

**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. 168/2008**

**In the matter of**

Petition for approval of final transmission tariff and additional capital expenditure up to 31.3.2008 for 400 kV Bina-Nagda D/C transmission line along with associated bay equipment at Nagda and Bina in Western Region from 1.11.2007 to 31.3.2009.

**And in the matter of**

Power Grid Corporation of India Limited, Gurgaon      **..Petitioner**  
Vs

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

**.....Respondents**

**The following were present:**

1. Shri U.K.Tyagi, PGCIL
2. Shri M.M.Mondal, PGCIL
3. Shri S.K.Niranjan, PGCIL
4. Shri Prashant Sharma, PGCIL

**ORDER  
(DATE OF HEARING: 23.4.2009)**

The application has been made for approval of tariff for 400 kV Bina-Nagda D/C transmission line along with associated bay equipment at Nagda and Bina (the transmission line) in Western Region from 1.11.2007 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") after accounting for additional capitalization during 2007-08. 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 line was accorded by Board of Directors of the petitioner company vide its Memorandum dated 13.7.2004 at an estimated cost of Rs. 26693 lakh, which includes IDC of Rs. 1467 lakh. Subsequently, approval for the revised cost estimate was accorded by Board of Directors vide letter dated 3.12.2007 for an estimated cost of Rs. 38780 lakh, which included IDC of Rs. 2163 lakh.

3. The transmission line was declared under commercial operation on 1.11.2007. The provisional transmission charges for transmission line were approved by the Commission in its order dated 22.1.2008 in Petition No.162/2007 based on actual expenditure of Rs. 32319.64 lakh which was stated to be on the date of the commercial operation. The approved cost and other details of cost submitted by the petitioner are as under:

(Rs. in lakh)

Revised approved cost	Expenditure up to date of commercial operation	Expenditure from 1.11.2007 to 31.3.2008	Expenditure up to 31.3.2008	Balance estimated expenditure	Estimated completion cost
38780.50	32400.50	565.17	32965.67	2379.63	35345.30

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

(Rs. in lakh)

	2007-08 (Pro rata)	2008-09
Depreciation	365.38	884.17
Interest on Loan	874.10	2058.97
Return on Equity	575.30	1392.59
Advance against Depreciation	0.00	0.00
Interest on Working Capital	58.55	141.50
O & M Expenses	122.87	307.24
<b>Total</b>	<b>1996.20</b>	<b>4784.47</b>

5. 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 (Pro rata)</b>	<b>2008-09</b>
Maintenance Spares	324.01	332.11
O & M expenses	24.57	25.60
Receivables	798.48	797.41
Total	1147.06	1155.12
Rate of Interest	12.25%	12.25%
<b>Interest</b>	<b>58.55</b>	<b>141.50</b>

6. The reply to the petition has been filed by Madhya Pradesh Power Trading Company Ltd. No comments or suggestions have been received from the general public in response to the notices published by the petitioner under section 64 of the Electricity Act, 2003.

### **CAPITAL COST**

7. As per clause (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.

8. The petitioner has claimed additional capitalization of Rs.565.17 lakh on works for the period from 1.11.2007 to 31.3.2008 over the capital expenditure of Rs. 32400.50 lakh as on the date of commercial operation.

### **Additional Capitalization 2007-08**

9. 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.”

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

Year 2007-08	Nature of expenditure	Justification
1.11.2007 to 31.3.2008	Transmission line = Rs. 565.17 lakh	Price variation payments, works completed but billed after the date of commercial operation
	Total = Rs. 565.17 lakh	

11. Since the additional expenditure is within the approved scope of work, it has been found to be in order. Therefore, audited capital expenditure of Rs. 565.17 lakh from the date of commercial operation to 31.3.2008 has been considered for the purpose of tariff.

**TOTAL CAPITAL COST**

12. Against the above background, gross block of Rs. 32965.67 lakh as on 31.3.2008 has been worked out for the purpose of tariff over the gross block of Rs.32400.50 lakh as on the date of commercial operation, after accounting for additional capitalisation of Rs. 565.17 lakh for the year 2007-08.

