

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Coram:**

- 1. Shri Ashok Basu, Chairperson**
- 2. Shri Bhanu Bhushan, Member**

**Petition No.128/2006**

**In the matter of**

Approval of transmission tariff for 400 kV D/C Kaiga-Narendra transmission line and 400/220 kV sub-station at Narendra including additional capitalization from DOCO (1.11.2005) to 31.3.2006 in Southern Region for the period from 1.11.2005 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 Department, Govt. of Pondicherry, Pondicherry **.Respondents**

**The following were present:**

1. Shri P.C.Pankaj, PGCIL
2. Shri Rakesh Prasad, PGCIL
3. Shri U.K. Tyagi, DGM, PGCIL
4. Shri C.Kannan, PGCIL
5. Shri Harmeet Singh, PGCIL
6. Shri Johnson Jacob, KSEB

**ORDER  
(DATE OF HEARING: 18.1.2007)**

The petition has been filed for approval of transmission tariff for 400 kV D/C Kaiga-Narendra transmission line (the transmission line) and 400/220 kV sub-station at Narendra with one 315 MVA transformer (the sub-station) in Southern Region for the period from 1.11.2005 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 during 2005-06. These assets are collectively referred to as "the transmission assets". The petitioner has also prayed for the

reimbursement of expenditure incurred towards publishing of notices in the newspapers and the petition filing fee by the beneficiaries.

2. The investment approval for 400 kV D/C Kaiga-Narendra transmission line was accorded by the Board of Directors of the petitioner company vide letter dated 30.8.2005 at an estimated cost of Rs.18161 lakh, including IDC of Rs. 3131 lakh . The investment approval for construction of 400/220 kV D/C sub-station at Narendra with 2x315 MVA transformer was earlier accorded by the Board of Directors of the petitioner company under Memo dated 27.2.2003 at an estimated cost of Rs. 6051 lakh, including IDC of Rs. 487 lakh.

3. The transmission assets were declared under commercial operation on 1.11.2005 with line length of 215.324 ckt-kms (for O & M purposes). One 315 MVA transformer at 400/220 kV sub-station at Narendra is yet to be declared under commercial operation.

4. The provisional transmission charges for the transmission assets were approved by the Commission in its order dated 4.7.2006 in Petition No. 23/2006. The present petition is for approval of final tariff from the date of commercial operation of the transmission assets.

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

400 kV D/C Kaiga-Narendra transmission line

(Rs. In lakh)

	<b>2005-06 (Pro rata)</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Depreciation	156.57	376.29	376.29	376.29
Interest on Loan	329.93	771.03	724.69	665.50
Return on Equity	253.84	609.22	609.22	609.22
Advance against Depreciation	19.09	20.98	233.48	395.38
Interest on Working Capital	20.10	47.88	51.76	54.60
O & M Expenses	21.17	52.97	54.91	57.28
<b>Total</b>	<b>800.70</b>	<b>1878.36</b>	<b>2050.33</b>	<b>2158.26</b>

400/220 kV sub-station at Narendra with 1x315 MVA transformer

(Rs. in lakh)

	2005-06 (Pro rata)	2006-07	2007-08	2008-09
Depreciation	60.20	155.85	155.85	155.85
Interest on Loan	101.27	260.04	248.75	237.63
Return on Equity	75.92	182.22	182.22	182.22
Advance against Depreciation	0.00	0.00	0.00	0.00
Interest on Working Capital	9.19	22.97	23.37	23.80
O & M Expenses	121.88	304.20	316.30	329.00
<b>Total</b>	<b>348.47</b>	<b>925.29</b>	<b>926.49</b>	<b>928.50</b>

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

400 kV D/C Kaiga-Narendra transmission line

(Rs. in lakh)

	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	146.02	149.67	158.65	168.17
O & M expenses	4.23	4.41	4.58	4.77
Receivables	320.28	313.06	341.72	359.71
<b>Total</b>	<b>470.54</b>	<b>467.14</b>	<b>504.95</b>	<b>532.65</b>
Rate of interest	10.25%	10.25%	10.25%	10.25%
<b>Interest</b>	<b>(Pro rata) 20.10</b>	<b>47.88</b>	<b>51.76</b>	<b>54.60</b>

400/220 kV sub-station at Narendra with 1x 315 MVA transformer

(Rs.in lakh)

