

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Coram:**

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

**Petition No. 27/2009**

**In the matter of**

Determination of revised transmission tariff considering additional capitalization incurred during 2007-08 for 400 kV D/C Agra-Bassi transmission line (Ckt-III and II) along with associated bays under Northern Region System Strengthening Scheme-II for the tariff block 2004-09.

**And in the matter of**

Power Grid Corporation of India Limited, Gurgaon

**..Petitioner**

Vs

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 Purchase Centre, 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 Limited, New 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 V.V.Sharma, PGCIL
3. Shri A.K.Nagpal, PGCIL
4. Shri B.C.Pant, PGCIL
5. Shri M.M.Mondal, PGCIL
6. Shri Mohd. Mohsin, PGCIL
7. Shri V.K.Gupta, JVVNL
8. Shri S.N.Singh, UPPCL
9. Shri Atul Pasrija, HPPC

**ORDER**  
**(DATE OF HEARING: 21.4.2009)**

This petition has been filed for revision of transmission tariff on account of additional capital expenditure incurred during 2007-08 in respect of 400 kV D/C Agra-Bassi transmission line (Ckt-III and II) along with associated bays (the transmission line) under Northern Region System Strengthening Scheme-II (the transmission scheme) for the period from 1.4.2007 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 for the transmission scheme was accorded by Board of Directors of the petitioner company vide Memorandum dated 25.2.2004 at an estimated cost of Rs. 24778 lakh, which included IDC of Rs. 1501 lakh. Subsequently, the Board of Directors accorded approval for the revised cost estimate of Rs. 29281 lakh vide Memorandum dated 7.12.2007. The apportioned approved cost of the transmission line as per the revised cost estimate has been indicated as Rs. 22589.85 lakh. The transmission line has been declared under commercial operation w.e.f. 1.1.2007.

3. The transmission charges for the transmission line were approved by the Commission in its order dated 23.5.2008 in Petition No. 135/2007 for the period 1.1.2007 to 31.3.2009 based on capital cost of Rs. 20632.01 lakh as on the date of commercial operation. The summary of the transmission charges approved by the said order dated 23.5.2008 is extracted hereunder:

(Rs. in lakh)

	<b>2006-07(Pro rata)</b>	<b>2007-08</b>	<b>2008-09</b>
Depreciation	140.98	563.93	563.93
Interest on Loan	280.52	1095.12	1051.27
Return on Equity	216.65	866.60	866.60
Advance against Depreciation	0.00	0.00	0.00
Interest on Working Capital	17.96	71.92	72.73
O & M Expenses	57.16	237.41	247.27
<b>Total</b>	<b>713.27</b>	<b>2834.99</b>	<b>2801.80</b>

4. The relevant details of the approved apportioned cost, completion cost etc. of the transmission assets claimed by the petitioner are as under:

(Rs.in lakh)

Approved apportioned cost	Capital expenditure up to 1.1.2007	Additional Capitalization during 2006-07	Additional Capitalization during 2007-08	Capital expenditure as on 1.4.2008	Balance estimated expenditure	Estimated completion cost
22589.85	20632.01	0.00	293.98	20925.99	594.07	21520.06

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

(Rs.in lakh)

	<b>2007-08</b>	<b>2008-09</b>
Depreciation	568.37	572.81
Interest on Loan	1102.99	1066.66
Return on Equity	872.77	878.95
Advance against Depreciation	0.00	0.00
Interest on Working Capital	72.24	73.37
O & M Expenses	237.41	247.27
<b>Total</b>	<b>2853.78</b>	<b>2839.06</b>

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

(Rs. in lakh)

	<b>2007-08</b>	<b>2008-09</b>
Maintenance Spares	209.41	221.98
O & M expenses	19.78	20.61
Receivables	475.63	473.18
<b>Total</b>	<b>704.82</b>	<b>715.77</b>
Rate of Interest	10.25%	10.25%
Interest	<b>72.24</b>	<b>73.37</b>

7. No reply has been filed by the respondents.

## **CAPITAL COST**

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

Year	Amount (Rs. in lakh)	Nature and details of expenditure
2007-08	293.98	Retention and balance payments

