

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram:

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

Petition No.123/2004

In the matter of

Approval of transmission charges for Dehri-Karamnasa Transmission System in Eastern Region for the period from 1.4.2004 to 31.3.2009.

And in the matter of

Power Grid Corporation of India Limited

...**Petitioner**

Vs

1. Bihar State Electricity Board, Patna
2. West Bengal State Electricity Board, Kolkata,
3. Grid Corporation of Orissa Ltd., Bhubaneshwar
4. Damodar Valley Corporation, Kolkata
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 C. Kannan, PGCIL
3. Shri P.C. Pankaj, PGCIL
4. Shri M.M. Mondal, CM (Fin), PGCIL
5. Shri V.K. Singh, BSEB
6. Shri S.R. Sarangi, GRIDCO

**ORDER
(DATE OF HEARING: 28.7.2005)**

The petition has been filed for approval for transmission charges for Dehri-Karamnasa Transmission System (the transmission system) 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 that it be permitted to continue the billing of transmission charges on the same basis as charged on 31.3.2004, pending determination of tariff in the present petition. No other specific relief is prayed for:

2. The Investment approval for the cost estimated of Rs. 1174.00 lakh, including IDC of Rs. 46.00 lakh for the transmission system was accorded by the Board of Directors of the petitioner company vide Memorandum No. C/CP/IR/-02 dated 22.10.1997. The date of commercial operation of the transmission system is 1.6.1999.

3. The annual transmission charges for the period from 1.4.2001 to 31.3.2004 were decided by the Commission in its order dated 5.8.2003 in petition No. 67/2002 at a gross block of Rs. 1039.31 lakh.

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

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	29.62	29.62	29.62	29.62	29.62
Interest on Loan	51.72	41.48	31.24	21.00	13.52
Return on Equity	52.82	52.82	52.82	52.82	52.82
Advance against Depreciation	0.00	25.95	36.58	36.58	26.85
Interest on Working Capital	5.74	6.18	6.36	6.36	6.26
O & M Expenses	75.76	78.80	82.00	85.19	88.68
Total	215.66	234.85	238.62	231.58	217.74

5. 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	13.76	14.58	15.46	16.38	17.37
O & M expenses	6.31	6.57	6.83	7.10	7.39
Receivables	35.94	39.14	39.77	38.60	36.29
Total	56.01	60.29	62.06	62.08	61.05
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	5.74	6.18	6.36	6.36	6.26

6. The reply to the petition has been filed by Bihar State Electricity Board. In response to the notices published by the petitioner in accordance with the procedure specified by the Commission, no comments have been received from general public.

CAPITAL COST

7. As per clause (2) of Regulation 52 of the 2004 regulations in case of the projects existing up to 31.3.2004, the project cost admitted by the Commission for determination of tariff prior to 1.4.2004 shall form the basis for determination of tariff.

8. The petitioner has considered the capital expenditure of Rs. 1039.31 lakh admitted by the Commission in the order dated 5.8.2003 *ibid*. The petitioner has not considered additional capitalisation on works or on account of FERV as there are no foreign loans. Accordingly, gross block of Rs. 1039.31 lakh as claimed has been considered for the purpose of tariff.

DEBT- EQUITY RATIO

9. Regulation 54 of the 2004 regulations *inter alia* provides that,-

(1) In case of the existing project, debt–equity ratio Considered by the Commission for fixation of tariff for the period ending 31.3.2004 shall be considered for determination of tariff.

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

Provided that where deployment of equity is less than 30%, the actual equity deployed shall be considered for the purpose of determination of tariff.

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

(3) In case of the transmission system for which investment approval is accorded on or after 1.4.2004, debt-equity in the ratio of 70:30 shall be considered for the purpose of determination of tariff:

Provided that where deployment of equity is less than 30%, the actual equity deployed shall be considered for the purpose of determination of tariff.

(4) The debt and equity amount arrived at in accordance with above sub-clause (1), (2) or (3), as the case may be, shall be used for calculation of interest on loan, return on equity, advance against depreciation and foreign exchange rate variation.”

