

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**CORAM:**

1. **Shri Ashok Basu, Chairman**
2. **Shri K.N. Sinha, Member**

**Petition No. 74/2002**

**In the matter of**

Approval of tariff for the transmission system associated with Gandhar Gas Power Station (Stage I) in Western Region for the period from 1.4.2001 to 31.3.2004.

**And in the matter of**

Power Grid Corporation of India Ltd.

**...Petitioner**

**Vs**

1. Madhya Pradesh Electricity Board, Jabalpur
2. Maharashtra State Electricity Board, Mumbai
3. Gujarat Electricity Board, Baroda
4. Electricity Department, Govt of Goa, Panaji
5. Electricity Department, Administration of Dadra Nagar Haveli, Silvassa
6. Chhattisgarh State Electricity Board
7. Electricity Department, Administration of Daman & Diu, Daman...**Respondents**

**The following were present:**

1. Shri S. S. Sharma, AGM, PGCIL
2. Shri Prashant Sharma, PGCIL
3. Shri U.K. Tyagi, Chief Manager, PGCIL
4. Shri A.K. Nagpal, PGCIL
5. Shri Pawan Singh, PGCIL
6. Shri C. Kannan, PGCIL
7. Shri Sanjay Mehrotra, PGCIL
8. Shri R.P. Ojha, PGCIL
9. Shri D. Khandelwal, SE (Comm), MPSEB
10. Shri Deepak Shrivastava, EE, MPSEB

**ORDER  
(DATE OF HEARING:18.3.2003)**

The petitioner has sought approval of the Commission for tariff in respect of the transmission system associated with Gandhar Gas Power Station Stage I for the period from 1.4.2001 to 31.3.2004 based on the terms and conditions of tariff

contained in the Commission's notification dated 26.3.2001 (hereinafter referred to as "the notification dated 26.3.2001").

2. Ministry of Power, vide its letter dated 13.2.1992 had accorded its approval for setting up of Gandhar Gas Power Station Stage I at a cost of Rs.186011 lakh. The investment approval accorded by Ministry of Power included implementation of the transmission system associated with Gandhar Gas Power Station Stage-I at an estimated cost of Rs.20381 lakh. The administrative approval for the transmission system was revised by Ministry of Power under its letter dated 4.1.2000 for a total cost of Rs.24414 lakh.

3. In accordance with the approved implementation schedule, first gas turbine unit of Gandhar Gas Power Station was to be commissioned within a period of 24 months from the date of award of contract for main plant and equipment and subsequent units were to be commissioned at intervals of two months each thereafter. The steam turbine unit was to be commissioned within a period of 42 months after the award of contract. The transmission lines for evacuation of power from Gandhar Gas Power Station were to be commissioned matching with the commissioning of the generating units.

4. The petitioner commenced commercial operation of the assets associated with transmission system from different dates as shown below:

- |     |   |          |
|-----|---|----------|
| (a) | 220 KV Gandhar-Bharuch D/C line with associated bays at Bharuch sub-station | 1.8.1994 |
| (b) | 400 KV Gandhar-Dehgam D/C line with sub-station                             |          |

- at Dehgam 1.6.1995
- (c) 400 KV Gandhar-Padghe S/C line with bays at Padghe sub-station 1.3.1998
- (d) 400 KV Gandhar-Gandhar S/C line 1.6.1998

5. The petitioner, in the present petition, has sought approval for transmission charges for the years 2001-02, 2002-03 and 2003-04 as under:

(Rs. in lakh)

	400 kV Gandhar-Padghe S/C line			400 kV Gandhar-Gandhar S/C line			220 kV Gandhar-Bharuch D/C line and 400 kV Gandhar-Dehgam D/C line		
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
Interest on Loan	443.86	348.54	304.98	22.33	19.80	19.80	362.33	312.34	262.35
Interest on Working Capital	53.93	48.00	48.37	2.60	2.35	2.41	57.93	55.47	55.98
Depreciation	302.58	302.58	302.58	14.71	14.71	14.71	341.01	341.01	341.01
Advance Against Depreciation	267.34	0.00	0.00	12.63	0.00	0.00	148.35	0.00	0.00
Return on Equity	735.12	735.12	735.12	36.48	36.48	36.48	881.10	881.10	881.10
O & M Expenses	126.91	133.69	140.52	4.94	5.20	5.46	224.89	237.43	250.32
<b>Total</b>	<b>1929.74</b>	<b>1567.93</b>	<b>1531.57</b>	<b>93.69</b>	<b>78.54</b>	<b>78.86</b>	<b>2015.61</b>	<b>1827.35</b>	<b>1790.76</b>

6. The petitioner has submitted the following details in support of its claim for interest on working capital:

(Rs. in lakh)

	400 kV Gandhar-Padghe S/C line			400 kV Gandhar-Gandhar S/C line			220 kV Gandhar-Bharuch D/C line and 400 kV Gandhar-Dehgam D/C line		
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
Spares	136.74	144.94	153.64	6.55	6.94	7.36	149.05	157.99	167.47
O & M expenses	10.58	11.14	11.71	0.41	0.43	0.46	18.74	19.79	20.86
Receivables	321.62	261.32	255.26	15.61	13.09	13.14	335.93	304.56	298.46
Total	468.94	417.40	420.61	22.57	20.46	20.96	503.72	482.34	486.79
Rate of Interest	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%
<b>Interest</b>	<b>53.93</b>	<b>48.00</b>	<b>48.37</b>	<b>2.60</b>	<b>2.35</b>	<b>2.41</b>	<b>57.93</b>	<b>55.47</b>	<b>55.98</b>

### **CAPITAL COST**

7. As laid down in the notification dated 26.3.2001, the project cost as approved by CEA or an appropriate independent agency, other than Board of Directors of the generating company, as the case may be, shall be the basis for computation of tariff. The capital cost shall include capitalised initial spares for the first 5 years of operation. The notification dated 26.3.2001 further provides that the actual capital expenditure incurred on completion of the project shall be the criterion for fixation of tariff. Where the actual expenditure exceeds the approved project cost, the excesses as approved by the Authority or an appropriate independent agency, as the case may be, shall be deemed to be the actual capital expenditure for the purpose of determining the tariff, provided that excess expenditure is not attributable to the petitioner or its suppliers or contractors. This is subject to the condition that where a transmission services agreement entered into between the Transmission Utility and the beneficiary provides a ceiling on capital expenditure, the capital expenditure shall not exceed such ceiling.

8. Respondent 1 has pointed out that there was a sudden increase in the cost of project from Rs.20301 lakh approved initially to Rs.24414 lakh approved by Ministry of Power on 4.1.2000 though there is comparative reduction in line length as per original approval and as completed by the petitioner. According to respondent No.1 this should be subjected to detailed examination.

