

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Coram:**

1. Dr. Pramod Deo, Chairperson
2. Shri Bhanu Bhushan, Member
3. Shri R.Krishnamoorthy, Member
4. Shri S.Jayaraman, Member

**Petition No. 68/2008**

**In the matter of**

**Determination of final transmission tariff for (i) 315 MVA 400/220 kV ICT I & II along with associated bays and four nos of 220 kV transmission line bays at Kaithal sub-station (ii) 315 MVA 400/220 kV ICT I & II along with associated bays and four nos of 220 kV transmission line bays at Mainpuri sub-station, and (iii) 2 nos. of 220 kV bays at Abdullapur sub-station under Rihand Stage-II Transmission System in Northern Region for tariff block 2004-09.**

**And in the matter of**

Power Grid Corporation of India Limited, Gurgaon  
Vs

**..Petitioner**

1. Rajasthan Rajya Vidyut Prasaran Nigam Limited, Jaipur
2. Ajmer Vidyut Vitaran Nigam Ltd., Ajmer
3. Jaipur Vidyut Vitaran Nigam Ltd, Jaipur
4. Jodhpur Vidyut Vitaran Nigam Ltd, Jodhpur
5. Himachal Pradesh State Electricity Board, Shimla
6. Punjab State Electricity Board, Patiala
7. Haryana Power Generation Corporation Ltd, Panchkula
8. Power Development Department, Govt. of J&K, Jammu
9. Uttar Pradesh Power Corporation Ltd, Lucknow
10. Delhi Transco Ltd, New Delhi
11. BSES Yamuna Power Ltd., Delhi
12. BSES Rajdhani Power Ltd., New Delhi
13. North Delhi Power Ltd., New Delhi
14. Chief Engineer, Chandigarh Administration, Chandigarh
15. Uttaranchal Power Corporation Ltd, Dehradun
16. North Central Railway, Allahabad

**..Respondents**

**The following were present:**

1. Shri U.K. Tyagi, PGCIL
2. Shri M.M.Mondal, PGCIL
3. Shri R.Prasad, PGCIL
4. Shri C.Kannan, PGCIL
5. Shri S.S.Raju, PGCIL
6. Shri Atul Parsija, HPPC

**ORDER**  
**(DATE OF HEARING: 27.11.2008)**

This petition has been filed for approval of transmission charges for (i) 315 MVA 400/220 kV ICT I & II along with associated bays and four nos. of 220 kV transmission line bays at Kaithal sub-station (Asset-I), (ii) 315 MVA 400/220 kV ICT I & II along with associated bays and four nos. of 220 kV transmission line bays at Mainpuri sub-station (Asset-II) and (iii) Two nos. of 220 kV bays at Abdullapur sub-station (Asset-III) under Rihand Stage-II Transmission System (the transmission system) in Northern Region from the date of commercial operation of the respective transmission asset 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”) after accounting for additional capitalization during 2005-06 and 2006-07. The petitioner has also prayed for reimbursement of expenditure from the beneficiaries incurred towards publishing of notices in newspapers and the petition filing fee.

2. The investment approval for the transmission system has been accorded by Ministry of Power vide its letter dated 9.12.2008 at an estimated cost of Rs. 104444 lakh, which includes IDC of Rs. 15749 lakh.

3. The provisional transmission charges for the transmission assets were approved by the Commission in its order dated 21.9.2006 in Petition No. 38/2006 (for Asset-I and Asset-II) and order dated 22.5.2007 in I.A.No. 4/2007 in Petition No. 2/2007 (for Asset-III). The dates of commercial operation of the transmission assets as indicated by the petitioner are as under:

S. No.	Name of the assets	Date of commercial operation
1.	Asset-I	1.11.2005
2.	Asset-II	1.1.2006
3.	Asset-III	1.11.2006

4. The details of the apportioned approved cost, the estimated completion cost, etc. of the transmission assets noted at opening para of this order, as per details furnished are as under:

(Rs. in lakh)

Name of the assets	Apportioned approved cost	Capital expenditure as on the date of commercial operation	Capital Expenditure from the date of commercial operation to 31.3.2006	Expenditure from 1.4.2006 to 31.3.2007	Decapitalisation of ICT	Additional capitalisation ICT	Capital expenditure as on 31.3.2007	Balance Expenditure	Total estimated completion cost
Asset-I	4490.94	2823.92	642.33	339.36	(-) 694.07	1024.56	4136.10	131.68	4267.78
Asset-II	4 064.18	3254.73	368.33	114.01	(-)670.74	694.00	3760.33	621.00	4381.33
Asset-III	0.00	355.94	0.00	38.45	-	-	394.39	36.32	430.71

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

(Rs. in lakh)

