

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Coram:**

- 1. Shri R.Krishnamoorthy, Member**
- 2. Shri V.S.Verma, Member**

**Petition No. 46/2009**

**In the matter of**

Approval of transmission tariff due to additional capitalization incurred during 2006-07 and 2007-08 in respect of Tarapur Transmission System associated with Tarapur Atomic Station Stages 3 & 4 in Western Region for period 2006-09.

**And in the matter of**

Power Grid Corporation of India Limited, Gurgaon

**..Petitioner**

Vs

1. Madhya Pradesh Power Trading Company Ltd., Jabalpur
2. Electricity Deptt., Administration of Daman & Diu, Daman
3. Gujarat Urja Vikas Nigam Ltd., Vadodra
4. Electricity Deptt., Government of Goa, Panaji
5. Electricity Deptt., Administration of Dadra & Nagar Haveli, Silvassa
6. Maharashtra State Electricity Distribution Company Ltd., Mumbai
7. Chhattisgarh State Electricity Board, Raipur
8. Madhya Pradesh Audyogik Kendra Vikas Nigam (Indore) Ltd, Indore
9. Nuclear Power Corporation of India Ltd., Mumbai

**.Respondents**

**The following were present:**

1. Shri U.K. Tyagi, PGCIL
2. Shri S.K.Niranjan, PGCIL
3. Shri M.M.Mandol, PGCIL
4. Shri D. Khandelwal, MPPTCL

**ORDER  
(DATE OF HEARING: 19.5.2009)**

This petition has been filed for revision of transmission tariff for additional capital expenditure incurred during 2006-07 and 2007-08 in respect of Tarapur Transmission System (the transmission system) associated with Tarapur Atomic Power Station Stages 3 & 4 in Western Region for the period from 1.4.2006 to 31.3.2009, based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004, (hereinafter referred to as "the 2004 regulations"). The petitioner has

also prayed for reimbursement of the petition filing fee and other expenditure .in connection with the filing of the petition.

2. The investment approval and expenditure sanction for the transmission system was accorded by the Board of Directors of the petitioner company vide letter dated 22.10.2002 at an estimated cost of Rs. 23702 lakh, which included IDC of Rs. 2176 lakh. Further, approval for the revised cost estimate was accorded by the Board of Directors of the petitioner company under letter dated 17.1.2006 at an estimated cost of Rs. 28587 lakh, including an IDC of Rs. 962 lakh. Details of transmission assets, their date of the commercial operation and apportioned approved cost are as under:

S. No.	Name of the transmission line	Date of commercial operation	Apportioned approved cost (Rs. in lakh)
(i)	400 kV D/C Tarapur-Padghe transmission line circuit-I associated bay at Padghe (Asset-I)	1.3.2005	6715.01
(ii)	400 kV D/C Tarapur-Padghe transmission line circuit-II including associated bay at Padghe, 400 kV D/C Tarapur-Boisar transmission line together with associated bays at 400 kV sub-station at Boisar and LILO of 400 kV D/C Gandhar-Padghe transmission line at Boisar sub-station (Asset-II)	1.8.2005	11107.99
(iii)	220 kV D/C Tarapur-Boisar transmission line with associated 220 kV bays at Boisar sub-station including the auto transformer and LILO of 400 kV D/C Gandhar-Padghe transmission line at Vapi sub-station (Asset-III)	1.9.2005	10764.33

3. The transmission charges for the transmission system were approved by the Commission in its order dated 6.2.2007 in Petition No.135/2006 from the date of commercial operation to 31.3.2009 based on capital cost of Rs. 6563.91 lakh, Rs. 9592.22 lakh and Rs. 8955.73 lakh respectively for Asset-I, Asset-II, and Asset-III, as per audited accounts, after considering additional capital expenditure respectively of Rs. 504.19 lakh, Rs. 401.19 lakh and Rs. 562.61 lakh for the year 2005-06 for the transmission system. The summary of the transmission charges approved by the said order dated 6.2.2007 is extracted hereunder:

(Rs. in lakh)

	Asset-I					Asset-II				Asset-III			
	2004-05	2005-06	2006-07	2007-08	2008-09	2005-06	2006-07	2007-08	2008-09	2005-06	2006-07	2007-08	2008-09
Depreciation	13.38	167.38	174.23	174.23	174.23	169.56	260.59	260.59	260.59	154.41	272.84	272.84	272.84
Interest on Loan	27.81	340.30	340.94	328.28	306.47	343.29	513.66	494.71	465.99	275.38	474.84	455.02	427.62
Return on Equity	15.99	202.49	213.08	213.08	213.08	193.87	299.23	299.23	299.23	161.01	287.83	287.83	287.83
Advance against Depreciation	0.00	0.00	0.00	0.00	262.53	0.00	0.00	0.00	282.52	0.00	0.00	0.00	220.77
Interest on Working Capital	1.63	20.02	20.77	21.00	25.67	22.01	33.83	34.30	39.57	23.47	41.49	42.26	46.80
O & M Expenses	4.07	50.75	52.84	54.87	57.14	127.85	199.55	207.34	215.81	310.48	553.56	575.56	598.69
<b>Total</b>	<b>62.88</b>	<b>780.93</b>	<b>801.85</b>	<b>791.46</b>	<b>1039.12</b>	<b>856.58</b>	<b>1306.87</b>	<b>1296.18</b>	<b>1563.71</b>	<b>924.75</b>	<b>1630.56</b>	<b>1633.51</b>	<b>1854.55</b>