	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	43.48	44.56	47.24	50.07
O & M expenses	24.38	25.35	26.36	27.42
Receivables	147.39	154.22	154.42	154.75
<b>Total</b>	<b>215.24</b>	<b>224.13</b>	<b>228.01</b>	<b>232.24</b>
Rate of interest	10.25%	10.25%	10.25%	10.25%
<b>Interest</b>	<b>(Pro rata) 9.19</b>	<b>22.97</b>	<b>23.37</b>	<b>23.80</b>

7. The reply to the petition has been filed by Tamil Nadu Electricity Board. No comments or suggestion 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**

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 the capital expenditure up to the date of commercial operation. The petitioner has further claimed additional capitalisation for the year 2005-06 for each asset. The petitioner has not claimed additional capitalization on account of FERV as these assets do not involve foreign currency loans. The capital expenditure on the date of commercial operation and additional capitalization on account of works claimed by the petitioner for tariff purpose are given hereunder:

(Rs. in lakh)

S. No.	Name of the transmission assets	Capital Expenditure on the date of commercial operation	Additional capital expenditure during 2005-06	Total Capital expenditure
(i)	400 kV D/C Kaiga-Narendra transmission line	14602.02	39.52	14641.54
(ii)	400/220 kV sub-station at Narendra with 1x315 MVA transformer	4347.57	644.85	4992.42

## **Additional capitalization -2005-06**

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 are given hereunder:

400 kV D/C Kaiga-Narendra transmission line

Year	Nature of expenditure
2005-06	Transmission line = Rs. 39.52 lakh
	Total = Rs. 39.52 lakh

400/220 kV sub-station at Narendra with 1x315 MVA transformer

Year	Nature of expenditure
2005-06	Building = Rs. 56.47 lakh
	PLCC = Rs. 22.53 lakh
	Sub-station = Rs. 565.85 lakh
	Total = Rs. 644.85 lakh

12. The additional capital expenditure claimed is within the original scope of work and is found to be in order as it was against the committed liability. Accordingly, the additional capital expenditure as claimed for the respective transmission asset has been allowed.

13. As per investment approval, the scheduled date of commissioning was March 2006 and August 2005 for the transmission line and the sub-station respectively. The transmission assets were, however, declared under commercial operation on 1.11.2005. The petitioner has explained that preponement of commissioning of the transmission line was discussed in SREB meeting and constituents of Southern Region had agreed for preponement of commissioning of the transmission line. In case of the transmission line the petitioner has submitted the reasons for cost variation due to reduction in IDC due to early completion, reduction of quantity of angle towers and reduction in award cost due to lower rates received in competitive bidding. In case of the sub-station there was an increase in land cost by Rs. 300 lakh (Rs 100 lakh up to date of commercial operation and Rs. 200 lakh yet to be incurred) due to extra land registration charges of KPTCL. We accept the explanation furnished by the petitioner on both the assets.

14. Based on the above, gross block as given below has been considered for the purpose of tariff for each of the transmission assets, after allowing additional capitalization on works as claimed by the petitioner:

(Rs. in lakh)				
S. No.	Name of the transmission assets	Admitted capital cost	Additional capital expenditure	Capital expenditure on date of commercial operation
(i)	400 kV D/C Kaiga-Narendra transmission line	14602.02	39.52	14641.54
(ii)	400/220 kV sub-station at Narendra with 1x315 MVA transformer	4347.57	644.85	4992.42

### **DEBT- EQUITY RATIO**

15. 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.”

16. The petitioner has considered debt-equity ratio of 70.20:29.80 and 70.06:29.94 for the transmission line and the sub-station respectively, as actually deployed on the date of commercial operation of the respective asset. The petitioner has further considered the additional capitalization against debt only.