	Asset-I				Asset-II				Asset-III		
	2005-06 (Pro rata)	2006-07	2007-08	2008-09	2005-06 (Pro rata)	2006-07	2007-08	2008-09	2006-07 (Pro rata)	2007-08	2008-09
Depreciation	45.79	131.67	142.80	142.80	29.06	125.32	127.77	127.77	5.77	14.54	14.54
Interest on Loan	65.48	188.91	198.24	188.14	42.70	180.34	175.43	166.41	7.99	19.54	18.34
Return on Equity	54.38	158.07	172.14	172.14	36.71	157.47	160.36	160.36	8.06	20.14	20.14
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	6.79	18.71	20.15	20.52	4.31	18.30	18.86	19.22	1.20	3.01	3.08
O & M Expenses	97.50	243.36	253.04	263.20	58.50	243.36	253.04	263.20	25.35	63.26	65.80
Total	269.94	740.72	786.38	786.80	171.28	724.80	735.46	736.96	48.37	120.49	121.91

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		
	2005-06 (Pro rata)	2006-07	2007-08	2008-09	2005-06 (Pro rata)	2006-07	2007-08	2008-09	2006-07 (Pro rata)	2007-08	2008-09
Maintenance Spares	31.45	38.80	44.48	47.14	34.39	37.43	40.37	42.79	3.75	4.04	4.28
O & M expenses	19.50	20.28	21.09	21.93	19.50	20.28	21.09	21.93	5.07	5.27	5.48
Receivables	107.98	123.45	131.06	131.13	114.19	120.80	122.58	122.83	19.35	20.08	20.32
Total	158.93	182.53	196.63	200.21	168.08	178.51	184.03	187.55	28.17	29.39	30.08
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	6.79	18.71	20.15	20.52	4.31	18.30	18.86	19.22	1.20	3.01	3.08

7. The reply to the petition has been filed by Uttar Pradesh Power Corporation Limited (UPPCL), Ajmer Vidyut Vitran Nigam Limited (AVVNL), Jaipur Vidyut Vitran Nigam Limited (JVVNL), Jodhpur Vidyut Vitran Nigam Limited (JdVVNL) and Haryana

Power Purchase Centre (HPCC). In response to the public notices published by the petitioner in accordance with the procedure specified by the Commission, no comments have been received from the general public.

### **CAPITAL COST**

8. As per clause (1) of Regulation 52 of the 2004 regulations, subject to prudence check, the actual expenditure incurred on completion of the project shall form the basis for determination of final tariff. The final tariff shall be determined based on the admitted capital expenditure actually incurred up to the date of commercial operation of the transmission system and shall include capitalised initial spares subject to a ceiling norm as 1.5% of original project cost. The regulation is applicable in case of the transmission system declared under commercial operation on or after 1.4.2004.

9. The petitioner has claimed tariff after accounting for additional capitalization on works from the dates of commercial operation up to 31.3.2007 as given in the table below para 4 above. The petitioner has further claimed net additional capitalisation on account of replacement of ICTs for Asset-I and Asset-II during 2006-07.

### **ADDITIONAL CAPITALIZATION 2005-06 and 2006-07**

10. Clause (1) of Regulation 53 of the 2004 regulations provides-

“(1) The following capital expenditure within the original scope of work actually incurred after the date of commercial operation and up to the cut off date may be admitted by the Commission, subject to prudence check:

- (i) Deferred liabilities;
- (ii) Works deferred for execution;
- (iii) Procurement of initial capital spares in the original scope of works subject to the ceiling norm specified in regulation 52;
- (iv) Liabilities to meet award of arbitration or compliance of the order or decree of a court; and
- (v) On account of change in law:

Provided that original scope of work along with estimates of expenditure shall be submitted along with the application for provisional tariff:

Provided further that a list of the deferred liabilities and works deferred for execution shall be submitted along with the application for final tariff after the date of commercial operation of the transmission system.”

11. The details submitted by the petitioner in support of its claim for additional capital expenditure for Asset-I and Asset-II after considering net of de-capitalization on account of dismantling and diversion of ICTs and additional capitalization due to installation of new/repaired ICTs in place of diverted ICTs at Kathal and Manipuri are given hereunder:

	Asset-I		Asset-II		Asset-III	
	Nature of expenditure	Details	Nature of expenditure	Details	Details	Nature of expenditure
2005-06	Building and Civil works = Rs. 123.00 lakh Sub-station= Rs. 504.13 lakh PLCC= Rs. 15.20 lakh  Total= Rs. 642.33 lakh	Balance payments	Land= Rs.0.31 lakh Sub-station= Rs.368.01 lakh  Total= Rs.368.01 lakh	Balance payments	-	-
2006-07	Building and civil works= Rs. 102.56 lakh Sub-station=Rs. 236.80 lakh  Total= Rs. 339.36 lakh  <b>Sub-station</b> De-capitalisation= Rs. 694.07 lakh Additional capitalization=Rs. 1024.56 lakh Net capitalization=Rs. 330.49 lakh	Balance payments  De-capitalization on account of dismantling and diversion of ICTs and additional capitalization for installing new/repaired ICTs.	Building and Civil works=Rs. 2.86 lakh Sub-station= Rs.111.15 lakh  Total=Rs.114.01 lakh  <b>Sub-station</b> De-capitalization= Rs. 670.74 lakh Additional capitalization=Rs. 694.00 lakh  Net capitalization= Rs.23.26 lakh	Balance payments  De-capitalization on account of dismantling and diversion of ICTs and additional capitalization for installing new/repaired ICTs.	Sub-station= Rs. 38.45 lakh	Balance payments