**DEBT- EQUITY RATIO**

13. Clause (2) of Regulation 54 of the 2004 regulations *inter alia* provides that,-

“(2) In case of the transmission system for which investment approval was accorded prior to 1.4.2004 and which are likely to be declared under commercial operation during the period 1.4.2004 to 31.3.2009, debt and equity in the ratio of 70:30 shall be considered:

Provided that where equity actually employed to finance the project is less than 30%, the actual debt and equity shall be considered for determination of tariff:

Provided further that the Commission may in appropriate cases consider equity higher than 30% for determination of tariff, where the transmission licensee is able to establish to the satisfaction of the Commission that deployment of equity higher than 30% was in the interest of general public.”

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

15. The petitioner has considered debt-equity ratio of 68.82:30.18 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 in accordance with the 2004 regulations. In our calculations, debt-equity ratio of 70:30 has been considered for the expenditure on the date of commercial operation and for additional capital expenditure. Accordingly, for the purpose of tariff, an amount of Rs. 9720.15 lakh has been considered as equity as on 1.11.2007 and Rs. 9889.70 lakh as on 1.4.2008.

### **RETURN ON EQUITY**

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

17. For the reasons recorded in para 15 above, equity of Rs. 9720.15 lakh has been considered as on 1.11.2007 and from 1.4.2008 to 31.3.2009, equity of Rs. 9889.70 lakh has been considered. However, tariff for the period 1.11.2007 to 31.3.2008 has been allowed on average equity of Rs. 9804.93 lakh. Accordingly, the petitioner shall be entitled to return on equity of Rs.571.95 lakh during 2007-08 on *pro rata* basis and Rs.1384.56 lakh during 2008-09.

### **INTEREST ON LOAN**

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

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

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

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

- (i) Gross amount of loan, repayment of instalments as per the petition and loan reconciliation statement of 2007-08 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 capitalisation from the date of commercial operation to 31.3.2008 has been added to 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 including AAD 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.

(vi) Short term loan from ICICI was replaced by Bond XXVI w.e.f. 7.3.2008. Therefore, for the year 2007-08, weighted average rate of interest based on number of days for these loans has been considered while working out the weighted average rate of interest on actual loans.

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

Details of loan	(Rs. in lakh)	
	2007-08 (Pro rata)	2008-09
Opening Gross Loan	22680.35	23075.97
Cumulative Repayment up to date of commercial operation/previous year	0.00	365.38
Net Loan-Opening	22680.35	22710.59
Additions due to Additional Capitalisation	395.62	-
Repayment during the year	365.38	884.17
Net Loan-Closing	22710.59	21826.42
Average Loan	22695.47	22268.50
Weighted Average Rate of Interest on Loan	9.27%	9.27%
<b>Interest</b>	<b>876.32</b>	<b>2064.29</b>

21. The detailed calculations in support of the weighted average rate of interest are contained in Annexure attached.

### **DEPRECIATION**

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

- (i) The value base for the purpose of depreciation shall be the historical cost of the asset.
- (ii) Depreciation shall be calculated annually based on straight line method over the useful life of the asset and at the rates prescribed in

Appendix II to these regulations. The residual value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the historical capital cost of the asset. Land is not a depreciable asset and its cost shall be excluded from the capital cost while computing 90% of the historical cost of the asset. The historical capital cost of the asset shall include additional capitalisation on account of Foreign Exchange Rate Variation up to 31.3.2004 already allowed by the Central Government/Commission.

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

23. Deprecation allowed has been worked out as shown below:

(Rs. in lakh)		
Details of Depreciation	2007-08 (Pro rata)	2008-09
Gross block at the beginning of the period	32400.50	32965.67
Additional Capitalisation during the period	565.17	-
Gross Block at the end of the period	32400.50	32965.67
Rate of Depreciation	2.6831%	2.6821%
Depreciable Value (90%)	29414.78	29669.10
Balance Useful life of the asset	-	-
Remaining Depreciable Value	29414.78	29303.72
<b>Depreciation</b>	<b>365.38</b>	<b>884.17</b>

### **ADVANCE AGAINST DEPRECIATION**

24. 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

25. 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.

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

### **OPERATION & MAINTENANCE EXPENSES**

27. 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

28. The petitioner has claimed O & M expenses for 660.31 Ckt km line length and 4 bays which have been allowed. Accordingly, the petitioner's entitlement to O & M expenses has been worked out as given hereunder:

	(Rs. in lakh)	
	Year	
	2007-08 (Pro rata)	2008-09
O&M expenses for 660.31 Ckt km line length	70.16	175.64
O&M expenses for 4 bays	52.72	131.60
<b>Total</b>	<b>122.87</b>	<b>307.24</b>

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

30. 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, the capital expenditure on the date of commercial operation is Rs. 32400.50 lakh, 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. 324.01 lakh as on 1.4.2008.