17. We have considered debt-equity ratio as on the date of commercial operation as claimed by the petitioner. The additional capitalisation on works has been segregated into debt and equity in the normative debt-equity ratio of 70:30 in accordance with Note 1 below Regulation 53. Therefore, debt-equity ratio and equity considered for the purpose of tariff in each case is same as considered by the petitioner and is as under:

Name of the transmission assets	Debt-equity ratio		Equity (Rs. in lakh)	
	As on date of commercial operation	As on 31.3.2006	As on date of commercial operation	As on 1.4.2006
400 kV D/C Kaiga-Narendra transmission line	70.20:29.80	70.20:29.80	4351.54	4363.40
400/220 kV sub-station at Narendra with 1x315 MVA transformer	70.06:29.94	70.05:29.95	1301.57	1495.03

### **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. For the reasons recorded in para 17 above, equity as given in the table under that para has been considered. However, tariff for the year 2005-06 has been allowed pro rata on average equity. Accordingly, return on equity allowed each year during the tariff period is given hereunder:

Name of the transmission assets	(Rs. in lakh)	
	Return in Equity	
	2005-06 (Pro rata)	2006-09 (Each year)
400 kV D/C Kaiga-Narendra transmission line	254.19	610.88
400/220 kV sub-station at Narendra with 1x315 MVA transformer	81.57	209.30

### **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 as notional gross loan.

(ii) Actual loan corresponding to additional capital expenditure during 2005-06 has been added to the gross loan up to date of commercial operation at arrive at total notional loan.

(iii) 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.

(iv) Weighted average rate of interest on loan for respective years as per above has been 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) Details of net outstanding loan as on 31.3.2005 or 31.3.2005, as the case may be, repayment schedule for the period 2004-09, rates of interest as on 1.4.2005 have been taken from above loan allocation statements submitted by the petitioner for working out weighted average rate of interest.

(ii) Notional loan arising out of additional capitalization in case of both elements during the year 2005-06 has been considered. The

adjusted gross loan has been considered as normative loan for tariff calculations.

- (iii) Tariff is worked out considering normative loan and normative repayments. Once the normative loan is arrived at, it is considered for all purposes in the tariff. Normative repayment is 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 is 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 is considered as moratorium and depreciation during the year is deemed as normative repayment of loan during the year.
- (v) Weighted average rate of interest on actual loan worked out as per (i) above is applied on the notional average loan during the year to arrive at the interest on loan.
- (vi) The petitioner has considered funding of additional capital expenditure from Bond XVIII, drawn from 9.3.2006 and also from Bond XVII in case of 400/220 kV sub-station at Narendra with 1x315 MVA transformer . The interest rate of applicable on Bond XVIII for working out weighted average rate of interest has been considered 9.3.2006 on actual days basis for the remaining part of the year 2005-06 by the petitioner. However, weighted average rate of interest has been worked out on average loan. Further, though the petitioner has considered Bond XVIII in opening gross loan.

However, as the loan has been drawn during the year, it has not been considered in opening gross loan but has been added subsequently resulting in difference average value of loan. In case of 400 kV D/C Kaiga-Narendra transmission line, gross loan as on date of commercial operation corresponding to capital expenditure as on that date also consists Bond XVIII drawn after 9.3.2006. Accordingly, the same has been shown as addition during the year instead of opening gross loan during the year.

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

400 kV D/C Kaiga-Narendra transmission line

(Rs. in lakh)

Interest on Loan	<b>2005-06 (Pro rata)</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Opening gross Loan	10250.48	10278.14	10278.14	10278.14
Cumulative Repayment up to Previous Year	426.22	602.93	999.56	1608.36
Net Loan-Opening	9824.26	<b>9675.21</b>	<b>9278.58</b>	<b>8669.79</b>
Addition due to Additional Capitalization	27.66			
Repayment during the year	176.71	396.63	608.79	770.44
Net Loan-Closing	9675.21	9278.58	8669.79	7899.35
Average Loan	9749.73	9476.90	8974.19	8284.57
Weighted Average Rate of Interest on Loan	8.1684%	8.1229%	8.0624%	8.0203%
Interest	331.83	769.80	723.54	664.45

400/220 kV sub-station at Narendra with 1x315 MVA transformer

(Rs. in lakh)

Interest on Loan	<b>2005-06 (Pro rata)</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Opening gross Loan	3046.00	3497.40	3497.40	3497.40
Cumulative Repayment up to Previous Year	0.00	60.20	216.05	371.91
Net Loan-Opening	3046.00	3437.19	3281.34	3125.49
Addition due to Additional Capitalization	451.40	-	-	-
Repayment during the year	60.20	155.85	155.85	155.85
Net Loan-Closing	3437.19	3281.34	3125.49	2969.63
Average Loan	3241.60	3359.27	3203.41	3047.56
Weighted Average Rate of Interest on Loan	7.2719%	7.3195%	7.3228%	7.3318%
Interest	<b>98.22</b>	<b>245.88</b>	<b>234.58</b>	<b>223.44</b>

24. The detailed calculations in support of interest on loan are attached an Annexure I to this order.

### **DEPRECIATION**

25. 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.