12. The additional capital expenditure of Rs. 642.33 lakh and Rs. 368.33 lakh claimed for Asset-I and Asset-II, respectively for the year 2005-06 is within the original scope of work and is found to be in order as it was against the committed liability. Accordingly, capitalization of the additional expenditure for the year 2005-06 claimed by the petitioner has been allowed for the Asset-I and Asset-II. Similarly, additional capitalization on works for Asset-I, Asset-II and Asset-III of Rs. 339.36 lakh, Rs. 114.01 lakh and Rs. 38.45 lakh, respectively for the year 2006-07 is also within the original scope of work and is found to be in order, the expenditure being against the balance payments on works and committed liability. Accordingly, capitalization of the additional expenditure claimed by the petitioner has been allowed.

13. In respect of additional capital expenditure claimed by the petitioner for replacement of burnt ICTs during the year 2006-07, the petitioner has submitted that the three incidents of ICT failures took place within a span of 13 days at Ballabgarh and Mandola sub-stations which are feeding power to the National Capital Territory of Delhi. It has been explained that considering the then prevailing summer conditions and load demand of Delhi it became difficult to meet the load demand with remaining ICTs at these sub-stations. Therefore, it became necessary to replace the failed ICTs. After analyzing the situation it was decided to shift ICTs from other locations, one each from Bahadurgarh, Kaithal and Mainpuri. The details of outages and restoration as indicated by the petitioner are summarized below:

	Name of sub-station	Description	Date of outage	Date of Restoration	Restored with ICT dismantled and diverted from
1.	Mandola	ICT-IV	28. 4.2006	29. 5.2006	Bhadurgarh
2.	Mandola	ICT-II	9. 5.2006	4. 6.2006	Kaithal
3.	Ballabgarh	ICT-I	1. 5.2006	19. 6.2006	Mainpuri

14. While allowing the provisional tariff, the Commission vide its order dated 27.9.2007 in Petition No. 2/2007 reduced the transmission charges on pro rata basis (ratio of capital cost of ICTs removed from service to the total capital cost of the assets) for respective ICTs from the date which have been taken out of service till their restoration.

15. The details of ICTs dismantled and diverted from Mainpuri and Kaithal sub-stations have been subsequently restored as hereunder below:

Name of the sub-station	Description	Date of the commercial operation	Date of outages	Date of restoration	Restored with transformer diverted from	Remarks
Mainpuri	ICT-I	1.1.2006	18.5.2006	27.1.2007	Mandola ICT-4	Repaired ICT
Kaithal	ICT-I	1.11.2005	13.5.2006	23.2.2007	Kota new ICT	New ICT

16. As the responsibility of maintenance of healthy transmission system has been assigned to Central Transmission Utility, de-capitalisation and additional capitalization has not been allowed on account of shifting of transformers. Accordingly, net additional capital expenditure during 2006-07 of Rs. 330.49 lakh and Rs. 23.26 lakh for Asset-I and Asset-II respectively claimed by the petitioner is not being allowed.

**Time Over-run**

17. As per the original approval, the transmission assets were scheduled to be commissioned by December 2005. However, Asset-III was declared under commercial operation on 1.11.2006. There was delay of 11 months in the commissioning. The petitioner has submitted that it had made all efforts to complete the bays before January 2006 matching with commissioning of the first generating unit. These bays were on verge of completion by January 2006 but 220 kV evacuation line by HVPNL was not ready. The evacuation line was delayed considerably and the petitioner had no option but to wait and declare these bays under commercial operation from 1.11.2006. The petitioner has further submitted that there was no delay on its part. During the hearing, the petitioner stated that since HVPNL was responsible for the delay in the commissioning of the bays on account of non-commissioning of 220 kV evacuation line, it should pay the transmission charges for this element till 220 kV evacuation line was commissioned and thereafter the transmission charges for this element may be pooled in the regional system for which the transmission charges are shareable by all the respondents.

18. HVPNL has submitted that there had been delay on account of contractual constraints and the transmission line was not scheduled for commissioning by 31.12.2008.

19. The delay in commissioning of line was beyond the control of petitioner. Therefore, the delay is condoned for the purpose of tariff. However, the respondent HVPNL cannot absolve itself of the responsibility for time delay. Therefore, HVPNL shall pay the transmission charges for Asset-III till 220 kV evacuation transmission line is commissioned, and thereafter this element shall be pooled in the regional system.

