

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram:

1. **Shri Ashok Basu, Chairperson**
2. **Shri Bhanu Bhushan, Member**
3. **Shri A.H. Jung, Member**

Petition No.138/2005

In the matter of

Approval of transmission tariff for 500 MW HVDC back-to-back station at Gajuwaka (Pole II) (inter-regional asset of Eastern Region & Southern Region) and 400 kV D/C Vijaywada-Gajuwaka transmission line (Southern Region) under augmentation of capacity of Gajuwaka HVDC back-to-back project (500 MW) for the period from 1.3.2005 to 31.3.2009.

And in the matter of

Power Grid Corporation of India Limited

...Petitioner

Vs

1. Karnataka Power Transmission Corporation Ltd., Bangalore
2. Transmission Corporation of Andhra Pradesh Ltd. Hyderabad
3. Kerala State Electricity Board, Thiruvananthapuram
4. Tamil Nadu Electricity Board, Chennai
5. Electricity Deptt., Govt. Of Pondicherry, Pondicherry
6. Bihar State Electricity Board, Patna
7. West Bengal State Electricity Board, Kolkata,
8. Grid Corporation of Orissa Ltd., Bhubaneshwar
9. Damodar Valley Corporation, Kolkata
10. Power Department, Govt of Sikkim, Gangtok
11. Jharkhand State Electricity Board, Ranchi

..Respondents

The following were present:

1. Shri U.K. Tyagi, PGCIL
2. Shri P.C. Pankaj, PGCIL
3. Shri Rakesh Prasad, PGCIL
4. Shri C.Kannan, PGCIL
5. Shri R.B.Sharma, Advocate, BSEB
6. Shri S. Sowmyanarayan, TNEB

ORDER

(DATE OF HEARING: 30.3.2006)

This petition has been filed for approval of tariff for 500 MW HVDC back-to-back station (Pole II) at Gajuwaka (Inter-Regional asset of Eastern Region and Southern Region) (also briefly referred to as "Pole II") and 400 kV D/C Vijaywada-

Gajuwaka transmission line along with bay extension and equipments at Vijaywada and Gajuwaka (Southern Region) (also briefly referred to as “the transmission line”) under augmentation of capacity of Gajuwaka HVDC back-to-back project from 1.3.2005 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 for the period 1.3.2005 to 31.3.2005. 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 administrative approval and expenditure sanction for augmentation of capacity of Gajuwaka HVDC back-to-back project (500 MW) was accorded by Ministry of Power vide letter dated 22.1.2002 at an estimated cost of Rs.76925 lakh, including IDC of Rs. 9612 lakh, based on 4th quarter 2002 price level, which, *inter-alia*, included 500 MW HVDC back-to-back station (Pole-II) and Gajuwaka -Vijaywada 400 kV D/C transmission line with 63 MVAR reactors at both ends. . The provisional transmission charges for the two assets were decided by the Commission in its order dated 6.7.2006 in I. A. No.74/2005. At present, we are considering the main petition for approval of tariff from 1.3.2005, the date of commercial operation, with line length of 629.56 ckt kms (for O & M purpose) of 400 kV D/C Gajuwaka-Vijaywada transmission line.

3. The apportioned approved cost of the transmission assets is stated to be as under:

Name of the transmission asset	Apportioned approved
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	cost (Rs. in lakh)
500 MW HVDC back-to-back station at Gajuwaka	35895
400 kV D/C Vijayawada-Gajuwaka transmission line along with 63 MVAR Reactors at both the ends	29896
Provision of 50% Series Capacitors on existing Jeypore-Gajuwaka 400 k V D/C line at Jeypore end	11134 (yet to be commissioned)
Provision of 40% Series Capacitors on existing Rengali –Indravati 400 kV S/C line at Indravati/Rengali end	
Provision of 40% Series Capacitors on the Meramundali-Jeypore 400 kV S/C line (being executed by petitioner) at Meramundali/Jeypore end.	
Total	76925