26. The calculations in support of depreciation allowed on the basis of capital cost as per para 16 above, are appended below:

## 400 kV D/C Kaiga-Narendra transmission line

(Rs. in lakh)

	2005-06 (Pro rata)	2006-07	2007-08	2008-09
Gross Block	14602.02	14641.54	14641.54	14641.54
Addition due to Additional Capitalization	39.52			
Gross Block	14641.54	14641.54	14641.54	14641.54
Rate of Depreciation	2.5700%	2.5700%	2.5700%	2.5700%
Depreciable Value	13177.39	13177.39	13177.39	13177.39
Balance Useful life of the asset	-	-	-	-
Remaining Depreciable Value	13177.39	13000.68	12604.05	11995.26
Depreciation	<b>156.57</b>	<b>376.29</b>	<b>376.29</b>	<b>376.29</b>

## 400/220 kV sub-station at Narendra with 1x315 MVA transformer

(Rs. in lakh)

	2005-06 (Pro rata)	2006-07	2007-08	2008-09
Gross Block	4347.57	4992.42	4992.42	4992.42
Addition due to Additional Capitalisation	644.85			
Gross Block	4992.42	4992.42	4992.42	4992.42
Rate of Depreciation	3.0939%	3.1218%	3.1218%	3.1218%
Depreciable Value	4138.58	4138.58	4138.58	4138.58
Balance Useful life of the asset	-	-	-	-
Remaining Depreciable Value	4138.58	4078.38	3922.52	3766.67
Depreciation	<b>60.20</b>	<b>155.85</b>	<b>155.85</b>	<b>155.85</b>

**ADVANCE AGAINST DEPRECIATION**

27. 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 1/10<sup>th</sup> of loan amount as per regulation 54 minus depreciation as per schedule

28. 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.

29. In addition to Cumulative depreciation up to 2003-04 (excluding Advance Against Depreciation) as per last tariff setting, depreciation on FERV for the period 2001-04 has been added to arrive at total cumulative depreciation amount as on 31.03.2004.

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

- (i) 1/10<sup>th</sup> of gross loan is worked out from the gross notional loan.
- (ii) Cumulative loan as well as repayment of notional loan during the year have been considered.
- (iii) Depreciation as claimed in the petition.

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

- (i) 1/10<sup>th</sup> of gross loan is worked out from the gross notional loan as per para 23 above.
- (ii) Repayment of cumulative loan as well as repayment of notional loan during the year have been considered as per para 23 above.
- (iii) Depreciation worked out in para 26 above has been considered.

32. The details of Advance Against Depreciation allowed for 400 kV D/C Kaiga-Narendra transmission line are given hereunder. The petitioner has not claimed Advance Against Depreciation in respect of 400/220 kV sub-station at Narendra with 1x315 MVA transformer.

400 kV D/C Kaiga-Narendra transmission line

(Rs. in lakh)

	2005-06 (Pro rata)	2006-07	2007-08	2008-09
1/10 <sup>th</sup> of Gross Loan(s)	1025.05	1027.81	1027.81	1027.81
Repayment of the Loan	176.71	396.63	608.79	770.44
Minimum of the above	176.71	396.63	608.79	770.44
Depreciation during the year	156.57	376.29	376.29	376.29
(A) Difference	20.13	20.34	232.51	394.15
Cumulative Repayment of the Loan	602.93	999.56	1608.36	2378.79
Cumulative Depreciation/ Advance against Depreciation	156.57	552.99	949.62	1558.42
(B) Difference	446.36	446.57	658.73	820.37
Advance against Depreciation Minimum of (A) and (B)	<b>20.13</b>	<b>20.34</b>	<b>232.51</b>	<b>394.15</b>

**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 following O & M expenses each asset, which has been allowed. Accordingly, the petitioner's entitlement to O & M expenses has been worked out as given hereunder:

400 kV D/C Kaiga-Narendra transmission line

(Rs. in lakh)