### **TOTAL CAPITAL COST**

20. Based on the above, gross block as given below has been considered for the purpose of tariff for the transmission assets, after allowing additional capitalization on woks as claimed by the petitioner, which is within the limits of apportioned approved cost:

(Rs. in lakh)

	Expenditure as on the date of commercial operation	Additional capital expenditure from the date of commercial operation to 31.3.2006	Expenditure as on 31.3.2006	Additional expenditure 31.3.2007 up to	Total capital expenditure
Asset- I	2823.92	642.33	3466.25	339.36	3805.61
Asset-II	3254.73	368.33	3623.06	114.01	3737.07
Asset-III	355.94 (1.11.2006)	-	355.94 (As on 1.11.2006)	38.45	394.39

21. The petitioner has not indicated the apportioned approved cost for Asset-III. However, tariff is being allowed since total capital expenditure for the transmission system, as a whole is stated to be within the approved cost.

### **DEBT- EQUITY RATIO**

22. Clause (1) of Regulation 54 of the 2004 regulations *inter alia* provides that,-

“(1) In case of the existing projects, debt–equity ratio Considered by the Commission for fixation of tariff for the period ending 31.3.2004 shall be considered for determination of tariff with effect from 01.04.2004:



Provided that in cases where the tariff for the period ending 31.3.2004 has not been determined by the Commission, debt-equity ratio shall be as may be decided by the Commission:

Provided further that in case of the existing projects where additional capitalisation has been completed on or after 1.4.2004 and admitted by the Commission under Regulation 53, equity in the additional capitalisation to be considered shall be :-

- (a) 30% of the additional capital expenditure admitted by the Commission, or
- (b) equity approved by the competent authority in the financial package, for additional capitalisation, or
- (c) actual equity employed,

whichever is the least:

Provided further that in case of additional expenditure admitted under the second proviso, the Commission may consider equity of more than 30% if the transmission licensee is able to satisfy the Commission that deployment of such equity of more than 30% was in the interest of general public.”

23. The Note 1 below Regulations 53 lays down that any expenditure on account of committed liabilities with the original scope of work is to be serviced in the normative debt-equity ratio specified in Regulation 54.

24. The petitioner has considered debt-equity ratio of 70.40:29.60, 69.47:30.53 and 62.83:37.17 for Asset-I, Asset-II and Asset-III respectively, as actually deployed on the date of commercial operation. The petitioner has further considered the amount of additional capitalization in the debt-equity ratio of 70:30. The methodology adopted by the petitioner has been considered as it is in accordance with the 2004 regulations. Accordingly, for the purpose of tariff, equity considered for the transmission assets is as under:

(Rs. in lakh)

	Capital cost as on date of commercial operation	Equity on the date of commercial operation	Additional capital expenditure during 2005-06	Addition of equity during 2005-06	Additional capital expenditure during 2006-07	Addition of equity during 2006-07	Equity as on 1.4.2007
Asset- I	2823.92	835.92	642.33	192.70	669.86	101.81	1130.43
Asset-II	3254.73	993.73	368.33	110.50	137.27	34.20	1138.43
Asset-III	355.94	132.32	-	-	38.45	11.54	143.86

## **RETURN ON EQUITY**

25. 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.

26. Equity has been considered as on the date of commercial operation and as on 1.4.2007 onwards as given in the table in para 24 above. However, tariff for the period from date of commercial operation to 31.3.2007 has been allowed on average equity. Accordingly, the petitioner shall be entitled to return on equity as under:

(Rs. in lakh)

Name of the asset	Equity as on the date of commercial operation	Addition due to additional capitalization for the period 2005-06	Average equity for 2005-06	Addition due to additional capitalization for the period 2006-07	Average equity 2006-07	Return on equity			
						2005-06 (Pro rata)	2006-07	2007-08	2008-09
Asset- I	835.92	192.70	932.77	101.81	1079.52	54.38	151.13	158.26	158.26
Asset- II	993.73	110.50	1048.99	34.20	1121.33	36.71	156.99	159.38	159.38
Asset-III	132.32	-	-	11.54	138.09	-	8.06 (Pro rata)	20.14	20.14

## **INTEREST ON LOAN**

27. Clause (i) of regulation 56 of the 2004 regulations *inter alia* provides that,-

(a) Interest on loan capital shall be computed loan wise on the loans arrived at in the manner indicated in regulation 54.

(b) The loan outstanding as on 1.4.2004 shall be worked out as the gross loan 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.”

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

(i) Gross loans opening has been considered from 2005-06 for Asset-I and Asset-II and from 2006-07 for Asset-III.

(ii) On the basis of actual rate of interest on actual average loan, the weighted average rate of interest on loan is worked out for various years;

(iii) Loan Bonds XVIII and XXII have been utilised for the purpose of additional capitalisation during 2005-06 and 2006-07 for Asset-I and Asset-II respectively. Loan Bond XXII has been utilised for the purpose of additional capitalisation during 2006-07 for Asset-III.

(iv) Gross loan at (i) above have been considered along with the loan utilised after date of commercial operation and the weighted average rate of interest on loan for respective years as per above has been multiplied to arrive at interest on loan, considering as repayment, Advance Against Depreciation claimed being nil for all the three assets.