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

		(Rs.in lakh)									
	500 MW HVDC back-to-back station (Pole-II) at Gajuwaka (Inter-Regional system of ER & SR)	400 kV D/C Vijayawada-Gajuwaka transmission line along with bay extension and equipment at Vijaywada and Gajuwaka									
	2004-05 (1.3.2005 to 31.3.2005)	2005-06	2006-07	2007-08	2008-09	2004-05 (1.3.2005 to 31.3.2005)	2005-06	2006-07	2007-08	2008-09	
Depreciation	97.47	1204.48	1204.48	1204.48	1204.48	49.34	600.95	600.95	600.95	600.95	
Interest on Loan	75.42	888.28	838.28	774.92	701.55	111.42	1305.51	1259.04	1166.95	1060.85	
Return on Equity	105.29	1307.51	1307.51	1307.51	1307.51	71.71	906.37	906.37	906.37	906.37	
Advance against Depreciation	0.00	331.12	564.76	744.01	857.21	0.00	0.00	0.00	472.89	765.02	
Interest on Working Capital	8.67	112.53	118.34	123.11	126.72	6.53	79.45	80.35	88.74	93.88	
O & M Expenses	37.49	468.00	486.72	506.08	526.40	21.28	265.58	276.55	287.06	299.06	
Total	324.34	4311.91	4520.09	4660.11	4723.87	260.28	3157.86	3123.26	3522.73	3726.14	

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

		(Rs.in lakh)									
	500 MW HVDC back-to-back station (Pole-II) at Gajuwaka (Inter-Regional system of ER & SR)	400 kV D/C Vijayawada-Gajuwaka transmission line along with bay extension and equipment at Vijaywada and Gajuwaka									
	2004-05 (1.3.2005 to 31.3.2005)	2005-06	2006-07	2007-08	2008-09	2004-05 (1.3.2005 to 31.3.2005)	2005-06	2006-07	2007-08	2008-09	
Maintenance Spares	328.86	340.18	360.60	382.22	405.16	222.31	226.70	240.30	254.72	270.01	
O & M expenses	37.49	39.00	40.56	42.17	43.87	21.28	22.13	23.05	23.92	24.92	
Receivables	648.69	718.65	753.35	776.68	787.31	520.55	526.31	520.54	587.12	621.02	
Total	1015.04	1097.83	1154.51	1201.07	1236.34	764.15	775.14	783.89	865.77	915.95	
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	
Interest	8.67	112.53	118.34	123.11	126.72	6.53	79.45	80.35	88.74	93.88	

6. The reply to the petition has been filed by Tamil Nadu Electricity Board, Bihar State Electricity Board, Kerala State Electricity Board and Karanataka Power Transmission Corporation Ltd. 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

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 the total capital expenditure of Rs. 33853.24 lakh and Rs. 22559.06 lakh for Pole-II and the transmission line respectively after accounting for additional capitalization of Rs. 1935.05 lakh and Rs. 655.47 lakh on works for the period from 1.3.2005 to 31.3.2005 over the capital expenditure of Rs 31918.19 lakh and Rs. 21903.59 lakh as on the date of commercial operation. The petitioner has furnished the following details of capital expenditure:

(Rs. in lakh)

	500 MW HVDC back-to-back station (Pole-II) at Gajuwaka (Inter-Regional system of ER & SR)	400 kV D/C Vijayawada-Gajuwaka transmission line along with bay extension and equipment at Vijaywada and Gajuwaka
Expenditure up to date of commercial operation (1.3.2005)	31918.19	21903.59
Gross Block on the date of commercial operation	31918.19	21903.59
Expenditure from date of commercial operation to 31.3.2005 (Audited)	1935.05	655.47
Gross Block on 31.3.2005	33853.24	22559.06
Expenditure from 1.4.2005 to 31.8.2005	2675.62	1361.22
Gross Block on 31.8.2005	36528.86	23920.28
Balance anticipated expenditure	800.13	913.80
Total estimated completion cost	37328.99	24834.08
Value of mandatory spares included in the capital cost	562.83	47.32

. Additional capitalization -2004-05

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 petitioner has claimed additional capitalization of Rs. 1935.05 lakh and Rs. 655.47 lakh for Pole II and the transmission line respectively for the period 1.3.2005 to 31.3.2005. The details submitted by the petitioner in support of its claim for additional capital expenditure are given hereunder:

500 MW HVDC back-to-back station (Pole-II) at Gajuwaka (Inter-Regional system of ER & SR)			400 kV D/C Vijayawada-Gajuwaka transmission line along with bay extension and equipment at Vijaywada and Gajuwaka		
Year	Amount (Rs. in lakh)	Nature of expenditure	Year	Amount (Rs. in lakh)	Nature of expenditure
2004-05	1935.05	Sub-station	2004-05	655.47	Sub-station= Rs. 92.81 lakh Transmission line= Rs. 562.66 lakh

11. The above additional capital expenditure claimed is within the original scope of work and found to be in order as it was against the committed liability. Accordingly, the additional capital expenditure of Rs. 1935.05 lakh and Rs. 655.47 lakh for Pole II and the transmission line respectively, has been allowed.

TOTAL CAPITAL COST

12. The representative of the Tamil Nadu Electricity Board has submitted that in respect of 500 MW HVDC back-to-back station (Pole-II) at Gajuwaka against the apportioned approved cost of Rs. 35896 lakh, the estimated completion cost as per auditor's certificate is Rs. 37329 lakh and has requested to restrict the completion cost to apportioned approved cost. In this connection, the petitioner submitted that increase in expected completion cost of 500 MW HVDC back-to-back station (Pole-II) at Gajuwaka is mainly due to increase in award cost of HVDC package against the estimated cost received in competitive bidding and this was beyond their control.

13. The gross block of Rs. 33853.24 lakh and 22559.06 lakh for Pole II and the transmission line respectively as on 31.3.2005 has been worked out for the purpose of tariff over the gross block of Rs. 31918.19 lakh and 21903.59 lakh for Pole II and the transmission line respectively as on the date of commercial operation subject to the condition that the actual cost of the entire system, including the cost of the assets yet to be commissioned, does not exceed the cost approved by the competent authority.

The petitioner is granted liberty to claim revision of tariff based on the additional capital expenditure incurred beyond 31.3.2005, in accordance with law.

DEBT- EQUITY RATIO

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

“(2) In case of the transmission systems 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.”

15. The 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.

16. The petitioner has considered debt-equity ratio of 72.71:27.29 and 73.44:26.56 for Pole II and the transmission line respectively as actually deployed on the date of commercial operation. The petitioner has further considered the entire amount of additional capitalization against equity.

17. We have considered debt-equity ratio as on the date of commercial operation as claimed by the petitioner. The additional capitalisation on works of Rs. 1935.05 lakh and Rs. 655.47 lakh has been segregated into debt and equity in the normative debt-equity ratio of 70:30 in accordance with Note 1 below Regulation 53. Accordingly, for the purpose of tariff, amounts of Rs.8710.16 lakh and Rs. 5818.59 lakh have been considered as equity as on 1.3.2005 for Pole II and the transmission line respectively

and Rs. 9290.68 lakh and Rs. 6015.23 lakh respectively as on 1.4.2005. Therefore, debt-equity ratio and the equity considered for the purpose of tariff in each case is as under:

Name of the transmission asset	Debt-equity ratio		Equity (Rs. in lakh)	
	As on 1.3.2005	As on 1.4.2005	As on 1.3.2005	As on 1.4.2005
(i) 500 MW HVDC back-to-back station (Pole-II) at Gajuwaka (Inter-Regional system of ER & SR)	72.71:27.29	72.56:27.44	8710.16	9290.68
(ii) 400 kV D/C Vijayawada-Gajuwaka transmission line along with bay extension and equipment at Vijaywada and Gajuwaka	73.44:26.56	73.34:26.66	5818.59	6015.23

RETURN ON EQUITY

18. 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.