	2005-06	2006-07	2007-08	2008-09
O&M expenses for 215.324 ckt- kms line length	21.17	52.97	54.91	57.28
<b>TOTAL</b>	<b>21.17</b>	<b>52.97</b>	<b>54.91</b>	<b>57.28</b>

400/220 kV sub-station at Narendra with 1x315 MVA transformer

(Rs. in lakh)

	2005-06 (Pro rata)	2006-07	2007-08	2008-09
O&M expenses for 10 bays	121.88	304.20	316.30	329.00
<b>TOTAL</b>	<b>121.88</b>	<b>304.20</b>	<b>316.30</b>	<b>329.00</b>

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. The necessary details are given hereunder:

Name of the Transmission assets	Date of Commercial Operation	Capital Expenditure (Rs. in lakh) on the date of commercial operation	Spares Cost (Rs. in lakh)
400 kV D/C Kaiga-Narendra transmission line	1.11.2005	14602.02	146.02
400/220 kV sub-station at Narendra with 1x315 MVA transformer	1.11.2005	4347.57	43.48

#### **(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)© 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 1.4.2005, 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 below:

400 kV D/C Kaiga-Narendra transmission line

(Rs. in lakh)

	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Maintenance Spares	146.02	149.67	158.65	168.17
O & M expenses	4.23	4.41	4.58	4.77
Receivables	321.62	313.03	341.64	359.60
Total	471.87	467.11	504.87	532.55
Interest	<b>20.15</b>	<b>47.88</b>	<b>51.75</b>	<b>54.59</b>

400/220 kV sub-station at Narendra with 1x315 MVA transformer

(Rs. In lakh)

	<b>2005-06 (Pro rata)</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Maintenance Spares	43.48	44.56	47.24	50.07
O & M expenses	24.38	25.35	26.36	27.42
Receivables	148.44	156.41	156.61	156.94
Total	216.29	226.32	230.20	234.42
Interest	<b>9.24</b>	<b>23.20</b>	<b>23.60</b>	<b>24.03</b>

### **TRANSMISSION CHARGES**

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

400 kV D/C Kaiga-Narendra transmission line

(Rs. in lakh)

	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Depreciation	156.57	376.29	376.29	376.29
Interest on Loan	331.83	769.80	723.54	664.45
Return on Equity	254.19	610.88	610.88	610.88
Advance against Depreciation	20.13	20.34	232.51	394.15
Interest on Working Capital	20.15	47.88	51.75	54.59
O & M Expenses	21.17	52.97	54.91	57.28
Total	<b>804.05</b>	<b>1878.16</b>	<b>2049.86</b>	<b>2157.62</b>

400/220 kV sub-station at Narendra with 1x315 MVA transformer

(Rs. in lakh)

	<b>2005-06 (Pro rata)</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Depreciation	60.20	155.85	155.85	155.85
Interest on Loan	98.22	245.88	234.58	223.44
Return on Equity	81.57	209.30	209.30	209.30
Advance against Depreciation	0.00	0.00	0.00	0.00
Interest on Working Capital	9.24	23.20	23.60	24.03
O & M Expenses	121.88	304.20	316.30	329.00
Total	<b>371.10</b>	<b>938.44</b>	<b>939.63</b>	<b>941.63</b>

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. These transmission charges shall be

included in the regional transmission tariff for Southern Region and 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. 1,38,718/- incurred on publication of notices in the newspapers. The petitioner shall claim reimbursement of the said expenditure directly from the respondent in one installment. The petitioner has also sought reimbursement of filing fee of Rs.5 lakh paid. A final view on reimbursement of filing fee is yet to be taken by the Commission for which views of the stakeholder have been called for. The view taken on consideration of the comments received shall apply in the present case as regards reimbursement of filing fee.

41. The petitioner is already billing the respondents on provisional basis in accordance with the order dated 4.7.2006 in petition No. 23/2006. 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.128/2006.