4. The details of capital expenditure of the respective transmission asset from the date of commercial operation to 31.3.2008 are as under:

(Rs in lakh)						
Name of the asset	Expenditure up to the date of commercial operation	Capital expenditure on 1.4.2006	Additional Capitalization during 2006-07	Capital expenditure as on 1.4.2007	Additional Capitalization during 2007-08	Capital expenditure as on 1.4.2008
Asset-I	6059.72	6563.91 (As per order dated 6.2.2007)	75.13	6639.04	0.00	6639.04
Asset-II	9191.03	9592.22 (As per order dated 6.2.2007)	496.16	10088.38	0.00	10088.38
Asset-III	8393.12	8955.73 (As per order dated 6.2.2007)	980.03	9935.76	112.17	10047.93

5. Based on the above additional capital expenditure during 2006-07 and 2007-08, the petitioner has claimed the transmission charges for the years 2006-07 to 2008-09 as under:

	Asset-I			Asset-II			Asset-III		
	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
Depreciation	175.19	176.17	176.17	269.63	278.65	278.65	287.38	303.41	304.91
Interest on Loan	342.81	331.95	309.91	529.27	525.07	495.82	502.63	512.23	485.81
Return on Equity	214.65	216.23	216.23	309.65	320.07	320.07	308.41	331.34	333.70
Advance against Depreciation	0.00	0.00	265.14	0.00	0.00	259.15	0.00	0.00	207.71
Interest on Working Capital	20.84	21.16	25.87	34.44	35.50	40.35	42.58	44.54	48.94
O & M Expenses	52.84	54.87	57.14	199.55	207.34	215.81	553.56	575.56	598.69
<b>Total</b>	<b>806.33</b>	<b>800.38</b>	<b>1050.46</b>	<b>1342.54</b>	<b>1366.63</b>	<b>1609.85</b>	<b>1694.56</b>	<b>1767.08</b>	<b>1979.76</b>

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

(Rs. in lakh)

	Asset-I			Asset-II			Asset-III		
	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
Maintenance Spares	64.55	68.43	72.53	95.59	101.32	107.40	86.87	92.08	97.61
O & M expenses	4.40	4.57	4.76	16.63	17.28	17.98	46.13	47.96	49.89
Receivables	134.39	133.40	175.08	223.76	227.77	268.31	282.43	294.51	329.96
Total	203.34	206.40	252.37	335.98	346.37	393.69	415.43	434.55	477.46
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	<b>20.84</b>	<b>21.16</b>	<b>25.87</b>	<b>34.44</b>	<b>35.50</b>	<b>40.35</b>	<b>42.58</b>	<b>44.54</b>	<b>48.94</b>

7. The reply to the petition has been filed by M.P. Power Trading Company Limited.

### **CAPITAL COST**

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

Asset-I			Asset-II			Asset-III		
Year	Amount (Rs. in lakh)	Nature and details of expenditure	Year	Amount (Rs. in lakh)	Nature and details of expenditure	Year	Amount (Rs. in lakh)	Nature and details of expenditure
2006-07	Transmission line= Rs. 73.69 lakh Sub-station = Rs.1.44 lakh  <b>Total= Rs.75.13 lakh</b>	Balance payments	2006-07	Building and Civil works= Rs. 0.90 lakh  Transmission line=Rs.170.68 lakh  Sub-station = Rs. 242.50 lakh PLCC= Rs. 82.08  <b>Total= Rs. 496.16 lakh</b>	Balance payments	2006-07	Building and Civil works= Rs. 345.07 lakh  Sub-station = Rs.634.96 lakh  <b>Total= Rs. 980.03 lakh</b>	Balance payments
2007-08	-	-	2007-08	-	-	2007-08	Building and Civil works= Rs. 57.52 lakh  Sub-station = Rs.54.65 lakh  <b>Total= Rs. 112.17 lakh</b>	Balance payments

9. It is found that the additional capital expenditure claimed is in respect of balance payments. These are part of the deferred liabilities relating to works/services and are within the original scope of work. Therefore, the additional expenditure sought to be capitalised is allowed under clauses (1) and (2) of Regulation 53 of the 2004 regulations.