9. The issue of capital cost was examined by the Commission in Petition No.108/2000 for determining tariff for the period up to 31.3.2001 in respect of the different lines of the transmission system approved by the Commission in its order of 12.8.2002. In that petition the petitioner had indicated that as against an approved (Revised) cost of Rs.2441.4 lakhs, the project was completed at a cost of Rs.23,734.14 lakh. The Commission, in that petition, admitted a capital cost of Rs.23784.14 lakh as under for the purpose of tariff determination:

(Rs in lakh)

Name of the Element	Actual capital cost	Admitted capital cost
400 kV Gandhar – Padghe S/C line	11433.51	11433.51
400 kV Gandhar – Gandhar S/C line	555.97	555.97
220 kV Gandhar – Bharuch D/C line	436.00	436.00
400 kV Gandhar – Dehgam D/C line	11308.66	11308.66
<b>Total</b>	<b>23734.14</b>	<b>23734.14</b>

10. The respondents have not brought any new facts or specific numbers in respect of the capital cost. The capital expenditure of Rs.299979414 lakh up to 31.3.2001 already considered by the Commission in petition No.108/2000, has, therefore, been adopted as the capital base as on 1.4.2001.

### **ADDITIONAL CAPITALISATION**

11. The notification dated 26.3.2001 provides that tariff revisions during the tariff period on account of capital expenditure within the approved project cost incurred during the tariff period may be entertained by the Commission only if such expenditure exceeds 20% of the approved cost. In all cases, where such expenditure is less than 20%, tariff revision shall be considered in the next tariff period.

12. The petitioner has not claimed any additional capital expenditure for the period on or after 01.4.2001 in the petition. Accordingly, the additional capitalisation has not been considered.

### **EXTRA RUPEE LIABILITY**

13. The notification dated 26.3.2001 provides that

- (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.

14. The petitioner has not claimed FERV as no foreign loan is involved. Accordingly, extra rupee liability on account of foreign loan has not been considered.

#### **SOURCES OF FINANCING. DEBT – EQUITY RATIO**

15. As per clause 4.3 of the notification dated 26.3.2001, capital expenditure of the transmission system shall be financed as per approved financial package set out in the techno-economic clearance of CEA or as approved by an appropriate independent agency, as the case may be. The petitioner has claimed tariff by taking actual debt and equity admitted by the Commission while approving tariff for the previous tariff setting. It is pointed out on behalf of the respondents that taking debt and equity as claimed by the petitioner will result into higher return on equity (ROE). The respondents have submitted that equity of 20% or 30% should be considered for the purpose of fixation of tariff. This issue has been deliberated in detail in order dated 12.8.2002 in petition No.108/2004 and passed a revised order as to why normative debt Equity ratio has been considered for assets commissioned before 1.4.1997 and on actual basis for assets commissioned after 1.4.1997. The respondents have not brought in any new points or facts in the present petition. The same debt-equity ratio, as considered by the Commission in its order dated 12.8.2002 has been maintained

for determination of tariff in the present petition. Necessary details in this regard are extracted from order dt.12.8.2002, below:

Name of the Element	Debt-Equity ratio as per previous tariff period	Debt-Equity ratio considered in current tariff period
400 kV Gandhar –Padghe S/C line	59.82:40.18	59.82:40.18
400 kV Gandhar – Gandhar S/C line	59:41	59:41
220 kV Gandhar –Bharuch D/C line	50:50	50:50
400 kV Gandhar –Dehgam D/C line	50:50	

### **INTEREST ON LOAN**

16. As per clause 4.4(a) of the notification dated 26.3.2001, Interest on loan capital shall be computed on the outstanding loans, duly taking into account the schedule of repayment, as per the financial package approved by CEA or any independent agency. They have also taken depreciation as repayment for the purpose of calculating interest on loan.

17. The petitioner has claimed interest on loan by taking the closing balance of the loans as on 31.3.2001 as was admitted by the Commission for the previous tariff setting.

18. It is observed that in case of Grid Bond-I loan applicable to 400 kV Gandhar-Padghe S/C line and 400 kV Gandhar-Gandhar S/C line, the details furnished earlier in Petition No 108/2000 and the present petition are at variance. The petitioner had



claimed interest on loan in Petition No 108/2000 by indicating repayment of Grid Bond-I loan during March 2002 and accordingly no repayment was considered while approving tariff for the period ending 31.3.2001. However, in present petition, part repayment of loan has been shown prior to 31.3.2001. The outstanding amount shown as on 31.3.2001 indicated in present petition is in agreement with the corresponding outstanding amount shown in loan allocation details submitted by the petitioner in its affidavits dated 5.2.2003, 26.3.2003 and 30.4.2003 filed in the present proceedings. The position gets clarified from the comparative details given in the table below.

(Rs in lakh)

Name of the Element	As per petition 108/2000			As per loan allocation details			As per petition 74/2002		
	Rate of Interest	13.92%		9%			9%		
	Opening balance as on the date of commercial operation	Repayment up to 31.3.2001	Closing balance as on 31.3.2001	Gross loan allocated	Repayment up to 31.3.2001	Closing balance as on 31.3.2001	Opening balance as on the date of commercial operation	Repayment up to 31.3.2001	Closing balance as on 31.3.2001
400 kV Gandhar –Padghe S/C line with associated bays	121.00	0.00	121.00	62.26	0.00	62.26	121.00	58.74	62.26
400 kV Gandhar – Gandhar S/C line	6.00	0.00	6.00	3.09	0.00	3.09	6.00	2.91	3.09
220 kV Gandhar –Bharuch D/C line	5.00	0.00	5.00	64.32 @	0.00	64.32	Not available		64.32
400 kV Gandhar –Dehgam D/C line	120.00	0.00	120.00						

@ Combined for both the transmission lines.

19. Interest on loan has been allowed by considering the details of repayment of loan submitted in present petition. Further, in the calculation, for working out the interest on loan, the repayment for the years 2001-2002 to 2003-2004 and rate of interest etc. of the above loan have been worked out from the loan details submitted by the petitioner in its affidavits dated 5.2.2003, 26.3.2003 and 30.4.2003. Loan

details of Grid Bond II and UTI loan have been considered based on the order dated 12.8.2002 in petition No 108/2000.

20. In our calculation, the interest in respect of 400 kV Gandhar-Padghe S/C line and 400 kV Gandhar-Gandhar S/C line has been worked out on actual basis. The details of calculations are contained in the table appended below.

### Calculation of Rate of Interest

(Rs in lakh)

	400 kV Gandhar –Padghe S/C line			400 kV Gandhar – Gandhar S/C line		
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
No. of days in the year	365	365	366	365	365	366
<b>GOI Loan</b>						
Gross Loan -Opening	2723.00	2723.00	2723.00	132.00	132.00	132.00
Cumulative Repayment upto Previous Year	272.30	544.60	816.90	0.00	0.00	0.00
Net Loan-Opening	2450.70	2178.40	1906.10	132.00	132.00	132.00
Repayment during the year	272.30	272.30	272.30	0.00	0.00	13.20
Net Loan-Closing	2178.40	1906.10	1633.80	132.00	132.00	118.80
Rate of Interest	16.00%	16.00%	16.00%	15.00%	15.00%	15.00%
Interest	390.08	346.51	302.95	19.80	19.80	19.72
Repayment Schedule	Annual instalments 15.03.2002, 15.03.2003 & 15.03.2004			Annual instalments commencing from 17.03.2004		
<b>Grid Bond-I (Issue-III)</b>						
Gross Loan -Opening	121.00	121.00	121.00	6.00	6.00	6.00
Cumulative Repayment upto Previous Year	58.74	121.00	121.00	2.91	6.00	6.00
Net Loan-Opening	62.26	0.00	0.00	3.09	0.00	0.00
Repayment during the year	62.26	0.00	0.00	3.09	0.00	0.00
Net Loan-Closing	0.00	0.00	0.00	0.00	0.00	0.00
Rate of Interest	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%
Interest	5.27	0.00	0.00	0.26	0.00	0.00
Repayment Schedule	10.03.2002			10.03.2002		
<b>Bond-II</b>						
Gross Loan -Opening	2061.00	2061.00	2061.00	96.00	96.00	96.00
Cumulative Repayment upto	2061.00	2061.00	2061.00	96.00	96.00	96.00