10. The petitioner has claimed tariff based on debt-equity ratio of 63.7:36.3 as considered by the Commission in its order dated 5.8.2003 *ibid*. Based on this, Rs. 377.31 lakh as on 1.4.2004 has been considered as the equity for the purpose of determination of tariff in the present petition.

RETURN ON EQUITY

11. 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.

12. The petitioner has claimed return on equity of Rs. 377.31 lakh, which has been considered. Accordingly, the petitioner shall be entitled to return on equity @ Rs. 52.82 lakh each year during the tariff period.

INTEREST ON LOAN

13. 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 as per regulation 54 minus cumulative repayment as admitted by the Commission for the period up to 31.3.2004. The repayment for the period 2004-09 shall be worked out accordingly on normative basis.

(c) The transmission licensee shall make every effort to swap the loan as long as it results in net benefit to the long-term transmission customers. The costs associated with such swapping shall be borne by the long-term transmission customers.

(d) The changes to the loan terms and conditions shall be reflected from the date of such swapping and benefits passed on to the beneficiaries.

(e) 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.

14. The petitioner has claimed interest on loan in the following manner:

- (i) Gross loans, cumulative loan repayment up to previous year as admitted by the Commission in the order dated 5.8.2003 have been taken as the Opening Balance as on 1.4.2004.
 - (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) Gross loans as admitted by the Commission in the order dated 5.3.2003 ibid has been considered as notional loan and the weighted average rate of interest on loan for respective years as per above has been has been multiplied to arrive at interest on loan.
15. In our calculation, the interest on loan has been worked as detailed below:
- (i) Details of Net outstanding loan as on 31.03.2004, repayment schedule for the period 2004-09, rate of interest as on 01.04.2004 etc. have been taken as per the loan details submitted by the petitioner, for working out weighted average rate of interest.
 - (ii) The PNB-I and Corporation Bank loans carry the floating rate of interest and rate of interest as applicable as on 1.4.2004 has been considered in the calculation. This is subject to mutual settlement between the parties in case of any change/resetting of the interest rate during the tariff period.
 - (iii) Repayment of notional loan up to 31.03.2004 has been considered in proportion to repayment up to that date of actual loan.
 - (iv) Repayment for the years 2004-05 to 2008-09 of the total notional loan has been worked out as per the following formula :

Maximum of depreciation or [Notional net loan at the beginning of the years x (actual repayment of the respective loan / actual net respective loan at the beginning of the year)].

- (v) 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. SBI II loan considered in the order dated 5.8.2003 has been refinanced with Bond XIII option II during 2002-03. The repayment amount in both cases is matching. Therefore, it does not affect the opening balance as on 1.4.2004. However, benefits, if any, accruing as a result of refinancing shall be passed on to the beneficiaries.

17. The detailed calculations on interest on loan are given below:

(Rs. in lakh)

Details of loan	Up to 31.3.2004	2004- 05	2005-06	2006-07	2007-08	2008-09
Interest on Loan						
Gross loan as per order dated 5.8.2003	662.00					
Addition due to additional capitalisation	0.00					
Addition due to FERV	0.00					
Gross Normative Loan	662.00	662.00	662.00	662.00	662.00	662.00
Cumulative Repayment up to Previous Year		91.82	188.69	285.55	382.42	479.28
Net Loan-Opening		570.18	473.31	376.45	279.58	182.72
Repayment during the year		96.87	96.87	96.87	96.87	56.47
Net Loan-Closing		473.31	376.45	279.58	182.72	126.25
Average Loan		521.75	424.88	328.01	231.15	154.48
Weighted Average Rate of Interest on Loan		9.91%	9.76%	9.52%	9.09%	8.75%
Interest		51.72	41.48	31.24	21.00	13.52

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:

- (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.

19. Land cost included in the capital cost of the transmission system asset is Rs.7.37 lakh. Thus, the gross depreciable value of the asset, as per (ii) above, is $0.9 \times (\text{Rs.}1039.31 \text{ lakh} - \text{Rs. } 7.37 \text{ lakh}) = \text{Rs. } 928.75 \text{ lakh}$. Cumulative depreciation and AAD recovered in tariff up to 31.3.2004 is Rs. 225.91 lakh. Remaining depreciable value as on 1.4.2004 is thus Rs.702.84 lakh.