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

- (i) Gross amount of loan, repayment of instalments and rate of interest with loan matrix for 2005-06 and 2006-07 submitted by the petitioner have been used to work out weighted average rate of interest on actual loan.
- (ii) Notional loan arising out of additional capitalization from date of commercial operation to 31.3.2007 has been added in loan amount as on date of commercial operation to arrive at total notional loan. This adjusted gross loan has been considered as normative loan for tariff calculations
- (iii) Tariff has been worked out considering normative loan and normative repayments. Once the normative loan has been arrived at, it has been considered for all purposes in the tariff. Normative repayment has been worked out by the following formula :  

$$\frac{\text{Actual repayment of actual loan during the year}}{\text{Opening balance of actual loan during the year}} \times \text{Opening balance of normative loan during the year}$$
- (iv) 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.
- (v) 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.

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

(Rs. in lakh)

Details of loan	Asset-I				Asset-II				Asset-III		
	2005-06 (Pro rata)	2006-07	2007-08	2008-09	2005-06 (Pro rata)	2006-07	2007-08	2008-09	2006-07 (Pro rata)	2007-08	2008-09
Opening Gross Loan	1988.00	2437.63	2675.18	2675.18	2261.00	2518.83	2598.64	2598.64	223.62	250.54	250.54
Cumulative Repayment	0.00	45.79	171.51	302.42	0.00	29.06	153.97	280.90	0.00	5.77	20.31
Net Loan-Opening	1988.00	2391.84	2503.67	2372.77	2261.00	2489.77	2444.67	2317.74	223.62	244.76	230.22
Additions due to Additional Capitalisation	449.63	237.55			257.83	79.81			26.92		
Repayment during the year	45.79	125.72	130.91	130.91	29.06	124.91	126.93	126.93	5.77	14.54	14.54
Net Loan-Closing	2391.84	2503.67	2372.77	2241.86	2489.77	2444.67	2317.74	2190.80	244.76	230.22	215.68
Average Loan	2189.92	2447.76	2438.22	2307.31	2375.38	2467.22	2381.20	2254.27	234.19	237.49	222.95
Weighted Average Rate of Interest on Loan	7.18%	7.38%	7.46%	7.48%	7.19%	7.29%	7.32%	7.33%	8.19%	8.23%	8.23%
<b>Interest</b>	65.48	180.60	181.87	172.61	42.70	179.77	174.30	165.34	7.99	19.54	18.34

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

### **DEPRECIATION**

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

- (i) The value base for the purpose of depreciation shall be the historical cost of the asset.
- (ii) Depreciation shall be calculated annually based on straight line method over the useful life of the asset and at the rates prescribed in Appendix II to these regulations. The residual value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the historical capital cost of the asset. Land is not a depreciable asset and its cost shall be excluded from the capital cost while computing 90% of the historical cost of the asset. The historical capital cost of the asset shall include additional capitalisation on account of Foreign Exchange Rate Variation up to 31.3.2004 already allowed by the Central Government/Commission.

- (iii) On repayment of entire loan, the remaining depreciable value shall be spread over the balance useful life of the asset.
- (iv) Depreciation shall be chargeable from the first year of operation. In case of operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

33. Depreciation allowed has been worked out as below:

(Rs. in lakh)

Details of Depreciation	Asset-I				Asset-II				Asset-III		
	2005-06 (Pro rata)	2006-07	2007-08	2008-09	2005-06 (Pro rata)	2006-07	2007-08	2008-09	2006-07 (Pro rata)	2007-08	2008-09
Gross block as on the date of commercial operation	2823.92	3466.25	3805.61	3805.61	3254.73	3623.06	3737.07	3737.07	355.94	394.39	394.39
Additional Capitalisation during 2006-07	642.33	339.36			368.33	114.01			38.45		
Gross Block at the end of the year	3466.25	3805.61	3805.61	3805.61	3623.06	3737.07	3737.07	3737.07	394.39	394.39	394.39
Rate of Depreciation	3.4943%	3.4577%	3.4398%	3.4398%	3.3806%	3.3941%	3.3966%	3.3966%	3.6914%	3.6869%	3.6869%
Depreciable Value (90%)	2830.58	3272.34	3425.05	3425.05	2970.49	3187.40	3238.70	3238.70	337.65	354.95	354.95
Remaining Depreciable Value	2830.58	3226.55	3253.54	3122.63	2970.49	3158.34	3084.73	2957.80	337.65	349.18	334.64
<b>Depreciation</b>	45.79	125.72	130.91	130.91	29.06	124.91	126.93	126.93	5.77	14.54	14.54

### **ADVANCE AGAINST DEPRECIATION**

34. 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

35. 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.

36. The petitioner has not claimed Advance Against Depreciation and accordingly, Advance Against Depreciation has not been considered.