19. The petitioner has claimed return on equity after considering the entire additional capitalization to have been financed out of equity. For the reasons recorded in para 18 above, equity as given in the table under that para has been considered. However, tariff for the period 1.3.2005 to 31.3.2005 has been allowed on average equity of Rs.9000.42 lakh and Rs. 5916.91 lakh respectively. Accordingly, return on equity each year during the tariff period is given hereunder:

Name of the transmission asset	(Rs. in lakh)	
	Return in Equity	
	2004-05 (1.3.2005 to 31.3.2005)	2005-09 (each year)

(i) 500 MW HVDC back-to-back station (Pole-II) at Gajuwaka (Inter-Regional system of ER & SR)	105.00	1300.69
(ii) 400 kV D/C Vijayawada-Gajuwaka transmission line along with bay extension and equipment at Vijaywada and Gajuwaka	69.03	842.13

INTEREST ON LOAN

20. 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.”

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

- (i) As on date of commercial operation, the actual loan has been considered.
- (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) Weighted average rate of interest on loan for respective years as per above has been multiplied to arrive at interest on loan.

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

- (i) Gross amount of loan, outstanding loan and repayment of instalments as per the loan allocation statement up to 2004-05 has been prepared on the basis of loan allocation details submitted by the petitioner and rate of interest as given in the petition. The same is used to work out weighted average rate of interest on actual loan. The gross loan as per loan reconciliation has been considered as gross loan as on date of commercial operation.
- (ii) Notional loan arising out of additional capitalization during the year 2004-05 has been considered.
- (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.
- (vi) OBC loan carry the floating rate of interest and rate of interest as applicable as on 1.3.2005 has been considered in the calculation, subject to mutual settlement between the parties in case of any change/resetting of the interest rate during the tariff period.
- (vii) In case of 500 MW HVDC back-to-back station (Pole-II) at Gajuwaka (inter-regional system of ER & SR) the total loan amount is a mix of domestic loan as well as foreign loan (SEB Sweden) This SEB loan has been drawn in different tranches. However, the petitioner has not indicated tranche-wise loan distribution. The repayment period and repayment frequency has been taken from the loan reconciliation statement and based on this, the given tranches have been proportionately divided into repayment instalments. The tranche wise interest rates have been taken from the SEB and exchange rates as provided by the petitioner have been considered.

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

	500 MW HVDC back-to-back station (Pole-II) at Gajuwaka (Inter-Regional system of ER & SR)					400 kV D/C Vijayawada-Gajuwaka transmission line along with bay extension and equipment at Vijayawada and Gajuwaka				
Details of loan	2004-05 (1.3.2005 to 31.3.2005)	2005-06	2006-07	2007-08	2008-09	2004-05 (1.3.2005 to 31.3.2005)	2005-06	2006-07	2007-08	2008-09
Interest on loan										
Opening Gross Loan	23208.03	24562.56	24562.56	24562.56	24562.56	16085.00	16543.83	16543.83	16543.83	16543.83
Cumulative Repayment	0.00	97.47	1694.88	3463.10	5410.48	0.00	49.34	650.29	1617.30	2826.24
Net Loan-Opening	23208.03	24465.09	22867.69	21099.46	19152.09	16085.00	16494.49	15893.54	14926.52	13717.59
Additions due to Additional Capitalisation	1354.54					458.83				
Repayment during the year	97.47	1597.41	1768.23	1947.37	2061.66	49.34	600.95	967.02	1208.94	1362.03
Net Loan-Closing	24465.09	22867.69	21099.46	19152.09	17090.43	16494.49	15893.54	14926.52	13717.59	12355.55
Average Loan	23836.56	23666.39	21983.57	20125.77	18121.26	16289.75	16194.02	15410.03	14322.06	13036.57
Weighted Average Rate of Interest on Loan	3.7193%	3.7512%	3.8110%	3.8482%	3.8691%	8.1680%	8.1644%	8.1451%	8.1212%	8.1124%
Interest	73.88	887.77	837.80	774.47	701.12	110.88	1322.14	1255.16	1163.13	1057.58

DEPRECIATION

24. 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.

25. The petitioner has claimed the depreciation on the capital cost of Rs. 31918.19 and Rs. 21903.59 lakh as on 1.3.2005 and at a capital cost of Rs. 33853.24 lakh and Rs. 22559.06 as on 1.4.2005 respectively and the subsequent years for Pole II and the transmission line..