9. It is found that the additional capital expenditure claimed is in respect of retention and balance payments. These are part of the deferred liabilities relating to works/services which have since materialised, 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 transmission asset, works out as under:

(Rs.in lakh)		
Admitted capital cost as on 1.1.2007	Additional Capitalization during 2007-08	Capital expenditure as on 1.4.2008
20632.01	293.98	20925.99

## **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 1.1.2007 (As per order dated 23.5.2008)	Notional additional equity during 2007-08	Average equity for 2007-08	Equity as on 1.4.2008
6190.01	88.19	6234.11	6278.20

## **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 the table under para 11 above has been considered. The tariff for the years 2007-08 has been allowed on average equity. Accordingly, revised return on equity allowed each year is given as under:

(Rs. in lakh)

Return on equity	
2007-08	2008-09
872.77	878.95

## **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 23.5.2008 in Petition No.135/2007 have been considered. There is no addition of actual loan for the year 2007-08.

(b) Notional loan arising out of additional capital expenditure for the year 2007-08 has been added in loan amount as on 1.1.2007 to arrive at total notional loan. This adjusted gross loan is considered as normative loan for tariff calculations.

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

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

(d) Moratorium in repayment of loan is considered with reference to normative loan and if the normative repayment of loan during the year is

less than the depreciation including Advance Against Depreciation during the year, then depreciation including Advance Against Depreciation during the year is deemed as normative repayment of loan during the year.

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

16. Based on above, the revised year-wise interest on loan has been worked out as under:

(Rs. in lakh)		
Details	2007-08	2008-09
Gross Normative Loan-Opening	14442.0 0	14647.7 9
Cumulative Repayment up to Previous Year/date of commercial operation	140.98	709.35
Net Loan-Opening	14301.0 2	13938.4 4
Addition due to Additional Capitalisation	205.79	-
Repayment during the year	568.37	572.81
Net Loan-Closing	13938.4 4	13365.6 3
Average Loan	14119.7 3	13652.0 3
Weighted Average Rate of Interest on Loan	7.81%	7.81%
Interest	<b>1102.99</b>	<b>1066.66</b>

17. The detailed calculations in support of the weighted average rate of interest are contained in Annexure 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 Variation up to 31.3.2004 already allowed by the Central Government/Commission.

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

(d) 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 has been worked out as below:

(Rs. in lakh)

	<b>2007-08</b>	<b>2008-09</b>
Rate of Depreciation	2.7353 %	2.7373%
Depreciable Value	18701.1 0	18833.39
Balance Useful life of the asset	-	-
Remaining Depreciable Value	18560.1 2	18124.04
<b>Depreciation</b>	<b>568.37</b>	<b>572.81</b>

### **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. The petitioner has not claimed Advance Against Depreciation and, thereafter, Advance Against Depreciation has not been considered.

### **OPERATION & MAINTENANCE EXPENSES**

23. 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

24. O&M expenses as taken for the tariff calculations as per order dated 23.5.2008 in Petition No. 135/2007 have been considered, since line length and number of bays remain unchanged.

### **INTEREST ON WORKING CAPITAL**

25. 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. 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 23.5.2008 in Petition No. 135/2007 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 1.4.2006, which is in accordance with the 2004 regulations and has been allowed.

26. The necessary computations in support of revised interest on working capital, as revised, are appended herein below:

(Rs. in lakh)		
	<b>2007-08</b>	<b>2008-09</b>
Maintenance Spares	209.41	221.98
O & M expenses	19.78	20.61
Receivables	475.63	473.17
Total	704.83	715.76
Rate of interest	10.25%	10.25%
Interest	<b>72.25</b>	<b>73.37</b>

### **TRANSMISSION CHARGES**

27. The revised transmission charges being allowed for the transmission line for the years 2007-08 and 2008-09 are summarised below:

(Rs. in lakh)		
	<b>2007-08</b>	<b>2008-09</b>
Depreciation	568.37	572.81
Interest on Loan	1102.99	1066.66
Return on Equity	872.77	878.95
Advance against Depreciation	0.00	0.00
Interest on Working Capital	72.25	73.37
O & M Expenses	<b>237.41</b>	<b>247.27</b>
<b>Total</b>	<b>2853.78</b>	<b>2839.05</b>

28. The petitioner shall recover from the respondents the additional transmission charges in one instalment. 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.