#### **(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 @ 12.25% based on SBI PLR as on 1.4.2007, which is in accordance with the 2004 regulations and has been allowed.

31. The necessary computations in support of interest on working capital are appended hereinbelow:

	(Rs. in lakh)	
	<b>2007-08 (Pro rata)</b>	<b>2008-09</b>
Maintenance Spares	324.01	332.11
O & M expenses	24.57	25.60
Receivables	798.02	796.95
Total	1146.60	1154.66
Rate of Interest	12.25%	12.25%
<b>Interest</b>	<b>58.52</b>	<b>141.45</b>



**Annexure**  
**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN**  
(Rs. in lakh)

	Details of Loan	2007-08	2008-09
<b>1</b>	<b>Bond-XVII</b>		
	Gross Loan opening	171.00	171.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00
	Net Loan-Opening	171.00	171.00
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	171.00	171.00
	Average Loan	171.00	171.00
	Rate of Interest	7.39%	7.39%
	Interest	12.64	12.64
	Repayment Schedule	10 Annual instalments from 22.09.2009	
<b>2</b>	<b>Bond-XX</b>		
	Gross Loan opening	5004.00	5004.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00
	Net Loan-Opening	5004.00	5004.00
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	5004.00	5004.00
	Average Loan	5004.00	5004.00
	Rate of Interest	8.93%	8.93%
	Interest	446.86	446.86
	Repayment Schedule	12 Annual instalments from 07-09-2010	
<b>3</b>	<b>Bond-XXI</b>		
	Gross Loan opening	1982.00	1982.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00
	Net Loan-Opening	1982.00	1982.00
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	1982.00	1982.00
	Average Loan	1982.00	1982.00
	Rate of Interest	8.73%	8.73%
	Interest	173.03	173.03
	Repayment Schedule	12 Annual instalments from 11-10-2010	
<b>4</b>	<b>Bond-XXII</b>		
	Gross Loan opening	4080.00	4080.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00
	Net Loan-Opening	4080.00	4080.00
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	4080.00	4080.00
	Average Loan	4080.00	4080.00
	Rate of Interest	8.68%	8.68%
	Interest	354.14	354.14
	Repayment Schedule	12 Annual instalments from 07-12-2010	
<b>5</b>	<b>Bond-XXIII</b>		
	Gross Loan opening	4500.00	4500.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00

	Net Loan-Opening	4500.00	4500.00
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	4500.00	4500.00
	Average Loan	4500.00	4500.00
	Rate of Interest	9.25%	9.25%
	Interest	416.25	416.25
	Repayment Schedule	12 Annual instalments from 09-02-2011	
<b>6</b>	<b>Bond- XXIV</b>		
	Gross Loan opening	487.00	487.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00
	Net Loan-Opening	487.00	487.00
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	487.00	487.00
	Average Loan	487.00	487.00
	Rate of Interest	9.95%	9.95%
	Interest	48.46	48.46
	Repayment Schedule	12 Annual instalments from 26-3-2011	
<b>7</b>	<b>Bond- XXV</b>		
	Gross Loan opening	6334.00	6334.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00
	Net Loan-Opening	6334.00	6334.00
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	6334.00	6334.00
	Average Loan	6334.00	6334.00
	Rate of Interest	10.10%	10.10%
	Interest	639.73	639.73
	Repayment Schedule	12 Annual instalments from 12.06.2011	
<b>8</b>	<b>Bond-XXVI w.e.f. 07.03.2008 in replacement of short term loan from ICICI from 01.11.2007 to 06.03.2008</b>		
	Gross Loan opening	65.00	65.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00
	Net Loan-Opening	65.00	65.00
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	65.00	65.00
	Average Loan	65.00	65.00
	Rate of Interest	8.21%	9.30%
	Interest	5.34	6.05
	Repayment Schedule	12 Annual instalments from 7-3-2012 (Bond-XXVI)	
	<b>Total Loan</b>		
	Gross Loan opening	22623.00	22623.00
	Cumulative Repayment upto DOCO	0.00	0.00
	Net Loan-Opening	22623.00	22623.00
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	22623.00	22623.00
	Average Loan	22623.00	22623.00
	Rate of Interest	9.2669%	9.2700%
	<b>Interest</b>	2096.45	2097.15