### **OPERATION & MAINTENANCE EXPENSES**

37. 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

38. The petitioner has claimed O & M expenses for 8 bays for Asset-I, 8 bays for Asset-II and 2 bays for Asset-III which have been allowed. Accordingly, the petitioner's entitlement to O & M expenses has been worked out as given hereunder:

(Rs. in lakh)													
	Asset-I					Asset-II					Asset-III		
	2005-06 (Pro rata)	2006-07	2007-08	2008-09		2005-06 (Pro rata)	2006-07	2007-08	2008-09		2006-07 (Pro rata)	2007-08	2008-09
O&M expenses for ckt km	-	-	-	-	O&M expenses for ckt km	-	-	-	-	O&M expenses for ckt km	-	-	-
O&M expenses (Rs in lakh per bay) for 8 bay	97.50	243.36	253.04	263.20	O&M expenses (Rs in lakh per bay) for 8 bay	58.50	243.36	253.04	263.20	O&M expenses (Rs in lakh per bay) for 2 bay	25.35	63.26	65.80
Total	97.50	243.36	253.04	263.20	Total	58.50	243.36	253.04	263.20	Total	25.35	63.26	65.80

39. The petitioner has submitted that the wage revision of its employees is due with effect from 1.1.2007. Therefore, according to the petitioner, O & M expenses should be subject to revision on account of revision of employee cost from that date. In the alternative, it has been prayed that the increase in employee cost due to wage revision be allowed as per actuals for extra cost to be incurred consequent to wage revision. We are not expressing any view, as this issue does not arise for

consideration at this stage. The petitioner may approach for a relief in this regard at an appropriate stage in accordance with law.

### **INTEREST ON WORKING CAPITAL**

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

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

Regulation 56(v) (1) (b) of the 2004 regulations provides for maintenance spares @ 1% of the historical cost escalated @ 6% per annum from the date of commercial operation. In the present case, element wise capital expenditure on the date of commercial operation which has been considered as the historical cost for the purpose of the present petition and maintenance spares have been worked out accordingly by escalating 1% of the historical cost @ 6% per annum. In this manner, the value of maintenance spares works out to Rs. 28.24 lakh, Rs.32.55 lakh and Rs. 3.56 lakh for Asset-I, Asset-II and Asset-III, respectively as on date of commercial operation. The necessary details are given hereunder:

Transmission assets	Date of Commercial Operation	Capital Expenditure on the date of commercial operation (Rs. in lakh)	Escalated spares Cost as on 1.4.2004 (Rs. in lakh)
Asset- I	1.11.2005	2823.92	28.24
Asset-II	1.1.2006	3254.73	32.55
Asset-III	1.11.2006	355.94	3.56

#### **(ii) O & M expenses**

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

#### **(iii) Receivables**



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

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

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

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

(Rs. in lakh)

	Asset- I				Asset-II				Asset-III		
	2005-06 (Pro rata)	2006-07	2007-08	2008-09	2005-06 (Pro rata)	2006-07	2007-08	2008-09	2006-07 (Pro rata)	2007-08	2008-09
Maintenance Spares	28.24	28.95	30.68	32.52	32.55	33.04	35.02	37.12	3.56	3.65	3.87
O & M expenses	19.50	20.28	21.09	21.93	19.50	20.28	21.09	21.93	5.07	5.27	5.48
Receivables	107.92	119.69	123.68	123.88	114.16	120.47	121.98	122.24	19.35	20.08	20.31
Total	155.66	168.91	175.45	178.33	166.20	173.79	178.09	181.29	27.97	29.00	29.66
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	6.65	17.31	17.98	18.28	4.26	17.81	18.25	18.58	1.19	2.97	3.04

**TRANSMISSION CHARGES**

42. The transmission charges being allowed for the two transmission assets are summarised below:

(Rs. in lakh)

	Asset-I				Asset-II				Asset-III		
	2005-06 (Pro rata)	2006-07	2007-08	2008-09	2005-06 (Pro rata)	2006-07	2007-08	2008-09	2006-07 (Pro rata)	2007-08	2008-09
Depreciation	45.79	125.72	130.91	130.91	29.06	124.91	126.93	126.93	5.77	14.54	14.54
Interest on Loan	65.48	180.60	181.87	172.61	42.70	179.77	174.30	165.34	7.99	19.54	18.34
Return on Equity	54.38	151.13	158.26	158.26	36.71	156.99	159.38	159.38	8.06	20.14	20.14
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	6.65	17.31	17.98	18.28	4.26	17.81	8.25	8.58	1.19	2.97	3.04
O & M Expenses	97.50	243.36	253.04	263.20	58.50	243.36	253.04	263.20	25.35	63.26	65.80
Total	269.80	718.13	742.06	743.25	171.23	722.83	731.90	733.43	48.36	120.45	121.86

43. 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.

44. The petitioner has sought approval for the reimbursement of expenditure of Rs. 2, 57,869/- incurred on publication of notices in the newspapers. The petitioner shall claim reimbursement of the said expenditure directly from the respondents in one installment in the ratio applicable for sharing of transmission charges. The 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.