29. 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.

30. This order disposes of Petition No. 27/2009.

**Sd/-**                      **sd/-**                      **sd/-**                      **sd/-**  
**(V.S.VERMA)** **(S.JAYARAMAN)** **(R.KRISHNAMOORTHY)** **(DR.PRAMOD DEO)**  
**MEMBER**            **MEMBER**            **MEMBER**            **CHAIRPERSON**  
**New Delhi dated the 9<sup>th</sup> June 2009**

**Annexure**

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

(Rs. in lakh)				
	Details of Loan	2006-07	2007-08	2008-09
<b>1</b>	<b>Bond XV</b>			
	Gross Loan opening	229.00	229.00	229.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	19.08
	Net Loan-Opening	229.00	229.00	209.92
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	19.08	19.08
	Net Loan-Closing	229.00	209.92	190.84
	Average Loan	229.00	219.46	200.38
	Rate of Interest	6.68%	6.68%	6.68%
	Interest	15.30	14.66	13.39
	Repayment Schedule	12 Annual instalments from 23. 2.2008		
<b>2</b>	<b>Bond XVII</b>			
	Gross Loan opening	9627.00	9627.00	9627.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	9627.00	9627.00	9627.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	9627.00	9627.00	9627.00
	Average Loan	9627.00	9627.00	9627.00
	Rate of Interest	7.39%	7.39%	7.39%
	Interest	711.44	711.44	711.44
	Repayment Schedule	10 Annual instalments from 22. 9.2009		
<b>3</b>	<b>Bond XVIII</b>			
	Gross Loan opening	1300.00	1300.00	1300.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	1300.00	1300.00	1300.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	1300.00	1300.00	1300.00
	Average Loan	1300.00	1300.00	1300.00
	Rate of Interest	8.15%	8.15%	8.15%
	Interest	105.95	105.95	105.95
	Repayment Schedule	12 Annual instalments from 9. 3.2010		
<b>4</b>	<b>Bond XIX</b>			

	Gross Loan opening	600.00	600.00	600.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	600.00	600.00	600.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	600.00	600.00	600.00
	Average Loan	600.00	600.00	600.00
	Rate of Interest	9.25%	9.25%	9.25%
	Interest	55.50	55.50	55.50
	Repayment Schedule	12 Annual Installments from 24. 7.2010		
<b>5</b>	<b>Bond XX</b>			
	Gross Loan opening	2520.00	2520.00	2520.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	2520.00	2520.00	2520.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	2520.00	2520.00	2520.00
	Average Loan	2520.00	2520.00	2520.00
	Rate of Interest	8.93%	8.93%	8.93%
	Interest	225.04	225.04	225.04
	Repayment Schedule	12 Annual Installments from 7. 9.2010		
<b>6</b>	<b>Bond XXI</b>			
	Gross Loan opening	100.00	100.00	100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	100.00	100.00	100.00
	Additions during the year	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	100.00	100.00	100.00
	Average Loan	100.00	100.00	100.00
	Rate of Interest	8.73%	8.73%	8.73%
	Interest	8.73	8.73	8.73
	Repayment Schedule	12 Annual Installments from 11.10.2010		
<b>7</b>	<b>Bond XXIII (wef 09-02-2007)</b>			
	Gross Loan opening	0.00	66.00	66.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00
	Net Loan-Opening	0.00	66.00	66.00
	Additions during the year	66.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00
	Net Loan-Closing	66.00	66.00	66.00
	Average Loan	33.00	66.00	66.00
	Rate of Interest	9.25%	9.25%	9.25%
	Interest	3.05	6.11	6.11
	Repayment Schedule	12 Annual Installments from 09.02.2011		
	Gross Loan opening	14376.00	14442.00	14442.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	19.08
	Net Loan-Opening	14376.00	14442.00	14422.92
	Additions during the year	66.00	0.00	0.00
	Repayment during the year	0.00	19.08	19.08
	Net Loan-Closing	14442.00	14422.92	14403.84
	Average Loan	14409.00	14432.46	14413.38
	Rate of Interest	7.81%	7.81%	7.81%
	Interest	1125.00	1127.42	1126.14