26. The gross depreciable value of Pole II is Rs. 20467.92 lakh (0.9 x Rs. 33853.24 lakh) and of the transmission line is Rs. 20303.15 lakh (09 x Rs. 22559.06 lakh).

27. Depreciation allowed has been worked out as calculated below:

(Rs.in lakh)										
	500 MW HVDC back-to-back station (Pole-II) at Gajuwaka (Inter-Regional system of ER & SR)					400 kV D/C Vijayawada-Gajuwaka transmission line along with bay extension and equipment at Vijaywada and Gajuwaka				
Details of Depreciation	2004-05 (1.3.2005 to 31.3.2005)	2005-06	2006-07	2007-08	2008-09	2004-05 (1.3.2005 to 31.3.2005)	2005-06	2006-07	2007-08	2008-09
Gross block at the beginning of the period	31918.19	33853.24	33853.24	33853.24	33853.24	21903.59	22559.06	22559.06	22559.06	22559.06
Additional Capitalisation during the period	1935.05	0.00	0.00	0.00	0.00	655.47	0.00	0.00	0.00	0.00
Gross Block at the end of the period	33853.24	33853.24	33853.24	33853.24	33853.24	22559.06	22559.06	22559.06	22559.06	22559.06
Rate of Depreciation	3.5567%	3.5580%	3.5580%	3.5580%	3.5580%	2.6631%	2.6639%	2.6639%	2.6639%	2.6639%
Depreciable Value (90%)	29597.14	30467.92	30467.92	30467.92	30467.92	20008.19	20303.15	20303.15	20303.15	20303.15
Balance Useful life of the asset	-	-	-	-	-	-	-	-	-	-
Remaining Depreciable Value	29597.14	30370.44	28773.04	27004.81	25057.44	20008.19	20253.82	19652.87	18685.85	17476.91
Depreciation	97.47	1204.48	1204.48	1204.48	1204.48	49.34	600.95	600.95	600.95	600.95

ADVANCE AGAINST DEPRECIATION

28. 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

29. 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.

30. The petitioner has claimed Advance Against Depreciation in the following manner:

- (i) 1/10th of gross loan considered for tariff computation.
- (ii) Cumulative loan as well as repayment of notional loan considered during the year.
- (iii) Depreciation as claimed in the petition.

31. In our calculation, Advance Against Depreciation has been worked as under:

- (i) 1/10th of gross loan has been worked out from the gross notional loan as per para 23 above.
- (ii) Repayment of notional loan during the year has been considered as per para 23 above.
- (iii) Depreciation as worked out as per para 27 has been taken into account.

32. The details of Advance Against Depreciation allowed for the two assets is given hereunder:

(Rs. in lakh)										
	500 MW HVDC back-to-back station (Pole-II) at Gajuwaka (Inter-Regional system of ER & SR)					400 kV D/C Vijayawada-Gajuwaka transmission line along with bay extension and equipment at Vijaywada and Gajuwaka				
	2004-05	2005-06	2006-07	2007-08	2008-09	2004-05	2005-06	2006-07	2007-08	2008-09
1/10th of Gross Loan(s)										
Repayment of Loan	2320.80	2456.26	2456.26	2456.26	2456.26	1608.50	1654.38	1654.38	1654.38	1654.38
Minimum of the	97.47	1597.41	1768.23	1947.37	2061.66	49.34	600.95	967.02	1208.94	1362.03

above										
Depreciation during the year	97.47	1597.41	1768.23	1947.37	2061.66	49.34	600.95	967.02	1208.94	1362.03
(A) Difference	97.47	1204.48	1204.48	1204.48	1204.48	49.34	600.95	600.95	600.95	600.95
Cumulative Repayment of the Loan	0.00	392.92	563.74	742.89	857.18	0.00	0.00	366.06	607.99	761.08
Cumulative Depreciation/ Advance against Depreciation	97.47	1694.88	3463.10	5410.48	7472.14	49.34	650.29	1617.30	2826.24	4188.28
(B) Difference	97.47	1301.96	2899.36	4667.59	6614.96	49.34	650.29	1251.24	2218.26	3427.19
Advance Against Depreciation Minimum of (A) and (B)	0.00	392.92	563.74	742.89	857.18	0.00	0.00	366.06	607.99	761.08