Previous Year						
Net Loan-Opening	0.00	0.00	0.00	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00	0.00	0.00	0.00
Net Loan-Closing	0.00	0.00	0.00	0.00	0.00	0.00
Rate of Interest	14.78%	14.78%	14.78%	14.78%	14.78%	14.78%
Interest	0.00	0.00	0.00	0.00	0.00	0.00
Repayment Schedule	Repaid before 31.03.2001		Repaid before 31.03.2001			
<b>UTI</b>						
Gross Loan -Opening	1236.00	1236.00	1236.00	60.00	60.00	60.00
Cumulative Repayment upto Previous Year	1236.00	1236.00	1236.00	60.00	60.00	60.00
Net Loan-Opening	0.00	0.00	0.00	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00	0.00	0.00	0.00
Net Loan-Closing	0.00	0.00	0.00	0.00	0.00	0.00
Rate of Interest	16.70%	16.70%	16.70%	16.70%	16.70%	16.70%
Interest	0.00	0.00	0.00	0.00	0.00	0.00
Repayment Schedule	Repaid before 31.03.2001		Repaid before 31.03.2001			
<b>Bond-III Series (IInd)</b>						
Gross Loan -Opening	601.72	601.72	601.72	29.31	29.31	29.31
Cumulative Repayment upto Previous Year	0.00	601.72	601.72	0.00	29.31	29.31
Net Loan-Opening	601.72	0.00	0.00	29.31	0.00	0.00
Repayment during the year	601.72	0.00	0.00	29.31	0.00	0.00
Net Loan-Closing	0.00	0.00	0.00	0.00	0.00	0.00
Rate of Interest	9.75%	9.75%	9.75%	9.75%	9.75%	9.75%
Interest	33.75	0.00	0.00	1.64	0.00	0.00
Repayment Schedule	Bullet on 28.10.2001		Bullet on 28.10.2001			
<b>Bond-III Series (Ist)</b>						
Gross Loan -Opening	96.28	96.28	96.28	4.69	4.69	4.69
Cumulative Repayment upto Previous Year	0.00	96.28	96.28	0.00	4.69	4.69
Net Loan-Opening	96.28	0.00	0.00	4.69	0.00	0.00
Repayment during the year	96.28	0.00	0.00	4.69	0.00	0.00
Net Loan-Closing	0.00	0.00	0.00	0.00	0.00	0.00
Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%	13.50%
Interest	11.86	0.00	0.00	0.58	0.00	0.00
Repayment Schedule	Bullet on 28.02.2002		Bullet on 28.02.2002			
<b>Total Loan</b>						
Gross Loan -Opening	6839.00	6839.00	6839.00	328.00	328.00	328.00
Cumulative Repayment upto Previous Year	3628.04	4660.60	4932.90	158.91	196.00	196.00
Net Loan-Opening	3210.96	2178.40	1906.10	169.09	132.00	132.00
Repayment during the year	1032.56	272.30	272.30	37.09	0.00	13.20

Net Loan-Closing	2178.40	1906.10	1633.80	132.00	132.00	118.80
Interest	440.96	346.51	302.95	22.28	19.80	19.72

21. The interest on notional loan for 220 kV Gandhar-Bharuch D/C line and 400 kV Gandhar-Dehgam D/C line has been worked in the manner indicated below:

- (i) Closing balance of notional loan as on 31.3.2001 taken as opening balance as on 1.4.2001.
- (ii) Repayment of loan during the year is worked out by considering the actual repayment during the year or as per the formula given below, whichever is higher:

Actual repayment during the year x notional net loan at the beginning of the year / actual net loan at the beginning of the year,

- (iii) On the basis of actual rate of interest on actual average loan, the weighted rate of interest on loan has been worked out and the same is applied on the notional average loan during the year to arrive at the interest on loan.

22. The detailed calculations in support of notional loan and weighted average rate of interest for 220 kV Gandhar-Bharuch D/C line and 400 kV Gandhar-Dehgam D/C line are appended below:

(Rs in lakh)			
Details of Loan	2001-02	2002-03	2003-04
<b>GOI Loan</b>			
Gross Loan -Opening	2797.00	2797.00	2797.00
Cumulative Repayment upto Previous Year	159.50	436.50	713.50
Net Loan-Opening	2637.50	2360.50	2083.50
Repayment during the year	277.00	277.00	279.70
Net Loan-Closing	2360.50	2083.50	1803.80

Average Loan	2499.00	2222.00	1943.65
Rate of Interest	15.99%	15.99%	15.99%
Interest	399.57	355.25	310.73
Repayment Schedule	Mentioned separately at respective Govt. of India loan calculations		
<b>Grid Bond-I (Issue-III)</b>			
Gross Loan -Opening	125.00	125.00	125.00
Cumulative Repayment upto Previous Year	60.68	125.00	125.00
Net Loan-Opening	64.32	0.00	0.00
Repayment during the year	64.32	0.00	0.00
Net Loan-Closing	0.00	0.00	0.00
Average Loan	32.16	0.00	0.00
Rate of Interest	9.00%	9.00%	9.00%
Interest	2.89	0.00	0.00
Repayment Schedule	10.03.2002		
<b>Bond-II</b>			
Gross Loan -Opening	2118.00	2118.00	2118.00
Cumulative Repayment upto Previous Year	2118.00	2118.00	2118.00
Net Loan-Opening	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	0.00	0.00	0.00
Average Loan	0.00	0.00	0.00
Rate of Interest	14.78%	14.78%	14.78%
Interest	0.00	0.00	0.00
Repayment Schedule	Repaid before 31.03.2001		
<b>UTI</b>			
Gross Loan -Opening	1269.00	1269.00	1269.00
Cumulative Repayment upto Previous Year	1269.00	1269.00	1269.00
Net Loan-Opening	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	0.00	0.00	0.00
Average Loan	0.00	0.00	0.00
Rate of Interest	16.70%	16.70%	16.70%
Interest	0.00	0.00	0.00
Repayment Schedule	Repaid before 31.03.2001		
<b>Bond-III Series (IInd)</b>			
Gross Loan -Opening	617.24	617.24	617.24