20. For the period 1.4.2004 to 31.3.2009 the depreciation works out to Rs. 29.62 lakh each year by applying rate or depreciation of 2.850%, as shown below:

(Rs. in lakh)

Details of Depreciation		Up to 31.3.2004	2004-05	2005-06	2006-07	2007-08	2008-09
As per order dated 5.8.2003		32313.96	1039.31				
Addition during 2001-04 due to Additional Capitalisation		0.00	0.00				
Addition during 2001-04 due to FERV		416.98	0.00				
Gross Block as on 31.3.2004		32730.94	1039.31	1039.31	1039.31	1039.31	1039.31
Rate of Depreciation	2.850%						
Depreciable Value	90%		928.75	928.75	928.75	928.75	928.75
Balance Useful life of the asset							
Remaining Depreciable Value			702.84	673.22	643.19	576.99	510.79
Depreciation			29.62	29.62	29.62	29.62	29.62

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 claimed advance against depreciation in the following manner:

- (i) 1/10th of gross loan is worked out from the Gross Notional Loan as per para 5 above admitted by the Commission in the petition of previous tariff setting.

- (ii) Cumulative loan as well as repayment of notional loan during the year has been considered as per para 5 above.
- (iii) Depreciation as claimed in the petition as per para 6 above.
- (iv) In Cumulative depreciation, the petitioner has not considered Advance against Depreciation allowed up to 2003-04 as per order dated 5.8.2003 ibid.

24. In our calculation, the Advance Against Depreciation has been worked out as under:

- (i) 1/10th of gross loan has been worked out from the gross notional loan as per para 17 above.
- (ii) Cumulative loan as well as repayment of notional loan during the year has also been considered as per para 17 above.
- (iii) Depreciation as worked out as para 20 has been taken into account.
- (iv) In cumulative depreciation recovered up to 2003-04, Advance Against Depreciation has been included as per order dated 5.8.2003 ibid.

25. The details of Advance Against Depreciation allowed for the transmission system, is given hereunder:

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
1/10th of Gross Loan(s)	66.20	66.20	66.20	66.20	66.20
Repayment of Loan	96.87	96.87	96.87	96.87	56.47
Minimum of the above	66.20	66.20	66.20	66.20	56.47
Depreciation during the year	29.62	29.62	29.62	29.62	29.62
(A) Difference	36.58	36.58	36.58	36.58	26.85
Cumulative Repayment of the Loan	188.69	285.55	382.42	479.28	535.75
Cumulative Depreciation/ Advance against Depreciation	255.53	285.15	315.17	381.37	447.57
(B) Difference	(-)66.84	0.40	67.24	97.91	88.18
Advance Against Depreciation- Minimum of (A) and (B)	0.00	0.40	36.58	36.58	26.85

OPERATION & MAINTENANCE EXPENSES

26. 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

27. The petitioner has claimed O & M expenses for 86 ckt kms of line length and 2 bays (1 each at Dehri and Karamnasa sub-stations), which has been allowed. Accordingly, the petitioner's entitlement to O & M expenses has been worked out as given hereunder:

(Rs. in lakh)

	Year				
	2004-05	2005-06	2006-07	2007-08	2008-09
O&M expenses for 86 ckt km line length	19.52	20.30	21.16	21.93	22.88
O&M expenses for 2 bays	56.24	58.50	60.84	63.26	65.80
Total	75.76	78.80	82.00	85.19	88.68

28. 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

29. 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, element-wise capital expenditure on the date of commercial operation is Rs. 971.37 lakh, which has been considered as the historical cost for the purpose of the present petition and maintenance spares haven 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. 12.88 lakh as on 1.4.2004.

(ii) O & M expenses

Regulation 56(v)(1)(a) of the 2004 regulations provides for operation and maintenance expenses for one month as a component of working capital. The petitioner has claimed O&M expenses for 1 month of O&M expenses of the respective year as claimed in the petition. This has been considered in the working capital.