OPERATION & MAINTENANCE EXPENSES

33. 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

34. The petitioner has claimed O & M expenses for 629.56 ckt- km of line length of the transmission line and 20 bays (16 for Pole II and 4 for the transmission line), which has been allowed. Accordingly, the petitioner's entitlement to O & M expenses has been worked out as given hereunder:

(Rs. in lakh)											
	500 MW HVDC back-to-back station (Pole-II) at Gajuwaka (Inter-Regional system of ER & SR)					400 kV D/C Vijayawada-Gajuwaka transmission line along with bay extension and equipment at Vijaywada and Gajuwaka					
	2004-05 (1.3.2005 to 31.3.2005)	2005-06	2006-07	2007-08	2007-08		2004-05 (1.3.2005 to 31.3.2005)	2005-06	2006-07	2007-08	2008-09
O&M expenses for line length	0.00	0.00	0.00	0.00	0.00	O&M expenses for 629.56 ckt-kms line length	11.91	148.58	154.87	160.54	167.46
O&M expenses for 16 bays	37.49	468.00	486.72	506.08	526.40	O&M expenses for 4 bays	9.37	117.00	121.68	126.52	131.60
TOTAL	37.49	468.00	486.72	506.08	526.40	TOTAL	21.28	265.58	276.55	287.06	299.06

35. 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

36. 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. 319.18 lakh and Rs. 219.04 lakh respectively as on 1.3.2005. The necessary details are given hereunder:

Name of the transmission asset	Date of Commercial Operation	Capital Expenditure (Rs. in lakh) on the date of commercial operation	Escalated spares Cost as on 1.4.2004 (Rs. in lakh)
(i) 500 MW HVDC back-to-back station (Pole-II) at Gajuwaka (Inter-Regional system of ER & SR)	1.3.2005	31918.19	319.18

(ii) 400 kV D/C Vijayawada-Gajuwaka transmission line along with bay extension and equipment at Vijaywada and Gajuwaka	1.3.2005	21903.59	219.04
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(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

1.4.2004, which is in accordance with the 2004 regulations and has been allowed.

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

(Rs. in lakh)

	500 MW HVDC back-to-back station (Pole-II) at Gajuwaka (Inter-Regional system of ER & SR)					400 kV D/C Vijayawada-Gajuwaka transmission line along with bay extension and equipment at Vijaywada and Gajuwaka				
	2004-05 (1.3.2005 to 31.3.2005)	2005-06	2006-07	2007-08	2008-09	2004-05 (1.3.2005 to 31.3.2005)	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	319.18	320.78	340.02	360.43	382.05	219.04	220.13	233.34	247.34	262.18
O & M expenses	37.49	39.00	40.56	42.17	43.87	21.28	22.13	23.05	23.92	24.92
Receivables	644.80	727.55	751.58	774.88	785.68	513.94	518.12	570.94	598.40	608.77
Total	1,001.48	1,087.33	1,132.17	1,177.48	1,211.60	754.26	760.39	827.33	869.66	895.87
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	8.55	111.45	116.05	120.69	124.19	6.44	77.94	84.80	89.14	91.83

TRANSMISSION CHARGES

38. A summary sheet showing basic details of capital cost and other related aspects is annexed to this order. The transmission charges being allowed for the transmission system are summarized below.

(Rs.in lakh)