Cumulative Repayment upto Previous Year	0.00	617.24	617.24
Net Loan-Opening	617.24	0.00	0.00
Repayment during the year	617.24	0.00	0.00
Net Loan-Closing	0.00	0.00	0.00
Average Loan	308.62	0.00	0.00
Rate of Interest	9.75%	9.75%	9.75%
Interest	30.09	0.00	0.00
Repayment Schedule	28.10.2001		
<b>Bond-III Series (Ist)</b>			
Gross Loan -Opening	98.76	98.76	98.76
Cumulative Repayment upto Previous Year	0.00	98.76	98.76
Net Loan-Opening	98.76	0.00	0.00
Repayment during the year	98.76	0.00	0.00
Net Loan-Closing	0.00	0.00	0.00
Average Loan	49.38	0.00	0.00
Rate of Interest	13.50%	13.50%	13.50%
Interest	6.67	0.00	0.00
Repayment Schedule	28.02.2002		
<b>Total Loan</b>			
Gross Loan -Opening	7025.00	7025.00	7025.00
Cumulative Repayment upto Previous Year	3607.18	4664.50	4941.50
Net Loan-Opening	3417.82	2360.50	2083.50
Repayment during the year	1057.32	277.00	279.70
Net Loan-Closing	2360.50	2083.50	1803.80
Average Loan	2889.16	2222.00	1943.65
Rate of Interest	15.2024%	15.9878%	15.9868%
Interest	439.22	355.25	310.73

23. On the basis of above details, interest on loan has been worked out as under:

(Rs. in lakh)

	400 kV Gandhar-Padghe S/C line			400 kV Gandhar-Gandhar S/C line			220 kV Gandhar-Bharuch D/C line and 400 kV Gandhar-Dehgam D/C line		
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
Gross Loan - Opening	6839.00	6839.00	6839.00	328.00	328.00	328.00	5503.32	5503.32	5503.32
Cumulative Repayment up to Previous Year	3628.04	4660.60	4932.90	158.91	196.00	196.00	2857.66	3914.98	4191.98
Net Loan-Opening	3210.96	2178.40	1906.10	169.09	132.00	132.00	2645.66	1588.34	1311.34

Repayment during the year	1032.56	272.30	272.30	37.09	0.00	13.20	1057.32	277.00	279.70
Net Loan-Closing	2178.40	1906.10	1633.80	132.00	132.00	118.80	1588.34	1311.34	1031.64
Average Loan							2117.00	1449.84	1171.49
Rate of Interest							15.2024%	15.9878%	15.9868%
<b>Interest</b>	<b>440.96</b>	<b>346.51</b>	<b>302.95</b>	<b>22.28</b>	<b>19.80</b>	<b>19.72</b>	<b>321.83</b>	<b>231.80</b>	<b>187.28</b>

24. The reasons for difference in interest on loan is on account of following reasons:

- i) The calculation in the petition is based on monthly computation, whereas the Commission Computation are on number of days;
- ii) The petitioner has considered depreciation as repayment while the Commission has considered the repayment schedule with necessary adjustment as indicated in para 21.
- iii) In case of 220 kV Gandhar-Bharuch D/C line and 400 kV Gandhar-Dehgam D/C line, the variation in interest on loan allowed is on account of the fact that the weighted average rate of interest of 14.66% has been allowed against 15.2024%, 15.9878% and 15.9868% claimed in the petition for the years 2001-02, 2002-03 and 2003-04 respectively.

### **DEPRECIATION**

25. With regard to depreciation, para 4(b) of the notification dated 26.3.2001 provides:

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

- (ii) Depreciation shall be calculated annually as per straight-line method at the rate of depreciation as prescribed in the Schedule attached to the notification.

Provided that the total depreciation during the life of the project shall not exceed 90% of the approved Original Cost. The approved original cost shall include additional capitalisation on account of foreign exchange rate variation also.

- (iv) On repayment of entire loan, the remaining depreciable value shall be spread over the balance useful life of the asset.
- (v) 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.
- (vi) Depreciation against assets relating to environmental protection shall be allowed on case-to-case basis at the time of fixation of tariff subject to the condition that the environmental standards as prescribed have been complied with during the previous tariff period.

26. The petitioner has claimed the depreciation on the capital expenditure in accordance with above principles.

27. Based on the above provisions of the notification dated 26.3.2001, the depreciation for individual items of capital expenditure has been calculated on the capital cost for each of the assets given at para 9 above at the rates as prescribed in



the notification dated 26.3.2001. While approving depreciation component of tariff, the weighted average depreciation rate has been worked out. For working out cumulative depreciation, the depreciation as per considered by Ministry of Power for the previous tariff setting has been taken into consideration. The break up of the capital cost has been considered as per the details furnished by the petitioner. The calculations in support of depreciation allowed are appended hereinbelow:

(Rs. in lakh)

	400 kV Gandhar-Padghe S/C line			400 kV Gandhar-Gandhar S/C line			220 kV Gandhar-Bharuch D/C line and 400 kV Gandhar-Dehgam D/C line					
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04			
Rate of Depreciation	2.65%			2.64%			2.90%					
Depreciable Value	10290.16			500.37			10570.19					
Balance Useful life of the asset												
Remaining Depreciable Value		8417.35	7847.43	7544.85	439.89	412.56	397.86	6974.50	6515.89	6174.89		
<b>Depreciation</b>		<b>302.58</b>	<b>302.58</b>	<b>302.58</b>		<b>14.70</b>	<b>14.70</b>	<b>14.70</b>		<b>341.01</b>	<b>341.01</b>	<b>341.01</b>

### **ADVANCE AGAINST DEPRECIATION**

28. In addition to allowable depreciation, the petitioner becomes entitled to Advance Against Depreciation when originally scheduled loan repayment exceeds the depreciation allowable as per schedule to the notification dated 26.3.2001. Advance Against Depreciation is computed in accordance with the following formula:

AAD = Originally scheduled loan repayment amount subject to a ceiling of 1/12<sup>th</sup> of original loan amount minus depreciation as per schedule.

29. The petitioner has claimed Advance Against Depreciation

30. For working out Advance Against Depreciation, 1/12<sup>th</sup> of the notional loan has been considered while repayment of loan as worked out above has been taken as repayment of the loan during the year. The petitioner is entitled to Advance Against Depreciation as calculated below:

(Rs. in lakh)

	400 kV Gandhar-Padghe S/C line			400 kV Gandhar-Gandhar S/C line			220 kV Gandhar-Bharuch D/C line and 400 kV Gandhar-Dehgam D/C line		
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
1/12th of Gross Loan(s)	569.92	569.92	569.92	27.33	27.33	27.33	458.61	458.61	458.61
Scheduled Repayment of the Loan(s)	1032.56	272.30	272.30	37.09	0.00	13.20	1057.32	277.00	279.70
Minimum of the above	569.92	272.30	272.30	27.33	0.00	13.20	458.61	277.00	279.70
Depreciation during the year	302.58	302.58	302.58	14.70	14.70	14.70	341.01	341.01	341.01
Advance against Depreciation	267.34	0.00	0.00	12.63	0.00	0.00	117.60	0.00	0.00

31. Advance Against Depreciation has been worked out by taking 1/12<sup>th</sup> of gross loan from 50% of the gross block claimed in the petition against 50% of Net Fixed Assets as on 1.4.1997 considered by the petitioner. In the case of Gandhar-Bharuch 220 KV D/C line and Gandhar-Dahga 400 KV D/C line, the advance against depreciation allowed by the Commission is lower than one claim on account of the

fact that the petitioner has based his claim on actual loan and repayment whereas the Commission has allowed the claim on notional loan and notional repayment.