### **TOTAL CAPITAL COST**

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

(Rs in lakh)

Name of the asset	Expenditure up to the date of commercial operation	Capital expenditure on 1.4.2006	Additional Capitalization during 2006-07	Capital expenditure as on 1.4.2007	Additional Capitalization during 2007-08	Capital expenditure as on 1.4.2008
Asset-I	6059.72	6563.91	75.13	6639.04	0.00	6639.04
Asset-II	9191.03	9592.22	496.16	10088.38	0.00	10088.38
Asset-III	8393.12	8955.73	980.03	9935.76	112.17	10047.93

### **DEBT- EQUITY RATIO**

11. The petitioner has considered the amount of additional capitalization in the debt-equity ratio of 70:30. This has been found to be in order. Accordingly, for the purpose of tariff, equity considered for the transmission assets is as under:

(Rs. in lakh)

	Equity as on the date of the commercial operation	Notional additional equity during 2005-06	Average equity during 2005-06	Equity as on 1.4.2006	Notional additional equity during 2006-07	Average equity during 2006-07	Equity as on 1.4.2007	Notional additional equity during 2007-08	Average equity for 2006-07	Equity as on 1.4.2008
Asset- I	1370.72	151.26	1446.35	1521.98	22.54	1533.25	1544.52	0	1544.52	1544.52
Asset-II	2017.03	120.36	2077.21	2137.39	148.85	2211.81	2286.24	0	2286.24	2286.24
Asset-III	1887.12	168.78	1971.51	2055.90	294.01	2202.91	2349.91	33.65	2366.74	2383.56

### **RETURN ON EQUITY**

12. As per clause (iii) of Regulation 56 of the 2004 regulations, return on equity shall be computed on the equity base determined in accordance with regulation 54 @ 14% per annum. Equity invested in foreign currency is to be allowed a return in the same currency and the payment on this account is made in Indian Rupees based on the exchange rate prevailing on the due date of billing.

13. Equity as given in the table under para 11 above has been considered. However, tariff for the years 2006-07 and 2007-08 has been allowed pro rata on average equity. Accordingly, return on equity allowed each year is given as under:

(Rs. in lakh)

Name of the asset	Return on equity		
	2006-07	2007-08	2008-09
Asset- I	214.65	216.23	216.23
Asset- II	309.65	320.07	320.07
Asset-III	308.41	331.34	333.70

## **INTEREST ON LOAN**

14. Clause (1) of regulation 56 of the 2004 regulations *inter alia* provides that,-
- (a) Interest on loan capital shall be computed loan wise on the loans arrived at in the manner indicated in regulation 54.
  - (b) The loan outstanding as on 1.4.2004 shall be worked out as the gross loan in accordance with Regulation 54 minus cumulative repayment as admitted by the Commission or any other authority having power to do so, up to 31.3.2004. The repayment for the period 2004-09 shall be worked out on a normative basis.
  - (c) The transmission licensee shall make every effort to re-finance the loan as long as it results in net benefit to the beneficiaries. The costs associated with such re-financing shall be borne by the beneficiaries.
  - (d) The changes to the loan terms and conditions shall be reflected from the date of such re-financing and benefit passed on to the beneficiaries.
  - (e) In case of dispute, any of the parties may approach the Commission with proper application. However, the beneficiaries shall not withhold any payment ordered by the Commission to the transmission licensee during pendency of any dispute relating to re-financing of loan;
  - (f) In case any moratorium period is availed of by the transmission licensee, depreciation provided for in the tariff during the years of moratorium shall be treated as repayment during those years and interest on loan capital shall be calculated accordingly.
  - (g) The transmission licensee shall not make any profit on account of re-financing of loan and interest on loan;
  - (h) The transmission licensee may, at its discretion, swap loans having floating rate of interest with loans having fixed rate of interest, or vice versa, at its own cost and gains or losses as a result of such swapping shall accrue to the transmission licensee:

Provided that the beneficiaries shall be liable to pay interest for the loans initially contracted, whether on floating or fixed rate of interest.”

15. In our calculation the interest on loan has been worked out as detailed below:
- (a) Gross amount of loan, repayment of instalments and rate of interest and weighted average rate of interest on actual loan as per earlier order dated 6.2.2007 in Petition No. 135/2006 have been considered. Bond XIX and XXII have been raised after the date of commercial operation for financing additional capital expenditure during the year 2006-07

(b) The petitioner has submitted that for Asset-III (the date of commercial operation 1.9.2005), the weighted average rate of interest for bridge loan from IOB (from 1.9.2005 to 22.9.2005) and subsequently by Bond XVII from 22.9.2005 has been worked out to 7.24% whereas the same was considered as 7.07% in the order dated 6.2.2007 in Petition No. 135/2006. As such, in the present petition the petitioner has calculated the revised tariff by taking interest rate of 7.24%. As submitted by the petitioner for Asset-III (date of commercial operation 1.9.2005), the weighted average rate of interest for bridge loan from IOB (from 1.9.2005 to 22.9.2005) and subsequently by Bond XVII from 22.9.2005 works out to 7.24% and the same has been considered for the revision of tariff.

(c) Notional loan arising out of additional capitalisation for the years 2006-07 and 2007-08 has been added in loan amount as on 1.4.2006 and 1.4.2007 to arrive at total Notional loans. This adjusted Gross loan is considered as normative loans for tariff calculations.

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

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

(e) Moratorium in repayment of loan has been considered with reference to normative loan and if the normative repayment of loan during the year is less than the depreciation during the year, it has been considered as moratorium and depreciation during the year has been deemed as normative repayment of loan during the year.

