

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram:

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

Petition No. 116/2004

In the matter of

Approval of transmission charges for 50 MVAR Reactor with associated equipment at Chandrapur sub-station in Western 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. Madhya Pradesh State Electricity Board, Jabalpur
 2. Maharashtra State Electricity Board, Mumbai
 3. Gujarat Electricity Board, Baroda
 4. Electricity Deptt., Government of Goa, Panaji
 5. Electricity Deptt., Administration of Daman & Diu, Daman
 6. Electricity Deptt., Administration of Dadra Nagar Haveli, Silvassa
 7. Chhattisgarh State Electricity Board, Raipur
- Respondents**

The following were present:

1. Shri U.K. Tyagi, PGCIL
2. Shri C. Kannan, PGCIL
3. Shri P.C. Pankaj, PGCIL
4. Shri Prasant Sharma, CM, PGCIL
5. Shri M.M. Mondal, CM (Fin), PGCIL
6. Shri D.D.Khandelwal, MPSEB
7. Shri Deepak Srivastava, MPSEB
8. Shri P.M.Mathey, MSEB

ORDER

(DATE OF HEARING: 8.9.2005)

The petition has been filed for approval for transmission charges for 50 MVAR Reactor with associated equipment at Chandrapur sub-station (the transmission system) in Western 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 had 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 Board of Directors of the petitioner company accorded investment approval for implementation of the transmission system in its 32nd meeting held on 18.3.1994 at an estimated cost of Rs. 630.00 lakh. The date of commercial operation of the transmission system is 1.4.1997.

3. The tariff for the period up to 31.3.2001 was approved by the Commission in its order dated 6.6.2002 in petition No. 52/2001 at a cost of Rs. 391.41 lakh. The annual transmission charges for the period from 1.4.2001 to 31.3.2004 were decided by the Commission in its order dated 31.7.2003 in Petition No.48/2002 at a gross block of Rs.439.67 lakh, which included FERV up to 31.3.2001.

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

	(Rs. in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	16.46	16.46	16.46	16.46	16.46
Interest on Loan	8.96	8.23	7.44	6.60	5.69
Return on Equity	33.99	33.99	33.99	33.99	33.99
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	2.38	2.43	2.49	2.55	2.61
O & M Expenses	28.12	29.25	30.42	31.63	32.90
Total	89.91	90.36	90.80	91.22	91.65

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	5.89	6.24	6.61	7.01	7.43
O & M expenses	2.34	2.44	2.54	2.64	2.74
Receivables	14.98	15.06	15.13	15.20	15.27
Total	23.21	23.74	24.28	24.85	25.45
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	2.38	2.43	2.49	2.55	2.61

6. The replies to the petition have been filed by Maharashtra State Electricity Board and Madhya Pradesh State Electricity Board. No comments or suggestion 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

7. As per clause (2) of Regulation 52 of the 2004 regulations in case of the projects existing as on 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 claimed the capital expenditure of Rs.439.67 lakh admitted by the Commission in the order dated 31.7.2003 *ibid*. The petitioner has not claimed additional capitalisation on works. The petitioner has claimed additional capitalisation of Rs. 17.42 lakh on account of FERV for the period 1.4.2001 to 31.3.2004. Accordingly, gross block of Rs. 457.09 lakh has been claimed for the purpose of tariff.

Extra Rupee Liability during the years 2001-04:

9. Regulation 1.13 (a) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2001 provides as under:

- (a) Extra rupee liability towards interest payment and loan repayment actually incurred, in the relevant year shall be admissible; provided it directly arises out of foreign exchange rate variation and is not attributable to Utility or its suppliers or contractors. Every utility shall follow the method as per the Accounting Standard-11 (Eleven) as issued by the Institute of Chartered Accountants of India to calculate the impact of exchange rate variation on loan repayment

- (b) Any foreign exchange rate variation to the extent of the dividend paid out on the permissible equity contributed in foreign currency, subject to the ceiling of permissible return shall be admissible. This as and when paid, may be spread over the twelve-month period in arrears

10. Regulation 1.7 of the 2001 further provides that recovery of foreign exchange rate variation would be done directly by the utilities from the beneficiaries without filing a petition before the Commission. In case of any objections by the beneficiaries to the amounts claimed on these counts, they may file an appropriate petition before the Commission.

11. No objection has been raised by the beneficiaries to petitioner's claim for additional capitalization on account of FERV. It is, however, noted that FERV for the period works out to Rs. 16.99 lakh against the petitioner's claim for Rs. 17.42 lakh. Accordingly, FERV of Rs. 16.99 lakh has been considered for tariff calculations.

12. Based on the above, the gross block of Rs. 456.66 lakh, including additional capitalization of Rs.16.99 lakh on account of FERV, as on 1.4.2004 has been considered for the purpose of tariff.