### **OPERATION & MAINTENANCE EXPENSES**

32. In accordance with the notification dated 26.3.2001, Operation and Maintenance expenses, including expenses on insurance, if any, are to be calculated as under:

- i) Where O&M expenses, excluding abnormal O&M expenses, if any, on sub-station (OMS) and line (OML) are separately available for each region, these shall be normalised by dividing them by number of bays and line length respectively. Where data as aforesaid is not available, O&M expenses in the region are to be apportioned to the sub-station and lines on the basis of 30:70 ratio and these are to be normalised as below:

$$\text{O\&M expenses per Unit of the line length in Kms (OMLL)} = \frac{\text{Expenses for lines (OML)}}{\text{Average line length in Kms (LL)}}$$

$$\text{O\&M expenses for sub-stations (OMBN)} = \frac{\text{O\&M expenses for substations (OMB)}}{\text{Average number of bays (BN)}}$$

- ii) The five years average of the normalised O&M expenses for lines and for bays for the period 1995-96 to 1999-2000 is to be escalated at 10% per annum for two years (1998-99 and 1999-2000) to arrive at normative O&M expenses per unit of line length and per bay for 1999-2000.

- iii) The normative O&M per unit length and normative O&M per bay for the year 1999-2000 for the region derived in the preceding paragraph is to be escalated @ 6% per annum to obtain normative values of O&M expenses per unit per line length and per bay in the relevant year. These normative values are to be multiplied by line length and number of bays (as the case may be) in a given system in that year to compute permissible O&M expenses for the system.
- iv) The escalation factor of 6% per annum is to be used to revise normative base figure of O&M expenses. Any deviation of the escalation factor computed from the actual inflation data that lies within 20% of the notified escalation factor of 6% shall be absorbed by utilities/beneficiaries.

33. The different elements of Operation & Maintenance expenses have been considered in the succeeding paragraphs in the light of provisions of the notification dated 26.3.2001 based on the data available since 1995-96.

### **Employee Cost**

34. The petitioner has, inter alia, claimed incentive and *ex gratia* as a part of employee cost. The petitioner was asked to specify the amount of minimum statutory bonus paid to its employees under the Payment of Bonus Act. The petitioner vide its affidavit dated 6.2.2003 has stated that the incentive paid to employees does not include minimum statutory bonus. The petitioner has further stated that the *ex gratia* was being paid in lieu of bonus, as is customary and a normal practice followed in

private and public sectors. The petitioner has also furnished a write-up on Incentive scheme in support of the claim. It has been clarified on behalf of the petitioner that even the top management of the petitioner company is paid incentive and *ex gratia* included as a part of employee cost in O&M expenses claimed. The payment of incentive other than the statutory minimum bonus is at the discretion of the petitioner company and should be borne out of its profits or incentive earned from the respondents for higher availability of the Transmission System. We find in the submission of the respondents. Accordingly, the incentive and *ex gratia* payments made by the petitioner to its employees have been kept out of consideration for calculation of employee cost.

35. The petitioner was directed to furnish details of the arrears on account of pay and allowances for the period prior to 1995-96, but paid between 1995-96 to 1999-2000. The petitioner has submitted the details of such arrears, amounting to Rs. 19.98 lakh and Rs 37.32 lakh paid in respect of the Western Region during 1995-96 and 1996-97. Similarly, the arrears for the previous years included in the employee cost for 1995-96 and 1996-97 for Corporate Office were stated to be Rs. 9.61 lakh and Rs. 35.60 lakh. The petitioner has also submitted that the arrears on account of pay revision from 01.01.97 to 31.03.2000 have been paid during the years 2000-01 and 2001-02 also. The amounts of these arrears as claimed by the petitioner are Rs. 115.14 lakh and Rs. 86.86 lakh for Western Region and Rs. 297.13 lakh & Rs. 109.95 lakh for the Corporate Office for the years 2000-01 and 2001-02 respectively. The petitioner has prayed that the arrears on account of pay and allowances for the period prior to 1995-96 should be deducted while those pertaining to the period from 1995-96

to 1999-2000 but paid subsequent to 1999-2000 should be added to O&M charges. The petitioner has argued that since these pay arrears pertain to the period being considered for fixation of normative O&M, the arrears should be considered while fixing the normative O&M. No submission was made by the respondents in this regard. We find the submission of the petitioner to be logical and have considered the submission in the calculation of employee cost.

### **Repair & Maintenance Expenses**

36. The petitioner has submitted that the increase of 160.84 % in Repair & Maintenance expenses in 1997-98 (Rs 451.01 lakh) over the previous year (Rs 172.91 lakh) is due to overhauling of circuit breaker at Bhilai and pile foundation works at Kawas and Kakrapar transmission system. Major repair is not a regular phenomenon and hence expenses on this account have to be excluded from the process of normalisation. Therefore, repair and maintenance expenses in 1997-98 have been limited to Rs 207.49 lakhs (20% over and above the repair and maintenance expenses for the year 1996-97) for the purpose of normalisation. In the next year, that is, 1998-99, the petitioner has claimed even higher Repair and Maintenance expenses (Rs 539.84 lakhs) than in 1997-98. Thus, the repair and maintenance expenses in 1998-99 are also substantially high. Hence, in this year also the increase has been limited to Rs 248.99 lakhs (20% over the expenses considered for normalisation in the previous year, 1997-98) for the purpose of normalisation. The abnormal increase of repair and maintenance expenses during 1997-98 and 1998-99 is evident from the O&M expenses of Rs. 304.10 lakh for the subsequent year, 1999-2000. However, if any major repairs are undertaken during the tariff period covered by

this order, the petitioner may approach the Commission with proper justification to claim the actual expenses as a part of O&M expenses.

### **Power Charges**

37. In case of Corporate Office, the power charges as claimed by the petitioner have been considered in the calculation of O&M expenses. In case of Western Regional Transmission System (WRTS) the petitioner was asked to submit break up of power charges between substation facilities and residential colonies. The petitioner vide affidavit dated 12<sup>th</sup> February 2003 has submitted the break up. Since, power charges for residential quarters in the colony should be recovered from the employees, such charges amounting to Rs 32.42 lakh, Rs 52.04 lakh, Rs 69.46 lakh, Rs 83.28 lakh and Rs 84.6 lakh for the five years from 1995-96 to 1999-2000 have been deducted from the total power charges claimed by the petitioner.

### **Insurance**

38. It has been noted that the petitioner has a policy of self-insurance for which it has created the insurance reserve. The insurance charges claimed by the petitioner are credited to the insurance reserve. The petitioner was directed to furnish the management policy on creation of insurance reserve, items of loss secured and the conditions thereto. The petitioner has submitted insurance policy of the petitioner company under affidavit dated 6.2.2003. The key features of the policy submitted by the petitioner are as under:

- (a) Insurance reserve is created @ 0.1% on gross value of fixed assets at the close of the year, to meet the future losses arising from uninsured

risks, except machinery breakdown for valve hall of HVDC, and fire risk of HVDC equipment and SVC sub-stations.