45. This order disposes of Petition No. 68/2008.

Sd/- (S.JAYARAMAN) MEMBER  
sd/- (R.KRISHNAMOORTHY) MEMBER  
sd/- (BHANU BHUSHAN) MEMBER  
sd/- (DR.PRAMOD DEO) CHAIRPERSON  
New Delhi dated the 3rd February 2009



**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN**

MVA 400/220 kV ICT I & II along with associated bays and four nos of 220 kV transmission line bays at Kaithal sub-station

(Rs. in lakh)

	<b>Details of Loan</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
<b>1</b>	<b>Bond-XIII Option-I</b>				
	Gross Loan opening	62.00	62.00	62.00	62.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	5.17	10.33
	Net Loan-Opening	62.00	62.00	56.83	51.67
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	5.17	5.17	5.17
	Net Loan-Closing	62.00	56.83	51.67	46.50
	Average Loan	62.00	59.42	54.25	49.08
	Rate of Interest	8.63%	8.63%	8.63%	8.63%
	Interest	5.35	5.13	4.68	4.24
	Repayment Schedule		12 Annual instalments from 31. 7.2006		
<b>2</b>	<b>Bond-XV</b>				
	Gross Loan opening	798.00	798.00	798.00	798.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	66.50
	Net Loan-Opening	798.00	798.00	798.00	731.50
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	66.50	66.50
	Net Loan-Closing	798.00	798.00	731.50	665.00
	Average Loan	798.00	798.00	764.75	698.25
	Rate of Interest	6.68%	6.68%	6.68%	6.68%
	Interest	53.31	53.31	51.09	46.64
	Repayment Schedule		12 Annual instalments from 23. 2.2008		
<b>3</b>	<b>Bond-XVI</b>				
	Gross Loan opening	853.00	853.00	853.00	853.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	853.00	853.00	853.00	853.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	85.30
	Net Loan-Closing	853.00	853.00	853.00	767.70
	Average Loan	853.00	853.00	853.00	810.35
	Rate of Interest	7.10%	7.10%	7.10%	7.10%
	Interest	60.56	60.56	60.56	57.53
	Repayment Schedule		10 Annual instalments from 18. 2.2009		
<b>4</b>	<b>Bond-XVII</b>				
	Gross Loan opening	275.00	275.00	275.00	275.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	275.00	275.00	275.00	275.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the	0.00	0.00	0.00	0.00

	year				
	Net Loan-Closing	275.00	275.00	275.00	275.00
	Average Loan	275.00	275.00	275.00	275.00
	Rate of Interest	7.39%	7.39%	7.39%	7.39%
	Interest	20.32	20.32	20.32	20.32
	Repayment Schedule		10 Annual instalments from 22. 9.2009		
5	<b>Bond- XVIII (For Add Cap during 2005-06)</b>				
	Gross Loan opening	0.00	642.33	642.33	642.33
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	642.33	642.33	642.33
	Additions during the year	642.33	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	642.33	642.33	642.33	642.33
	Average Loan	321.17	642.33	642.33	642.33
	Rate of Interest	8.15%	8.15%	8.15%	8.15%
	Interest	26.17	52.35	52.35	52.35
	Repayment Schedule		12 Annual Instalments from 9. 3.2010		
6	<b>Bond- XXII (For Add Cap during 2006-07)</b>				
	Gross Loan opening		0.00	339.36	339.36
	Cumulative Repayment upto DOCO/previous year		0.00	0.00	0.00
	Net Loan-Opening		0.00	339.36	339.36
	Additions during the year		339.36	0.00	0.00
	Repayment during the year		0.00	0.00	0.00
	Net Loan-Closing		339.36	339.36	339.36
	Average Loan		169.68	339.36	339.36
	Rate of Interest		8.68%	8.68%	8.68%
	Interest		14.73	29.46	29.46
	Repayment Schedule		12 Annual Instalments from 7.12.2010		
	<b>Total Loan</b>				
	Gross Loan opening	1988.00	2630.33	2969.69	2969.69
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	5.17	76.83
	Net Loan-Opening	1988.00	2630.33	2964.52	2892.86
	Additions during the year	642.33	339.36	0.00	0.00
	Repayment during the year	0.00	5.17	71.67	156.97
	Net Loan-Closing	2630.33	2964.52	2892.86	2735.89
	Average Loan	2309.17	2797.43	2928.69	2814.37
	Rate of Interest	7.18%	7.38%	7.46%	7.48%
	<b>Interest</b>	165.72	206.40	218.46	210.54

## Annexure-II

315 MVA 400/220 kV ICT I & II along with associated bays and four nos of 220 kV transmission line bays at Mainpuri sub-station

(Rs. in lakh)