	500 MW HVDC back-to-back station (Pole-II) at Gajuwaka (Inter-Regional system of ER & SR)					400 kV D/C Vijayawada-Gajuwaka transmission line along with bay extension and equipment at Vijaywada and Gajuwaka				
	2004-05 (1.3.2005 to 31.3.2005)	2005-06	2006-07	2007-08	2008-09	2004-05 (1.3.2005 to 31.3.2005)	2005-06	2006-07	2007-08	2008-09
Depreciation	97.47	1204.48	1204.48	1204.48	1204.48	49.34	600.95	600.95	600.95	600.95
Interest on Loan	73.88	887.77	837.80	774.47	701.12	110.88	1322.14	1255.16	1163.13	1057.58
Return on Equity	105.00	1300.69	1300.69	1300.69	1300.69	69.03	842.13	842.13	842.13	842.13
Advance against Depreciation	0.00	392.92	563.74	742.89	857.18	0.00	0.00	366.06	607.99	761.08
Interest on Working Capital	8.55	111.45	116.05	120.69	124.19	6.44	77.94	84.80	89.14	91.83
O & M Expenses	37.49	468.00	486.72	506.08	526.40	21.28	265.58	276.55	287.06	299.06

Total	322.40	4365.32	4509.49	4649.31	4714.06	256.97	3108.75	3425.66	3590.40	3652.63
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39. 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. The transmission charges for 500 MW HVDC back-to back station (Pole-II) shall be included in the regional transmission tariff for Eastern Region and Southern Region in the ratio of 50:50. The transmission charges for 400 kV D/C Vijaywada-Gajuwaka transmission line will be borne by the beneficiaries in Southern Region. These transmission charges shall be shared by the regional beneficiaries in accordance with the 2004 regulations.

40. The petitioner has sought approval for the reimbursement of expenditure of Rs.2, 41,635/- 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

41. The petitioner is already billing the respondents on provisional basis in accordance with the Commission's interim direction. The provisional billing of tariff shall be adjusted in the light of final tariff now approved by us.

42. This order disposes of Petition No.138/2005.

Sd-/
(A.H. JUNG)
MEMBER

sd-/
(BHANU BHUSHAN)
MEMBER

sd-/
(ASHOK BASU)
CHAIRPERSON

New Delhi dated the 23rd October 2006

SUMMARY SHEET

Name of the Element:		500 MW HVDC back-to-back station (Pole-II) at Gajuwaka (Inter-Regional system of ER & SR)			400 kV D/C Vijayawada-Gajuwaka transmission line along with bay extension and equipment at Vijaywada and Gajuwaka				
Actual DOCO:		1.3.2005			1.3.2005				
Tariff setting Period:		2004-09			2004-09				
								(Rs. in lakh)	
1	Capital Cost of the Project				31918.19				21903.59
2	Additional Capitalisation(works)				1935.05				655.47
	For the year 2004.05				1935.05				655.47
	Total				1935.05				655.47
3	Total Capital Cost as on 1.4.2005(2+3+4)				33853.24				22559.06
4	Means of Finance :								
	Debt	72.56%	24562.56				73.34%	16543.83	
	Equity	27.44%	9290.68				26.66%	6015.23	
	Total	100.00%	33853.24				100.00%	22559.06	
5	Gross Loan				24615.02				16566.35

	As on date of commercial operation			23208.03				16085.00	
	Notional loan corresponding to ACE during 2004-05			1406.99				481.35	
	Total			24615.02				16566.35	
6	Cumulative Repayment up to 31.3.2009 :				7487.95				4193.29
	Up to 1.3.2005			0.00				0.00	
	From 1.3.2005 to 31.3.2009			7487.95				4193.29	
	Total			7487.95				4193.29	
7	Balance Loan to be repaid beyond 31.3.2009 :				17127.07				12373.06
8	Depreciation recovered up to 31.3.2009 :				7487.95				4193.29
		Dep	AAD	Total		Dep	AAD	Total	
	From 1.3.2005 to 31.3.2009	4915.41	2572.54	7487.95		2453.14	1740.15	4193.29	
	Total			7487.95				4193.29	
9	Balance Depreciation to be recovered beyond 31.3.2009 :				22979.97				16109.87
	Capital cost for the purpose of Depreciation							21903.59	
				31918.19					
	ACE during 2004-05			1935.05				655.47	
	Capital cost as 1.4.2004			33853.24				22559.06	
	Less: Land Cost			0.00				0.00	
				33853.24				22559.06	
	90% of Capital Cost as above			30467.92				20303.15	
	Cum. Depreciation to be recovered up to 31.3.2009			7487.95				4193.29	
	Balance			22979.97				16109.87	