DEBT- EQUITY RATIO

13. Regulation 54 of the 2004 regulations *inter alia* provides that 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. It further provides that the debt and equity amount arrived at in the above manner shall be used for calculation of interest on loan, return on equity, advance against depreciation and foreign exchange rate variation.

14. The petitioner has claimed tariff based on debt-equity ratio of 46.88:53.12 as considered by the Commission in its order dated 31.7.2003 *ibid*. The additional capitalization amount of Rs. 17.42 lakh on account of FERV has been apportioned between debt and equity in the same ratio as considered in the order dated 31.7.2003, that is, ratio of 46.88:53.12, Rs. 8.17 lakh as loan and Rs. 9.25 lakh as equity . Based on this, Rs. 242.80 lakh as on 1.4.2004 has been taken as the equity by the petitioner for the purpose of determination of tariff in the present petition.

15. The petitioner has not given in the petition evidence in support of the approved debt-equity ratio. Therefore, the entire amount of Rs. 16.99 lakh on the account of FERV has been adjusted against loan. Accordingly, for the purpose of tariff, an amount of Rs. 233.55 lakh has been considered as equity as on 1.4.2004 as considered in the order dated 31.7.2003. Thus, the debt-equity ratio works out to 48.85:51.14.

RETURN ON EQUITY

16. 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.

17. The petitioner has claimed return on equity of Rs. 242.80 lakh. For the reasons already given in para 15 above, equity of Rs. 233.55 lakh has been considered. Accordingly, the petitioner shall be entitled to return on equity @ Rs. 32.70 lakh each year during the tariff period.

INTEREST ON LOAN

18. 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.
19. The petitioner has claimed interest on loan in the following manner:
- (i) Gross loans, cumulative loan repayment up to 31.3.2004 and outstanding balance up to that year as admitted by the Commission in the order dated 31.7.2003 have been taken.
 - (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 31.7.2003 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.

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

(i) Details of net outstanding loan as on 31.3.2004, repayment schedule for the period 2004-09, rate of interest as on 1.4.2004, etc. have been taken from the loan allocation statement submitted by the petitioner for working out weighted average rate of interest.

(ii) Gross loan and cumulative repayment up to 31.3.2004 has been taken from the order dated 31.7. 2003.

(iii) Notional loan arising out of FERV during the years 2001-04 has been considered.

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

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

(v) 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 during the year, it is considered as moratorium and depreciation during the year is deemed as normative repayment of loan during the year.

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

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

(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 31.7. 2003	206.11					
Addition due to additional capitalisation	0.00					
Addition due to FERV	16.99					
Gross Normative Loan	223.10	223.10	223.10	223.10	223.10	223.10
Cumulative Repayment up to Previous Year		56.28	72.72	89.16	105.60	122.04
Net Loan-Opening		166.83	150.39	133.95	117.51	101.07
Repayment during the year		16.44	16.44	16.44	16.44	16.44
Net Loan-Closing		150.39	133.95	117.51	101.07	84.63
Average Loan		158.61	142.17	125.73	109.29	92.85
Weighted Average Rate of Interest on Loan		5.8000%	5.8000%	5.8000%	5.8000%	5.8000%
Interest		9.20	8.25	7.29	6.34	5.39

DEPRECIATION

22. 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.

23. The gross depreciable value of the asset, as per (ii) above, is 0.9 x Rs. 456.66 lakh = Rs. 411.00 lakh. Cumulative depreciation and AAD recovered in tariff up to 31.3.2004 is Rs. 170.25 lakh based on order dated 31.7.2003. Further there is an addition of Rs. 0.87 lakh on account of depreciation on FERV which makes the Cumulative Depreciation/Advance Against Depreciation up to 31.3.2004 as Rs. 171.12 lakh. Remaining depreciable value as on 1.4.2004 is thus Rs. 239.87 lakh.

24. For the period 1.4.2004 to 31.3.2009 the depreciation works out to Rs. 16.44 lakh each year by applying rate of depreciation of 3.60% 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 31.7.2003		439.67					
Addition during 2001-04 due to Additional Capitalisation		0.00					
Addition during 2001-04 due to FERV		16.99					
Gross Block as on 31.3.2004		456.66	456.66	456.66	456.66	456.66	456.66
Rate of Depreciation	3.60%						
Depreciable Value	90%		411.00	411.00	411.00	411.00	411.00
Balance Useful life of the asset			-	-	-	-	-
Remaining Depreciable Value			239.87	223.43	206.99	190.55	174.11
Depreciation			16.44	16.44	16.44	16.44	16.44

ADVANCE AGAINST DEPRECIATION

25. 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.

26. 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.

27. The petitioner has not claimed Advance Against Depreciation. The petitioner's entitlement to Advance Against Depreciation is, therefore, zero.