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

16. Based on above, year-wise interest on loan has been for 2006-07 to 2008-09 worked out as under:

(Rs. in lakh)

	Asset-I			Asset-II			Asset-III		
	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
Opening Gross Loan	5041.93	5094.52	5094.52	7454.83	7802.15	7802.15	6899.83	7585.85	7664.37
Cumulative Repayment up to Previous Year/date of commercial operation	180.76	355.96	532.14	169.56	439.18	717.83	154.41	441.79	745.20
Net Loan-Opening	4861.17	4738.56	4562.38	7285.27	7362.96	7084.31	6745.42	7144.06	6919.17
Addition due to Additional Capitalisation	52.59	0.00	-	347.31	0.00	-	686.02	78.52	-
Repayment during the year	175.20	176.18	441.32	269.62	278.65	537.80	287.38	303.41	512.63
Net Loan-Closing	4738.56	4562.38	4121.06	7362.96	7084.31	6546.51	7144.06	6919.17	6406.53
Average Loan	4799.87	4650.47	4341.72	7324.12	7223.64	6815.41	6944.74	7031.61	6662.85
Weighted Average Rate of Interest on Loan	7.142%	7.138%	7.14%	7.23%	7.27%	7.27%	7.24%	7.285%	7.29%
Interest	342.81	331.95	309.91	529.27	525.07	495.82	502.63	512.23	485.81

17. The detailed calculations in support of the weighted average rate of interest are contained in Annexure-I, Annexure-II and Annexure-III attached.

### **DEPRECIATION**

18. Sub-clause (a) of clause (ii) of Regulation 56 of the 2004 regulations provides for computation of depreciation in the following manner, namely:

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

(b) Depreciation shall be calculated annually based on straight line method over the useful life of the asset and at the rates prescribed in Appendix II to these regulations. The residual value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the historical capital cost of the asset. Land is not a depreciable asset and its cost shall be excluded from the



capital cost while computing 90% of the historical cost of the asset. The historical capital cost of the asset shall include additional capitalisation on account of Foreign Exchange Rate.

(c) Variation up to 31.3.2004 already allowed by the Central Government/Commission.

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

(e) Depreciation shall be chargeable from the first year of operation. In case of operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

19. Depreciation allowed for the years 2006-07 to 2008-09 has been worked out as below:

	Asset-I			Asset-II			Asset-III		
	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
As on the date of commercial operation	6563.91	6639.04	6639.04	9592.22	10088.38	10088.38	8955.73	9935.76	10047.93
Addition due to Additional Capitalisation	75.13	0.00	-	496.16	0.00	-	980.03	112.17	-
Gross block	6639.04	6639.04	6639.04	10088.38	10088.38	10088.38	9935.76	10047.9	10047.93
Rate of Depreciation	2.6540%	2.6536%	2.6536%	2.7400%	2.7621%	2.7621%	3.0424%	3.0366%	3.0346%
Depreciable Value	5941.33	5975.14	5975.14	8630.93	8854.20	8854.20	7988.10	8479.59	8530.07
Balance useful life of the asset	-	-	-	-	-	-	-	-	-
Remaining Depreciable Value	5760.57	5619.17	5442.99	8461.37	8415.02	8136.37	7833.69	8037.80	7784.86
Depreciation	175.20	176.18	176.18	269.62	278.65	278.65	287.38	303.41	304.92
Cumulative Depreciation/ advance against Depreciation	355.96	532.14	973.46	439.18	717.83	1255.64	441.79	745.20	1257.83

### **ADVANCE AGAINST DEPRECIATION**

20. As per sub-clause (b) of clause (ii) of Regulation 56 of the 2004 regulations, in addition to allowable depreciation, the transmission licensee is entitled to Advance Against Depreciation, computed in the manner given hereunder:

AAD = Loan repayment amount as per regulation 56 (i) subject to a ceiling of 1/10th of loan amount as per regulation 54 minus depreciation as per schedule

21. It is provided that Advance Against Depreciation shall be permitted only if the cumulative repayment up to a particular year exceeds the cumulative depreciation up to that year. It is further provided that Advance Against Depreciation in a year shall be restricted to the extent of difference between cumulative repayment and cumulative depreciation up to that year.

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

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

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

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

(d) In the calculation of Advance Against Depreciation, cumulative depreciation/Advance Against Depreciation up to the preceding year along with the depreciation of the current year have been considered for working out the Advance Against Depreciation. Therefore the figure of cumulative depreciation/ Advance Against Depreciation is different from the figure appearing under the similar head elsewhere in tariff calculations where Advance Against Depreciation for the current year is also included for 90% restriction of the depreciation.