- (b) The policy generally covers following:
- (i) Fire, lightning, explosion/implosion, and bush fire
  - (ii) Natural calamity: flood, earthquake, storm, cyclone, typhoon, tempest, hurricane, tornado, subsidence and landslide
  - (iii) Riot, strike/ malicious and terrorist damage
  - (iv) Theft, burglary, Missile testing equipment, impact damage due to rail/ road or animal, aircraft and articles dropped there from.
- (c) The losses of assets caused by the above causes are adjusted against insurance reserve as per the corporation guidelines.
- (d) The amount so set aside in the insurance reserve has not been separately claimed from the respondents and the expenses have been met from the permitted O&M charges under the tariff.

39. The petitioner has stated that the policy of self-insurance has also been followed by NHPC, where 0.5% per annum of the gross block of O&M projects is transferred to self-insurance reserve account. It has also been informed that the rate of 0.1% as booked under O&M expenses towards self-insurance reserve is lower than the insurance premium (0.22%) being charged by the insurance companies for the risks covered in the self-insurance policy. In support of this claim, the petitioner has placed on record a letter from Reliance General Insurance Company quoting for the insurance rate of the assets covered in the self-insurance policy of the petitioner company.



40. In view of the explanation furnished on behalf of the petitioner, the insurance charges as claimed have been considered in O&M expenses. We, however, make it explicit that the self-insurance provided by the petitioner is for replacement of the damaged assets and the beneficiaries shall not be charged anything in case of damage due to any of the events mentioned in the insurance policy.

41. In case of Training & Recruitment expenses, Communication expenses, Traveling, Rent, and Miscellaneous Expenses as claimed by the petitioner have been considered for calculation, both in the case of the WRTS as well as Corporate Office.

#### **Other Expenses**

42. In case of WRTS, following items claimed under 'provision' have not been considered admissible:

- (a) Amount of Rs 15.27 lakh claimed by the petitioner in 1995-96 for loss of stores, amount of Rs 9.06 lakh and Rs 49 lakh in 1995-96 and 1996-97 on account of writing off of advance pending since 1998-99. Since, these items are controllable by the petitioner and reflect the managerial efficiency of the petitioner, the provisions made on this account have not been considered as admissible for reimbursement.
- (b) Amount of Rs 0.11 lakh, Rs. 0.96 lakh and Rs 0.14 lakh as 'others' for the years 1997-98, 1998-99 and 1999-2000. In spite of the direction by the Commission to furnish the items covered in the provisions, the petitioner has lumped some provisions under the head 'others'. In the

absence of details, this amount has not been considered admissible. No subsequent revision on this account would be admissible as sufficient opportunity has been given to the petitioner.

- (c) An amount of Rs. 100.82 lakh has been claimed for restoration of Gujarat Electricity Board lines after cyclone claimed in 1999-2000. During the hearing, the petitioner explained that the job was undertaken at the instance of Ministry of Power who had since directed that the amount be recovered from the beneficiaries through O&M charges. The Commission vide its order dated 21.03.2003 had directed that the entire correspondence exchanged with Ministry of Power on the subject may be placed on record. However, the petitioner vide affidavit dated 03.04.2003 has reiterated earlier statement but has not provided any correspondence in this regard to substantiate its claim. During the hearing, Madhya Pradesh State Electricity Board had stated that this amount should be recovered from Gujarat Electricity Board. The petitioner has also stated that attempts were made to recover this amount from Gujarat Electricity Board but have not yielded the result and hence the petitioner had no option but to include it in O&M expenses. The efforts made by petitioner in the national crisis, though commendable, the expenditure on that account cannot be charged to other beneficiaries. Even otherwise, cyclone etc. are abnormal features and these expenditure on this account cannot be treated as normal. as normal . Hence, this amount has not been considered for the purpose of normalisation.

43. The petitioner has claimed amount of Rs. 188.12 lakhs on account of writing off of TOD meters. The Commission vide its order dated 21.03.2003 had directed the petitioner to confirm that this amount figured in the profit & loss account. The petitioner, vide affidavit dated 03.04.2003 has confirmed the same. Since these meters have become obsolete due to technological changes and also have lost relevance after installation of Special Energy Meters, this amount has been admitted.

44. In case of Corporate Office, the following expenses have not been admitted for reimbursement:

(a) Donation of Rs. 0.05 lakh, Rs. 30 lakh, Rs. 34.78 lakh and Rs. 600.03 lakh for the years 1995-96, 1996-97, 1898-99 and 1999-2000, as these donations are not related to transmission business. The expenditure on account of the donations need be borne by the petitioner out of other profits of the corporation.

(b) Provisions of Rs. 1107.61 lakh, Rs. 385.8 lakh and Rs. 0.27 lakh for the year 1996-97, 1997-98 and 1999-2000. These provisions were made for the loss of stores in Western Region and North Western Region, for bad and doubtful debt in Northern Region and for shortage of store in North Western Region. The petitioner has also stated that provision of loss of store in Western Region (Rs 863.16 lakh in 1996-97) and provision of bad and doubtful debt in Northern Region (Rs 385.80 lakh in 1997-98) were written back during subsequent years in the regional

books of account. In view of this, the petitioner has submitted that these expenses need be considered while fixing the O&M of the respective regions. As all these items are controllable by the petitioner and reflect the managerial efficiency. However, an amount of Rs. 11.14 lakh on account of fire at the corporate office in 1998-99 has been considered as admissible under the head provisions.

- (c) Legal expenses amounting to Rs. 2.65 lakh in the Corporate Office on legal opinion on CERC matters have not been allowed in line with the Commission's policy of allowing only the fees for the petitions filed in the Commission. However, other legal expenses for disputes related to compensation, contracts, service matters and labour cases have been admitted.

### **Recoveries**

45. The details of the recoveries for the WRTS and the Corporate Office were furnished by the petitioner vide affidavit dated 6<sup>th</sup> February 2003. The petitioner in the aforesaid affidavit also furnished the "complete details" of the recoveries for the WRTS. According to the petitioner, the income from sale of bid documents has already been adjusted for under the sub-head Tender Expenses under the head Other Expenses. Hence, income under this sub-head has not been considered in the recovery for WRTS as well as Corporate Office. Similarly, electricity charges recovered/recoverable from employees residential buildings and other residential buildings have not been considered under the head "recovery" as the power charges for colony consumption have been deducted in case of the WRTS.

### **Allocation of Corporate Office Expenses to Various Regions**

46. The petitioner has submitted the method for allocation of Corporate Office expenses to various Regions. The key steps in the apportionment of Corporate Office expenses among the regions are as under:

- i) Expenses booked under Training & Recruitment, Directors sitting fees, provisions, R&D, Write off of fixed assets/ non-operating expenses and donations are considered exclusively as O&M expenses.
- ii) After deducting these exclusive O&M expenses, the balance Corporate Office expenses are allocated in the ratio of Transmission charges to annual Capital outlay to obtain expenses allocated to O&M and construction activity.
- iii) The allocation to O&M activity obtained in step (ii) is added to exclusive O&M expenses obtained in step (i) to arrive at total O&M expenses in the Corporate Office.
- iv) RLDC expenses are then deducted from the total O&M expenses obtained in step (iii) to arrive at O&M expenses allocated to transmission business.
- v) O&M expenses allocated to transmission business are then allocated to various regions in the ratio of their respective transmission charges.