OPERATION & MAINTENANCE EXPENSES

28. 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

29. The petitioner has claimed O & M expenses for 1 bay (at Chandrapur), which has been allowed. Accordingly, the petitioner's entitlement to O & M expenses has been worked out as given hereunder:

	Year				
	2004-05	2005-06	2006-07	2007-08	2008-09
O&M expenses for bays (Rs. in lakh)	28.12	29.25	30.42	31.63	32.90
Total (Rs. in lakh)	28.12	29.25	30.42	31.63	32.90

30. The petitioner has submitted that the wage revision of its employees is due with effect from 1.1.2007. Therefore, according to the petitioner, 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

31. 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, capital expenditure on the date of commercial operation was Rs. 398.31 lakh. There was delay of 12 months in commissioning of the project and therefore, pro rata reduction of IDC of Rs. 6.90 lakh for 12 months was made in the capital cost on date of commercial operation. Therefore, the admitted capital of Rs. 391.41 lakh as on 1.4.1997 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. The value of maintenance spares as on 1.4.2004 works out to Rs. 5.89 lakh.

(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 the respective year 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 of 2 months' transmission charges. 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.

32. 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	5.89	6.24	6.61	7.01	7.43
O & M expenses	2.34	2.44	2.54	2.64	2.74
Receivables	14.80	14.84	14.89	14.94	15.00
Total	23.03	23.52	24.03	24.58	25.17
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	2.36	2.41	2.46	2.52	2.58

TRANSMISSION CHARGES

33. A summary sheet showing basic details of capital cost and other related aspects is annexed to this order. The transmission charges being allowed for the transmission system are summarised below:

(Rs. In lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	16.44	16.44	16.44	16.44	16.44
Interest on Loan	9.20	8.25	7.29	6.34	5.39
Return on Equity	32.70	32.70	32.70	32.70	32.70
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	2.36	2.41	2.46	2.52	2.58
O & M Expenses	28.12	29.25	30.42	31.63	32.90
Total	88.82	89.04	89.31	89.63	90.00

34. The petitioner has sought approval for the reimbursement of expenditure of Rs. 96,402/- incurred on publication of notices in the newspapers. The petitioner shall claim reimbursement of the said expenditure directly from the respondents in one installment in the ratio applicable for sharing of transmission charges. The petitioner has also sought reimbursement of filing fee of Rs.5.00 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.

35. 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 Western Region and shall be shared by the regional beneficiaries in accordance with the 2004 regulations.

36. 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.

37. This order disposes of Petition No.116/2004.

Sd-/
(A.H.JUNG)
MEMBER

sd-/
(BHANU BHUSHAN)
MEMBER

sd-/
(ASHOK BASU)
CHAIRPERSON

New Delhi dated the 25th April 2006

SUMMARY SHEET

Name of the Company:		PGCIL	
Name of the Element:		50 MVAR Reactor with associated equipment at Chandrapur sub-station in Western Region.	
Actual DOCO:		1. 4.1997	
Petition No.:		116/2004	
Tariff setting Period:		2004-09	
(Rs.in lakh)			
1	Capital Cost of the Project		630.00
2	Admitted Capital Cost as on 1. 4.2004 for Calculation of Debt and Equity		439.67
3	Additional Capitalisation(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 Capitalisation(FERV)			16.99
	2001-02		0.83	
	2002-03		14.10	
	2003-04		2.06	
	Total		16.99	
5	Total Capital Cost as on 1. 4.2004(2+3+4)			456.66
6	Means of Finance¹ :			
	Debt	48.85%	223.11	
	Equity	51.14%	233.55	
	Total	100.00%	456.65	
7	Gross Loan as on 1. 4.2004			223.11
8	Cumulative Repayment up to 31.3.2009 :			138.48
	Repaid up to 31. 3.2004		54.16	
	1. 4.2001 to 31. 3.2004 (ACE & FERV)		2.12	
	1. 4.2004 to 31. 3.2009		82.20	
	Total		138.48	
9	Balance Loan to be repaid beyond 31. 3.2009 :			84.63
10	Depreciation recovered up to 31. 3.2009 :			253.32
		Dep	AAD	Total
	Recovered up to 31. 3.2004	170.25	0.00	170.25
	From 1. 4.2001 to 31. 3.2004 (ACE & FERV)	0.87	0.00	0.87
	From 1. 4.2004 to 31. 3.2009	82.20	0.00	82.20
	Total			253.32
11	Balance Depreciation to be recovered beyond 31. 3.2009 :			157.67
	Capital cost for the purpose of Depreciation		439.67	
	ACE + FERV		16.99	
	Capital cost as 1. 4.2004		456.66	
	Less: Land Cost		0.00	
			456.66	
	90% of Capital Cost as above		411.00	
	Cum. Depreciation to be recovered up to 31. 3.2009		253.32	
	Balance Depreciation to be recovered beyond 31. 3.2009		157.67	