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

(Rs. in lakh)

	Asset-I			Asset-II			Asset-III		
	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
1/10th of Gross Loan(s)	504.19	509.45	509.45	745.48	780.21	780.21	689.98	758.58	766.44
Repayment of the Loan	175.20	176.18	441.32	269.62	278.65	537.80	287.38	303.41	512.63
Minimum of the above	175.20	176.18	441.32	269.62	278.65	537.80	287.38	303.41	512.63
Depreciation during the year	175.20	176.18	176.18	269.62	278.65	278.65	287.38	303.41	304.92
(A) Difference	0.00	0.00	265.15	0.00	0.00	259.15	0.00	0.00	207.72
Cumulative Repayment of the loan	355.96	532.14	973.46	439.18	717.83	1255.64	441.79	745.20	1257.83
Cumulative Depreciation/ Advance against Depreciation	355.96	532.14	708.32	439.18	717.83	996.48	441.79	745.20	1050.12
(B) Difference	0.00	0.00	265.15	0.00	0.00	259.15	0.00	0.00	207.72
Advance against Depreciation	<b>0.00</b>	<b>0.00</b>	<b>265.15</b>	<b>0.00</b>	<b>0.00</b>	<b>259.15</b>	<b>0.00</b>	<b>0.00</b>	<b>207.72</b>
Minimum of (A) and (B)									

### **OPERATION & MAINTENANCE EXPENSES**

24. In accordance with clause (iv) of Regulation 56 the 2004 regulations, the following norms are prescribed for O & M expenses:

	Year				
	2004-05	2005-06	2006-07	2007-08	2008-09
O&M expenses (Rs in lakh per ckt-km)	0.227	0.236	0.246	0.255	0.266
O&M expenses (Rs in lakh per bay)	28.12	29.25	30.42	31.63	32.90

25. O&M expenses as taken for the tariff calculations as per order dated 6.2.2007 in Petition No. 135/2006 have been considered, since line length and number of bays remain unchanged.

### **INTEREST ON WORKING CAPITAL**

26. The components of the working capital and the interest thereon are discussed hereunder:

#### **(i) Maintenance spares**

Regulation 56(v) (1) (b) of the 2004 regulations provides for maintenance spares @ 1% of the historical cost escalated @ 6% per annum from the date of commercial operation. The petitioner has claimed maintenance spares after accounting for additional capital expenditure. TNEB in its reply has urged to retain the cost of

maintenance spare at 1% of the project cost as on the date of commercial operation as already considered for award of tariff.

For the purpose of computation of maintenance spares, the historical cost is being taken as the cost on the date of commercial operation. Maintenance spares on additional capital expenditure are not being considered for the present. Therefore, the petitioner's claim in this regard is not being allowed. Accordingly, maintenance spares have been worked out on the historical cost and providing escalation from the date of commercial operation.

**(ii) O & M expenses**

Regulation 56(v)(1)(a) of the 2004 regulations provides for operation and maintenance expenses for one month as a component of working capital. O&M expenses as considered in the order dated 6.2.2007 in Petition No. 135/2006 have been considered.

**(iii) Receivables**

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

**(iv) Rate of interest on working capital**

As per Regulation 56(v) (2) of the 2004 regulations, rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on 1.4.2004 or on 1st April of the year in which the project or part thereof (as the case may be) is declared under commercial operation, whichever is later. The interest on working capital is payable on normative basis notwithstanding that the transmission licensee has not taken

working capital loan from any outside agency. The petitioner has claimed interest on working capital @ 10.25% based on SBI PLR as on 1.4.2005, which is in accordance with the 2004 regulations and has been allowed.

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

(Rs. in lakh)

	Asset-I			Asset-II			Asset-III		
	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
Maintenance Spares	64.55	68.43	72.53	95.59	101.32	107.40	86.87	92.08	97.61
O & M expenses	4.40	4.57	4.76	16.63	17.28	17.98	46.13	47.96	49.89
Receivables	134.39	133.40	175.08	223.76	227.77	268.31	282.43	294.51	329.96
Total	203.35	206.40	252.37	335.97	346.37	393.69	415.43	434.56	477.46
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	<b>20.84</b>	<b>21.16</b>	<b>25.87</b>	<b>34.44</b>	<b>35.50</b>	<b>40.35</b>	<b>42.58</b>	<b>44.54</b>	<b>48.94</b>

### **TRANSMISSION CHARGES**

28. The revised transmission charges being allowed for the transmission assets for the years 2006-07 to 2008-09 are summarised below:

(Rs. in lakh)

	Asset-I			Asset-II			Asset-III		
	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
Depreciation	175.20	176.18	176.18	269.62	278.65	278.65	287.38	303.41	304.92
Interest on loan	342.81	331.95	309.91	529.27	525.07	495.82	502.63	512.23	485.81
Return on Equity	214.65	216.23	216.23	309.65	320.07	320.07	308.41	331.34	333.70
Advance against Depreciation	0.00	0.00	265.15	0.00	0.00	259.15	0.00	0.00	207.72
Interest on Working Capital	20.84	21.16	25.87	34.44	35.50	40.35	42.58	44.54	48.94
O & M Expenses	52.84	54.87	57.14	199.55	207.34	215.81	553.56	575.56	598.69
Total	<b>806.35</b>	<b>800.38</b>	<b>1050.47</b>	<b>1342.54</b>	<b>1366.64</b>	<b>1609.86</b>	<b>1694.56</b>	<b>1767.09</b>	<b>1979.77</b>

29. The petitioner shall recover from the beneficiaries the additional transmission charges in three monthly instalments. The petitioner has also sought reimbursement of filing fee paid. The Commission by its separate general order dated 11.9.2008 in Petition No. 129/2005 has decided that the petitioner shall not be allowed reimbursement of the petition filing fee.

30. 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.