	Details of Loan	2005-06	2006-07	2007-08	2008-09
1	<b>Bond-XIII Option-I</b>				
	Gross Loan opening	53.00	53.00	53.00	53.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	4.42	8.83
	Net Loan-Opening	53.00	53.00	48.58	44.17
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	4.42	4.42	4.42
	Net Loan-Closing	53.00	48.58	44.17	39.75
	Average Loan	53.00	50.79	46.38	41.96
	Rate of Interest	8.63%	8.63%	8.63%	8.63%
	Interest	4.57	4.38	4.00	3.62
	Repayment Schedule		12 Annual instalments from 31. 7.2006		
2	<b>Bond-XV</b>				
	Gross Loan opening	681.00	681.00	681.00	681.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	56.75
	Net Loan-Opening	681.00	681.00	681.00	624.25
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	56.75	56.75
	Net Loan-Closing	681.00	681.00	624.25	567.50
	Average Loan	681.00	681.00	652.63	595.88
	Rate of Interest	6.68%	6.68%	6.68%	6.68%
	Interest	45.49	45.49	43.60	39.80
	Repayment Schedule		12 Annual instalments from 23. 2.2008		
3	<b>Bond-XVI</b>				
	Gross Loan opening	727.00	727.00	727.00	727.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	727.00	727.00	727.00	727.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	72.70
	Net Loan-Closing	727.00	727.00	727.00	654.30
	Average Loan	727.00	727.00	727.00	690.65
	Rate of Interest	7.10%	7.10%	7.10%	7.10%
	Interest	51.62	51.62	51.62	49.04
	Repayment Schedule		10 Annual instalments from 18. 2.2009		
4	<b>Bond-XVII</b>				
	Gross Loan opening	800.00	800.00	800.00	800.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	800.00	800.00	800.00	800.00
	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	800.00	800.00	800.00	800.00
	Average Loan	800.00	800.00	800.00	800.00
	Rate of Interest	7.39%	7.39%	7.39%	7.39%
	Interest	59.12	59.12	59.12	59.12
	Repayment Schedule		10 Annual instalments from 22.9.2009		
5	<b>Bond- XVIII (For Add Cap during 2005-06)</b>				
	Gross Loan opening	0.00	367.53	367.53	367.53

	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	367.53	367.53	367.53
	Additions during the year	367.53	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	367.53	367.53	367.53	367.53
	Average Loan	183.77	367.53	367.53	367.53
	Rate of Interest	8.15%	8.15%	8.15%	8.15%
	Interest	14.98	29.95	29.95	29.95
	Repayment Schedule		12 Annual Instalments from 9. 3.2010		
<b>6</b>	<b>Bond- XXII (For Add Cap during 2006-07)</b>				
	Gross Loan opening		0.00	114.01	114.01
	Cumulative Repayment upto DOCO/previous year		0.00	0.00	0.00
	Net Loan-Opening		0.00	114.01	114.01
	Additions during the year		114.01	0.00	0.00
	Repayment during the year		0.00	0.00	0.00
	Net Loan-Closing		114.01	114.01	114.01
	Average Loan		57.01	114.01	114.01
	Rate of Interest		8.68%	8.68%	8.68%
	Interest		4.95	9.90	9.90
	Repayment Schedule		12 Annual Instalments from 7.12.2010		
	<b>Total Loan</b>				
	Gross Loan opening	2261.00	2628.53	2742.54	2742.54
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	4.42	65.58
	Net Loan-Opening	2261.00	2628.53	2738.12	2676.96
	Additions during the year	367.53	114.01	0.00	0.00
	Repayment during the year	0.00	4.42	61.17	133.87
	Net Loan-Closing	2628.53	2738.12	2676.96	2543.09
	Average Loan	2444.77	2683.33	2707.54	2610.02
	Rate of Interest	7.19%	7.29%	7.32%	7.33%
	<b>Interest</b>	175.78	195.51	198.18	191.43

2nos of 220 kV bays at Abdullapur sub-station

(Rs. in lakh)

	Details of Loan	2006-07	2007-08	2008-09
1	<b>Bond- XVIII</b>			
	Gross Loan opening	223.62	223.62	223.62
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	223.62	223.62	223.62
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	223.62	223.62	223.62
	Average Loan	223.62	223.62	223.62
	Rate of Interest	8.15%	8.15%	8.15%
	Interest	18.23	18.23	18.23
	Repayment Schedule	12 annual instalments from 9-3-2010		
2	<b>Bond- XXII (for addcap during 2006-07)</b>			
	Gross Loan opening	0.00	38.45	38.45
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	38.45	38.45
	Additions during the year	38.45	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	38.45	38.45	38.45
	Average Loan	19.23	38.45	38.45
	Rate of Interest	8.68%	8.68%	8.68%
	Interest	1.67	3.34	3.34
	Repayment Schedule	12 annual instalments from 7-12-2010		
	<b>Total Loan</b>			
	Gross Loan opening	223.62	262.07	262.07
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	223.62	262.07	262.07
	Additions during the year	38.45	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	262.07	262.07	262.07
	Average Loan	242.85	262.07	262.07
	Rate of Interest	8.19%	8.23%	8.23%
	Interest	19.89	21.56	21.56