47. The methodology adopted by the petitioner for allocation of Corporate Office O&M expenses has been approved and followed in the calculation of O&M expenses.

The comparative statement of O&M expenses claimed by the petitioner and those allowed and considered for the years 1995-96 to 1999-2000 for the purpose of computation of O&M expenses for the tariff period are given herein below:

**DETAILS OF O&M EXPENSES FOR POWERGRID SYSTEM IN WESTERN REGION**

(Rs. in lakh)

Items	1995-96		1996-97		1997-98		1998-99		1999-2000	
	As per Petitioner	As allowed for	As per Petitioner	As allowed for	As per Petitioner	As allowed for	As per Petitioner	As allowed for	As per Petitioner	As allowed for
Employee Cost	382.32	320.51	462.49	389.89	746.85	749.88	902.00	918.19	1398.13	1241.98
Repair & Maintenance	136.86	136.86	172.91	172.91	451.01	207.49	539.84	248.99	304.10	304.10
Power Charges	121.80	89.38	181.78	129.76	264.59	195.13	453.50	370.22	510.49	425.89
Training & Recruitment	7.88	7.88	9.54	9.54	11.57	11.57	13.29	13.29	11.57	11.57
Communications	36.05	36.05	45.36	45.36	63.54	63.54	70.98	70.98	57.23	57.23
Travelling	94.16	94.16	106.05	106.05	167.95	167.95	209.26	209.26	225.31	225.31
Printing & Stationery	6.18	6.18	7.93	7.93	11.60	11.60	14.93	14.93	16.30	16.30
Rent	3.71	3.71	3.61	3.61	4.05	4.05	3.88	3.88	6.63	6.63
Miscellaneous Expenses	96.08	96.08	110.20	110.20	156.49	156.49	236.05	229.69	243.63	243.63
Insurance	5.25	5.25	7.67	7.67	187.71	187.71	246.86	246.86	291.47	291.47
Others	91.55	67.22	84.45	35.45	77.16	77.05	68.45	67.49	341.11	240.15
Corporate Expenses Allocation	261.52	255.98	188.96	93.00	470.19	405.58	764.75	763.07	1075.12	869.41
<b>TOTAL</b>	<b>1243.36</b>	<b>1119.26</b>	<b>1380.95</b>	<b>1111.37</b>	<b>2612.71</b>	<b>2238.05</b>	<b>3523.79</b>	<b>3156.86</b>	<b>4481.09</b>	<b>3933.67</b>
Less : Recoveries		2.32		4.13		7.93		20.10		28.23
<b>Net O&amp;M Expenses</b>	<b>1243.36</b>	<b>1116.94</b>	<b>1380.95</b>	<b>1107.24</b>	<b>2612.71</b>	<b>2230.12</b>	<b>3523.79</b>	<b>3136.76</b>	<b>4481.09</b>	<b>3905.44</b>

**Method of Normalizing O&M Expenses**

48. The following formulae for calculation of normative O&M expenses as per the notification dated 26.3.2001, as amended vide Central Electricity Regulatory

Commission (Terms and Conditions of Tariff) (Second Amendment) Regulations, 2003 published in the Gazette of India on 2.6.2003 have been followed

$$AVOMLL = \frac{1}{5} \sum_{i = 1995-1996}^{1999-2000} \left| \frac{OML_i}{LL_i} \right|$$

$$AVOMBN = \frac{1}{5} \sum_{i = 1995-1996}^{1999-2000} \left| \frac{OMS_i}{BN_i} \right|$$

Where:

AVOMLL and AVOMBN are average normalized O&M expenses per Ckt. km of line length and per bay respectively.

OML<sub>i</sub> and OMS<sub>i</sub> are O&M expenses for the lines and for the substations for the i<sup>th</sup> year respectively.

LL<sub>i</sub> and BN<sub>i</sub> are the total line length in Ckt. km and total number of bays in the i<sup>th</sup> year respectively.

49. As per the above method, AVOMLL and AVOMBN are calculated based on the data for the years 1995-96 to 1999-2000. These normalised averages correspond to the year 1997-98. After escalating these averages by 10% per annum for two years, the normative O&M expenses for the base year 1999-2000 have been obtained. Normative O&M expenses for subsequent years are obtained by escalating these normative figures by 6% per annum. Following table gives comparison of the normative O&M expenses as calculated by the petitioner and as per our calculations allowed for the base year i.e. 1999-2000 and afterwards:

### NORMALIZED O&M EXPENSES FOR WESTERN REGION

(Rs. in Lakh)

S. NO.	Items	1995-96	1996-97	1997-98	1998-99	1999-2000	Total for five years 95-96 to 99-00	99-00	2000-01	2001-02	2002-03	2003-04
1	Total O&M expenses(Rs. Lakhs)	1116.94	1107.24	2230.12	3136.76	3905.44						
2	Abnormal O&M expenses	0.00	0.00	0.00	0.00	0.00	0.00					
3	Normal O&M expenses (S.No. 1 -S.NO. 2)	1116.94	1107.24	2230.12	3136.76	3905.44						
4	<b>OML</b> (O&M for lines)= 0.7 X S. NO.3	781.86	775.07	1561.08	2195.73	2733.81	<b>8047.55</b>					
5	<b>OMS</b> (O&M for substation) = 0.3XS.NO.3	335.08	332.17	669.03	941.03	1171.63	<b>3448.94</b>					
6	Line length at beginning of the year in Kms.	4520.00	5322.00	5322.00	7668.00	7681.00						
7	Line length added in the year in Kms.	802.00	0.00	2346.00	13.00	1487.00						
8	Line length at end of the year in Kms.	5322.00	5322.00	7668.00	7681.00	9168.00						
9	LL (Average line length in the Region)	4921.00	5322.00	6495.00	7674.50	8424.50	<b>32837.00</b>					
10	NO. of bays at beginning of the year	53	53	54	101	102						
11	NO. of bays added in the year	0	1	47	1	15						
12	NO. of bays at the end of the year	53	54	101	102	117						
13	BN (Average number of bays in the Region)	53.0	53.5	77.5	101.5	109.5	<b>395.00</b>					
14	AVOMLL(OML/LL)	0.16	0.15	0.24	0.29	0.32	1.155					
15	AVOMBN(OMS/BN)	6.32	6.21	8.63	9.27	10.70	41.135					
16	<b>NOMLL(allowable O&amp;M per unit of line length)</b>			<b>0.2311</b>	<b>0.2542</b>	<b>0.2796</b>		<b>0.2796</b>	<b>0.2964</b>	<b>0.3142</b>	<b>0.3330</b>	<b>0.3530</b>
17	<b>NOMBN(Allowable O&amp;M per bay)</b>			<b>8.2269</b>	<b>9.0496</b>	<b>9.9546</b>		<b>9.9546</b>	<b>10.5519</b>	<b>11.1850</b>	<b>11.8561</b>	<b>12.5675</b>
18	<b>NOMLL(as calculated by petitioner)</b>			<b>0.28</b>				<b>0.34</b>	<b>0.36</b>	<b>0.38</b>	<b>0.40</b>	<b>0.41</b>
19	<b>NOMBN(as calculated by petitioner)</b>			<b>10.06</b>				<b>12.17</b>	<b>12.90</b>	<b>13.67</b>	<b>14.49</b>	<b>15.36</b>

**Reason for difference in the normative values calculated by us and by the petitioner**

O&M cost per km.: 85% of the difference is due to deductions of non-prudent expenses, 9% is due to error in formula and 6% is due to round-off errors in the petitioner's calculation.