31. This order disposes of Petition No.46/2009.

sd/-  
**(V.S.VERMA)**  
**MEMBER**  
**New Delhi dated the 19<sup>th</sup> June 2009**

sd/-  
**(R.KRISHNAMOORTHY)**  
**MEMBER**

## CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN

400 kV D/C Tarapur-Padghe transmission line circuit -I associated bay at Padghe

(Rs. in lakh)

	Is of Loan	2004-05	2005-06	2006-07	2007-08	2008-09
<b>1</b>	<b>Bond XII</b>					
	Gross Loan opening	11.00	11.00	11.00	11.00	11.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.92	1.84	2.76
	Net Loan-Opening	11.00	11.00	10.08	9.16	8.24
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.92	0.92	0.92	0.92
	Net Loan-Closing	11.00	10.08	9.16	8.24	7.32
	Average Loan	11.00	10.54	9.62	8.70	7.78
	Rate of Interest	9.70%	9.70%	9.70%	9.70%	9.70%
	Interest	1.07	1.02	0.93	0.84	0.75
	Repayment Schedule	12 Annual instalments from 28. 3.2006				
<b>2</b>	<b>Bond XIII Option-I</b>					
	Gross Loan opening	279.00	279.00	279.00	279.00	279.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	23.25	46.50
	Net Loan-Opening	279.00	279.00	279.00	255.75	232.50
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	23.25	23.25	23.25
	Net Loan-Closing	279.00	279.00	255.75	232.50	209.25
	Average Loan	279.00	279.00	267.38	244.13	220.88
	Rate of Interest	8.63%	8.63%	8.63%	8.63%	8.63%
	Interest	24.08	24.08	23.07	21.07	19.06
	Repayment Schedule	12 Annual instalments from 31. 7.2006				
<b>3</b>	<b>Bond XV</b>					
	Gross Loan opening	778.00	778.00	778.00	778.00	778.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	64.83
	Net Loan-Opening	778.00	778.00	778.00	778.00	713.17
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	64.83	64.83
	Net Loan-Closing	778.00	778.00	778.00	713.17	648.34
	Average Loan	778.00	778.00	778.00	745.59	680.76
	Rate of Interest	6.68%	6.68%	6.68%	6.68%	6.68%
	Interest	51.97	51.97	51.97	49.81	45.47
	Repayment Schedule	12 Annual instalments from 23. 2.2008				
<b>4</b>	<b>Bond XVI</b>					
	Gross Loan opening	3621.00	3621.00	3621.00	3621.00	3621.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	3621.00	3621.00	3621.00	3621.00	3621.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	362.10
	Net Loan-Closing	3621.00	3621.00	3621.00	3621.00	3258.90
	Average Loan	3621.00	3621.00	3621.00	3621.00	3439.95
	Rate of Interest	7.10%	7.10%	7.10%	7.10%	7.10%
	Interest	257.09	257.09	257.09	257.09	244.24
	Repayment Schedule	10 Annual instalments from 18. 2.2009				
<b>5</b>	<b>Bond XVIII ( Add Cap for 2005-06)</b>					
	Gross Loan opening	0.00	0.00	86.00	86.00	86.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	86.00	86.00	86.00
	Additions during the year	0.00	86.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	0.00	86.00	86.00	86.00	86.00
	Average Loan	0.00	43.00	86.00	86.00	86.00
	Rate of Interest	8.15%	8.15%	8.15%	8.15%	8.15%
	Interest	0.00	3.50	7.01	7.01	7.01

	Repayment Schedule	12 Annual instalments from 09.03.2010				
<b>6</b>	<b>Bond XIX ( Add Cap for 2006-07)</b>					
	Gross Loan opening	0.00	0.00	0.00	2.55	2.55
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	0.00	2.55	2.55
	Additions during the year	0.00	0.00	2.55	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	0.00	0.00	2.55	2.55	2.55
	Average Loan	0.00	0.00	1.28	2.55	2.55
	Rate of Interest	9.25%	9.25%	9.25%	9.25%	9.25%
	Interest	0.00	0.00	0.12	0.24	0.24
	Repayment Schedule	12 Annual instalments from 24. 7.2010				
	Gross Loan opening	4689.00	4689.00	4775.00	4777.55	4777.55
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.92	25.09	114.09
	Net Loan-Opening	4689.00	4689.00	4774.08	4752.46	4663.46
	Additions during the year	0.00	86.00	2.55	0.00	0.00
	Repayment during the year	0.00	0.92	24.17	89.00	451.10
	Net Loan-Closing	4689.00	4774.08	4752.46	4663.46	4212.36
	Average Loan	4689.00	4731.54	4763.27	4707.96	4437.91
	Rate of Interest	<b>7.1274%</b>	<b>7.1365%</b>	<b>7.1421%</b>	<b>7.1380%</b>	<b>7.1379%</b>
	Interest	334.21	337.67	340.20	336.05	316.77



## ANNEXURE-II

400 kV D/C Tarapur-Padghe transmission line circuit –II including associated bay at Padghe, 400 kV D/C Tarapur-Boisar transmission line together with associated bays at 400 kV sub-station at Boisar and LILO of 400 kV D/C Gandhar-Padghe transmission line at Boisar sub-station