(iii) Receivables

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

(iv) Rate of interest on working capital

As per Regulation 56(v)(2) of the 2004 regulations, rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on 1.4.2004 or on 1st April of the year in which the project or part thereof (as the case may be) is declared under commercial operation, whichever is later. The interest on working capital is payable on normative basis notwithstanding that the transmission licensee has not taken working capital loan from any outside agency. The petitioner has claimed interest on working capital @ 10.25% based on SBI PLR as on 1.4.2004, which is in accordance with the 2004 regulations and has been allowed.

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

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	12.88	13.65	14.47	15.34	16.26
O & M expenses	6.31	6.57	6.83	7.10	7.39
Receivables	35.93	34.79	39.75	38.58	36.27
Total	55.12	55.01	61.06	61.01	59.92
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	5.65	5.64	6.26	6.25	6.14

TRANSMISSION CHARGES

31. The capital cost and other relevant details are contained in the summary sheet attached. The transmission charges being allowed for transmission system are summarised below:

(Rs.in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	29.62	29.62	29.62	29.62	29.62

Interest on Loan	51.72	41.48	31.24	21.00	13.52
Return on Equity	52.82	52.82	52.82	52.82	52.82
Advance against Depreciation	0.00	0.40	36.58	36.58	26.85
Interest on Working Capital	5.65	5.64	6.26	6.25	6.14
O & M Expenses	75.76	78.80	82.00	85.19	88.68
Total	215.57	208.76	238.52	231.47	217.63

32. 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 Eastern Region and shall be shared by the regional beneficiaries in accordance with the 2004 regulations.

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

34. This order disposes of Petition No.123/2004.

Sd-/
(A.H. JUNG)
MEMBER

sd-/
(BHANU BHUSHAN)
MEMBER

sd-/
(K.N. SINHA)
MEMBER

sd-/
(ASHOK BASU)
CHAIRPERSON

New Delhi dated the 12th January 2006

Summary Sheet	
Name of the Company:	PGCIL
Name of the Element:	Dehri-Karamnasa Transmission System in Eastern Region
Actual DOCO:	1.6.1999

Petition No.:		123/2004	
Tariff setting Period:		2004-09	
(Rs.in lakh)			
1	Capital Cost of the Project	1039.31	
2	Admitted Capital Cost as on 01.04.2004 for Calculation of Debt and Equity¹	1039.31	
3	Additional Capitalization(works)	0.00	
	For the year 2001-02	0.00	
	For the year 2002-03	0.00	
	For the year 2003-04	0.00	
	Total	0.00	
4	Additional Capitalization(FERV)	0.00	
	For the year 2001-02	0.00	
	For the year 2002-03	0.00	
	For the year 2003-04	0.00	
	Total	0.00	
5	Total Capital Cost as on 01.04.2004(2+3+4)	1039.31	
6	Means of Finance¹ :		
	Debt	63.70%	662.00
	Equity	36.30%	377.31
	Total	100.00%	1039.31
7	Gross Loan as on 01.04.2004	662.00	
	Cumulative Repayment up to 31.3.2009 :	535.75	
	Repaid up to 31.03.2004	91.82	
	From 01.04.01 to 31.03.2004 (ACE & FERV)	0.00	
	From 01.04.2004 to 31.03.2009	443.93	
	Total	535.75	
8	Balance Loan to be repaid beyond 31.03.2009 :	126.25	
9	Depreciation recovered up to 31.03.09 :	474.42	
		Dep	AAD
	Recovered up to 31.03.2004	200.36	25.55
	From 01.04.01 to 31.03.2004 (ACE & FERV)	0.00	0.00
	From 01.04.2004 to 31.03.2009	148.11	100.41
	Total		474.42
10	Balance Depreciation to be recovered beyond 31.03.2009 :	454.33	
	Capital cost for the purpose of Depreciation	1039.31	
	ACE + FERV	0.00	
	Capital cost as 01.04.2004	1039.31	
	Less: Land Cost	7.37	
		1031.94	
	90% of Capital Cost as above	928.75	
	Cum. Depreciation to be recovered up to 31.03.09	474.42	
	Balance Depreciation to be recovered beyond 31.03.09	454.33	