O&M cost per bay: 85% of the difference is due to deductions of non-prudent expenses and 15% is due to error in formula.



50. The differences in NOMLL and NOMBAN as calculated by the petitioner and as allowed are mainly on account of certain expenses disallowed by us as explained in preceding paragraphs. Using these normative values, O&M charges have been calculated.

51. In our calculations the escalation factor of 6% per annum has been used. In accordance with the notification dated 26.3.2001, if the escalation factor computed from the observed data lies in the range of 4.8% to 7.2%, this variation shall be absorbed by the petitioner. In case of deviation beyond this limit, adjustment shall be made on by applying actual escalation factor arrived at on the basis of weighted price index of CPI for industrial workers (CPI\_IW) and index of selected component of WPI (WPI\_TR).

52. The details of O&M expenses allowed are given hereunder:

	2001-02			2002-03			2003-04		
	Line length in Ckm	No. of bays	O&M expenses (Rs. in lakh)	Line length in Ckm	No. of bays	O&M expenses (Rs. in lakh)	Line length in Ckm	No. of bays	O&M expenses (Rs. in lakh)
400 kV Gandhar - Padghe S/C line	298	1	104.81	298	1	111.10	298	1	117.77
400 kV Gandhar - Gandhar S/C line	13	0	4.08	13	0	4.33	13	0	4.59
220 kV Gandhar - Bharuch D/C line	340	7	185.12	340	7	196.23	340	7	208.00

**RETURN ON EQUITY**

53. In accordance with the notification dated 26.3.2001, the petitioner is entitled to return on equity at the rate of 16% per annum. For the purpose of tariff equity as

considered for the previous tariff setting has been considered. On the above basis, the petitioner shall be entitled to return on equity each year during the tariff period as under:

(Rs in lakh)

Name of the Element	Amount of Equity	Return on Equity
400 kV Gandhar – Padghe S/C line	4594.51	735.12
400 kV Gandhar – Gandhar S/C line	227.97	36.48
220 kV Gandhar – Bharuch D/C line	5503.32	880.53
400 kV Gandhar – Dehgam D/C		

#### **INTEREST ON WORKING CAPITAL**

54. As provided in the notification dated 26.3.2001, the interest on working capital shall cover:

- (a) Operation and maintenance expenses (cash) for one month;
- (b) Maintenance spares at a normative rate of 1% of the capital cost less 1/5<sup>th</sup> of the initial capitalised spares. Cost of maintenance spares for each subsequent year shall be revised at the rate applicable for revision of expenditure on O & M of the transmission system; and
- (c) Receivables equivalent to two months' average billing calculated on normative availability level, which is 98%.

55. In keeping with the methodology prescribed in the notification dated 26.3.2001, working capital has been worked out. In the calculation, maintenance spares for the year 2001-02 to 2003-04 have been worked out on the basis of capital expenditure up

to 31.03.2001 allowed by the Commission earlier, and after deduction of 1/5<sup>th</sup> of the initial capitalised spares therefrom. This has been escalated up to 2000-01 as per respective WPI/CPI and thereafter the same has been further escalated @ 6% per annum for the tariff period 2001-02 to 2003-04. Madhya Pradesh State Electricity Board has pointed out that the amount of initial spares was not specified in the petition. In the calculation, it is considered as 'nil'. The petitioner has claimed interest on working capital at the rate of 11.5%, based on annual SBI PLR for the year 2001-2002, which has been allowed separately by the Commission in certain other petitions and, therefore, the same has been allowed here also despite the objection by Madhya Pradesh State Electricity Board. The detailed calculations in support of interest on Working Capital are as under:

#### Interest on Working Capital

(Rs. In lakh)

	400 kV Gandhar-Padghe S/C line			400 kV Gandhar-Gandhar S/C line			220 kV Gandhar-Bharuch D/C line and 400 kV Gandhar-Dehgam D/C line		
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
Spares	136.75	144.96	153.65	6.55	6.94	7.36	177.92	188.59	199.91
O & M expenses	8.73	9.26	9.81	0.34	0.36	0.38	15.43	16.35	17.33
Receivables	317.34	257.10	251.01	15.46	12.94	12.98	317.47	284.30	278.98
Total	462.82	411.32	414.48	22.35	20.24	20.72	510.82	489.25	496.22
Rate of Interest	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%
Interest	53.22	47.30	47.67	2.57	2.33	2.38	58.74	56.26	57.07

## **TRANSMISSION CHARGES**

56. In the light of above discussion, we approve the transmission charges as given in the Table below:

(Rs. in lakh)

	400 kV Gandhar-Padghe S/C line			400 kV Gandhar-Gandhar S/C line			220 kV Gandhar-Bharuch D/C line and 400 kV Gandhar-Dehgam D/C line		
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
Interest on Loan	440.96	346.51	302.95	22.28	19.80	19.72			
Interest on Working Capital	53.22	47.30	47.67	2.57	2.33	2.38	321.83	231.80	187.28
Depreciation	302.58	302.58	302.58	14.70	14.70	14.70	58.74	56.26	57.07
Advance Against Depreciation	267.34	0.00	0.00	12.63	0.00	0.00	341.01	341.01	341.01
Return on Equity	735.12	735.12	735.12	36.48	36.48	36.48	117.60	0.00	0.00
O & M Expenses	104.81	111.10	117.77	4.08	4.33	4.59	880.53	880.53	880.53
<b>Total</b>	<b>1904.04</b>	<b>1542.62</b>	<b>1506.09</b>	<b>92.75</b>	<b>77.63</b>	<b>77.87</b>	<b>1904.84</b>	<b>1705.82</b>	<b>1673.89</b>

57. In addition to the transmission charges, the petitioner shall be entitled to other charges like Development Surcharge, income tax, incentive, surcharge and other cess and taxes in accordance with the notification dated 26.3.2001, subject to directions if any, of the superior courts. The petitioner shall also be entitled to recovery of filing fee of Rs 2 lakh, which shall be recovered from the respondents in five monthly installments of Rupees forty thousand each and shall be shared by the respondents in the same ratio as other transmission charges. This is subject to confirmation that the amount is not already included in the O&M charges.

58. The petitioner is already billing the respondents on provisional basis in accordance with the Commission's notification dated 4.4.2001 as extended from time

to time. The provisional billing of tariff shall be adjusted in the light of final tariff now approved by us.

59. The transmission charges approved by us shall be included in the regional transmission tariff for Western Region and shall be shared by the regional constituents in accordance with the notification dated 26.3.2001.

60. This order disposes of Petition No.74/2002.

Sd/-  
**(K.N. SINHA)**  
**MEMBER**

Sd/-  
**(ASHOK BASU)**  
**CHAIRMAN**

**New Delhi dated the 30<sup>th</sup> April 2004**