(Rs. in lakh)

	Details of Loan	2005-06	2006-07	2007-08	2008-09
<b>1</b>	<b>Bond XII</b>				
	Gross Loan opening	15.00	15.00	15.00	15.00
	Cumulative Repayment upto DOCO/previous year	0.00	1.25	2.50	3.75
	Net Loan-Opening	15.00	13.75	12.50	11.25
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	1.25	1.25	1.25	1.25
	Net Loan-Closing	13.75	12.50	11.25	10.00
	Average Loan	14.38	13.13	11.88	10.63
	Rate of Interest	9.70%	9.70%	9.70%	9.70%
	Interest	1.39	1.27	1.15	1.03
	Repayment Schedule	12 Annual instalments from 28. 3.2006			
<b>2</b>	<b>Bond XIII Option-I</b>				
	Gross Loan opening	352.00	352.00	352.00	352.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	29.33	58.67
	Net Loan-Opening	352.00	352.00	322.67	293.33
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	29.33	29.33	29.33
	Net Loan-Closing	352.00	322.67	293.33	264.00
	Average Loan	352.00	337.33	308.00	278.67
	Rate of Interest	8.63%	8.63%	8.63%	8.63%
	Interest	30.38	29.11	26.58	24.05
	Repayment Schedule	12 Annual instalments from 31. 7.2006			
<b>3</b>	<b>Bond XV</b>				
	Gross Loan opening	983.00	983.00	983.00	983.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	81.92
	Net Loan-Opening	983.00	983.00	983.00	901.08
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	81.92	81.92
	Net Loan-Closing	983.00	983.00	901.08	819.17
	Average Loan	983.00	983.00	942.04	860.13
	Rate of Interest	6.68%	6.68%	6.68%	6.68%
	Interest	65.66	65.66	62.93	57.46
	Repayment Schedule	12 Annual instalments from 28.02.2008			
<b>4</b>	<b>Bond XVI</b>				
	Gross Loan opening	4574.00	4574.00	4574.00	4574.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	4574.00	4574.00	4574.00	4574.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	457.40
	Net Loan-Closing	4574.00	4574.00	4574.00	4116.60
	Average Loan	4574.00	4574.00	4574.00	4345.30
	Rate of Interest	7.10%	7.10%	7.10%	7.10%
	Interest	324.75	324.75	324.75	308.52
	Repayment Schedule	10 Annual instalments from 18. 2.2009			
<b>5</b>	<b>Bridge Financing from IOB w.e.f. 01.08.2005 upto 21.09.2005 /Bond-XVII w.e.f 22.09.2005</b>				
	Gross Loan opening	1250.00	1250.00	1250.00	1250.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	1250.00	1250.00	1250.00	1250.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	1250.00	1250.00	1250.00	1250.00
	Average Loan	1250.00	1250.00	1250.00	1250.00
	Rate of Interest	7.07%	7.39%	7.39%	7.39%
	Interest	88.39	92.38	92.38	92.38
	Repayment Schedule	10 annual instalments from 22-9-2009			
<b>6</b>	<b>Bond XVIII ( Add Cap for 2005-06)</b>				
	Gross Loan opening	0.00	68.00	68.00	68.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00

Net Loan-Opening	0.00	68.00	68.00	68.00
Additions during the year	68.00	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00	0.00
Net Loan-Closing	68.00	68.00	68.00	68.00
Average Loan	34.00	68.00	68.00	68.00
Rate of Interest	8.15%	8.15%	8.15%	8.15%
Interest	2.77	5.54	5.54	5.54
Repayment Schedule	12 Annual instalments from 9. 3.2010			
<b>Bond XIX ( Add Cap for 2006-07)</b>				
Gross Loan opening	0.00	0.00	157.45	157.45
Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
Net Loan-Opening	0.00	0.00	157.45	157.45
Additions during the year	0.00	157.45	0.00	0.00
Repayment during the year	0.00	0.00	0.00	0.00
Net Loan-Closing	0.00	157.45	157.45	157.45
Average Loan	0.00	78.73	157.45	157.45
Rate of Interest	9.25%	9.25%	9.25%	9.25%
Interest	0.00	7.28	14.56	14.56
Repayment Schedule	12 Annual instalments from 24. 7.2010			
<b>7 Bond XXII ( Add Cap for 2006-07)</b>				
Gross Loan opening	0.00	0.00	252.00	252.00
Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
Net Loan-Opening	0.00	0.00	252.00	252.00
Additions during the year	0.00	252.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00	0.00
Net Loan-Closing	0.00	252.00	252.00	252.00
Average Loan	0.00	126.00	252.00	252.00
Rate of Interest	8.68%	8.68%	8.68%	8.68%
Interest	0.00	10.94	21.87	21.87
Repayment Schedule	12 Annual instalments from 7-12-2010			
Gross Loan opening	7174.00	7242.00	7651.45	7651.45
Cumulative Repayment upto DOCO/previous year	0.00	1.25	31.83	144.33
Net Loan-Opening	7174.00	7240.75	7619.62	7507.12
Additions during the year	68.00	409.45	0.00	0.00
Repayment during the year	1.25	30.58	112.50	569.90
Net Loan-Closing	7240.75	7619.62	7507.12	6937.22
Average Loan	7207.38	7430.18	7563.37	7222.17
Rate of Interest	7.123%	7.226%	7.269%	7.275%
Interest	513.35	536.94	549.77	525.41

