	4197.00	4197.00	4197.00	4197.00	4197.00
Cumulative Repayment upto previous year	28.40	222.05	501.53	856.02	1210.50
Net Loan-Opening	4168.60	3974.95	3695.47	3340.98	2986.50
Additions during the year	0.00	0.00	0.00	0.00	0.00
Repayment during the year	193.65	279.48	354.48	354.48	354.48
Net Loan-Closing	3974.95	3695.47	3340.98	2986.50	2632.02
Average Loan	4071.78	3835.21	3518.23	3163.74	2809.26
Rate of Interest	9.6959%	9.6703%	9.6504%	9.6383%	9.6232%
Interest	394.79	370.88	339.52	304.93	270.34