## ANNEXURE-III

220 kV D/C Tarapur-Boisar transmission line with associated 220 kV bays at Boisar sub-station including the auto transformer and LILO of 400 kV D/C Gandhar-Padghe transmission line at Vapi sub-station

(Rs. in lakh)

	Details of Loan	2005-06	2006-07	2007-08	2008-09
<b>1</b>	<b>Bond XII</b>				
	Gross Loan opening	13.00	13.00	13.00	13.00
	Cumulative Repayment upto DOCO/previous year	0.00	1.08	2.17	3.25
	Net Loan-Opening	13.00	11.92	10.83	9.75
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	1.08	1.08	1.08	1.08
	Net Loan-Closing	11.92	10.83	9.75	8.67
	Average Loan	12.46	11.38	10.29	9.21
	Rate of Interest	9.70%	9.70%	9.70%	9.70%
	Interest	1.21	1.10	1.00	0.89
	Repayment Schedule	12 Annual instalments from 28.03.2006			
<b>2</b>	<b>Bond XIII Option-I</b>				
	Gross Loan opening	319.00	319.00	319.00	319.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	26.58	53.17
	Net Loan-Opening	319.00	319.00	292.42	265.83
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	26.58	26.58	26.58
	Net Loan-Closing	319.00	292.42	265.83	239.25
	Average Loan	319.00	305.71	279.13	252.54
	Rate of Interest	8.63%	8.63%	8.63%	8.63%
	Interest	27.53	26.38	24.09	21.79
	Repayment Schedule	12 Annual instalments from 31.7.2006			
<b>3</b>	<b>Bond XV</b>				
	Gross Loan opening	889.00	889.00	889.00	889.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	74.08
	Net Loan-Opening	889.00	889.00	889.00	814.92
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	74.08	74.08
	Net Loan-Closing	889.00	889.00	814.92	740.83
	Average Loan	889.00	889.00	851.96	777.88
	Rate of Interest	6.68%	6.68%	6.68%	6.68%
	Interest	59.39	59.39	56.91	51.96
	Repayment Schedule	12 Annual instalments from 23.02.2008			
<b>4</b>	<b>Bond XVI</b>				
	Gross Loan opening	4135.00	4135.00	4135.00	4135.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	4135.00	4135.00	4135.00	4135.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	413.50
	Net Loan-Closing	4135.00	4135.00	4135.00	3721.50
	Average Loan	4135.00	4135.00	4135.00	3928.25
	Rate of Interest	7.10%	7.10%	7.10%	7.10%
	Interest	293.59	293.59	293.59	278.91
	Repayment Schedule	10 Annual instalments from 18.02.2009			
<b>5</b>	<b>Bridge Financing from IOB w.e.f. 01.09.2005 upto 21.09.2005 /Bond-XVII w.e.f 22.09.2005</b>				
	Gross Loan opening	1150.00	1150.00	1150.00	1150.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	1150.00	1150.00	1150.00	1150.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	1150.00	1150.00	1150.00	1150.00
	Average Loan	1150.00	1150.00	1150.00	1150.00
	Rate of Interest	7.24%	7.39%	7.39%	7.39%
	Interest	83.29	84.99	84.99	84.99
	Repayment Schedule	10 annual instalments from 22-09-09			

<b>6</b>	<b>Bond XVIII ( Add Cap 2005-06)</b>				
	Gross Loan opening	0.00	96.00	96.00	96.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	96.00	96.00	96.00
	Additions during the year	96.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	96.00	96.00	96.00	96.00
	Average Loan	48.00	96.00	96.00	96.00
	Rate of Interest	8.15%	8.15%	8.15%	8.15%
	Interest	3.91	7.82	7.82	7.82
	Repayment Schedule	12 Annual instalments from 09.03.2010			
<b>7</b>	<b>Bond XXII (addcap for 2006-07)</b>				
	Gross Loan opening	0.00	0.00	483.00	483.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	483.00	483.00
	Additions during the year	0.00	483.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	0.00	483.00	483.00	483.00
	Average Loan	0.00	241.50	483.00	483.00
	Rate of Interest	8.68%	8.68%	8.68%	8.68%
	Interest	0.00	20.96	41.92	41.92
	Repayment Schedule	12 Annual instalments from 07-12-2010			
	Gross Loan opening	6506.00	6602.00	7085.00	7085.00
	Cumulative Repayment upto DOCO/previous year	0.00	1.08	28.75	130.50
	Net Loan-Opening	6506.00	6600.92	7056.25	6954.50
	Additions during the year	96.00	483.00	0.00	0.00
	Repayment during the year	1.08	27.67	101.75	515.25
	Net Loan-Closing	6600.92	7056.25	6954.50	6439.25
	Average Loan	6553.46	6828.58	7005.38	6696.88
	Rate of Interest	7.155%	7.238%	7.285%	7.291%
	Interest	468.91	494.23	510.32	488.29