Sd-/  
**(BHANU BHUSHAN)**  
**MEMBER**  
New Delhi dated the 15<sup>th</sup> March 2007

sd-/  
**(ASHOK BASU)**  
**CHAIRPERSON**

## CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN

## 400 kV D/C Kaiga-Narendra transmission line

(Rs. in Lakh)

	Details of Loan	2005-06	2006-07	2007-08	2008-09
<b>1</b>	<b>Bond IX</b>				
	Gross Loan opening	431.00	431.00	431.00	431.00
	Cumulative Repayment up to DOCO/previous year	129.30	129.30	172.40	215.50
	Net Loan-Opening	301.70	301.70	258.60	215.50
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	43.10	43.10	43.10
	Net Loan-Closing	301.70	258.60	215.50	172.40
	Average Loan	301.70	280.15	237.05	193.95
	Rate of Interest	12.25%	12.25%	12.25%	12.25%
	Interest	36.96	34.32	29.04	23.76
	Repayment Schedule	10 Annual instalments from 22.08.2003			
<b>2</b>	<b>Bond X</b>				
	Gross Loan opening	1254.00	1254.00	1254.00	1254.00
	Cumulative Repayment upto DOCO/previous year	209.00	209.00	313.50	418.00
	Net Loan-Opening	1045.00	1045.00	940.50	836.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	104.50	104.50	104.50
	Net Loan-Closing	1045.00	940.50	836.00	731.50
	Average Loan	1045.00	992.75	888.25	783.75
	Rate of Interest	10.90%	10.90%	10.90%	10.90%
	Interest	113.91	108.21	96.82	85.43
	Repayment Schedule	12 Annual instalments from 21.06.2004			
<b>3</b>	<b>Bond XI Option-I</b>				
	Gross Loan opening	1012.00	1012.00	1012.00	1012.00
	Cumulative Repayment upto DOCO/previous year	0.00	84.33	168.67	253.00
	Net Loan-Opening	1012.00	927.67	843.33	759.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	84.33	84.33	84.33	84.33
	Net Loan-Closing	927.67	843.33	759.00	674.67
	Average Loan	969.83	885.50	801.17	716.83
	Rate of Interest	9.80%	9.80%	9.80%	9.80%
	Interest	95.04	86.78	78.51	70.25
	Repayment Schedule	12 Annual Installments from 07.12.05			
<b>4</b>	<b>Bond-XII</b>				
	Gross Loan opening	71.00	71.00	71.00	71.00
	Cumulative Repayment upto DOCO/previous year	0.00	5.92	11.84	17.76
	Net Loan-Opening	71.00	65.08	59.16	53.24
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	5.92	5.92	5.92	5.92
	Net Loan-Closing	65.08	59.16	53.24	47.32
	Average Loan	68.04	62.12	56.20	50.28
	Rate of Interest	9.70%	9.70%	9.70%	9.70%
	Interest	6.60	6.03	5.45	4.88
	Repayment Schedule	12 Annual Instalments from 28.03.2006			
<b>5</b>	<b>Bond XIII Option I</b>				
	Gross Loan opening	888.00	888.00	888.00	888.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	74.00	148.00
	Net Loan-Opening	888.00	888.00	814.00	740.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	74.00	74.00	74.00

	Net Loan-Closing	888.00	814.00	740.00	666.00
	Average Loan	888.00	851.00	777.00	703.00
	Rate of Interest	8.63%	8.63%	8.63%	8.63%
	Interest	76.63	73.44	67.06	60.67
	Repayment Schedule	12 Annual Instalments from 31.07.2006			
<b>6</b>	<b>Bond XV</b>				
	Gross Loan opening	2550.00	2550.00	2550.00	2550.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	212.50
	Net Loan-Opening	2550.00	2550.00	2550.00	2337.50
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	212.50	212.50
	Net Loan-Closing	2550.00	2550.00	2337.50	2125.00
	Average Loan	2550.00	2550.00	2443.75	2231.25
	Rate of Interest	6.68%	6.68%	6.68%	6.68%
	Interest	170.34	170.34	163.24	149.05
	Repayment Schedule	12 Annual Instalments from 23.02.2008			
<b>7</b>	<b>PNB-II</b>				
	Gross Loan opening	559.00	559.00	559.00	559.00
	Cumulative Repayment upto DOCO/previous year	46.58	93.16	139.74	186.32
	Net Loan-Opening	512.42	465.84	419.26	372.68
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	46.58	46.58	46.58	46.58
	Net Loan-Closing	465.84	419.26	372.68	326.10
	Average Loan	489.13	442.55	395.97	349.39
	Rate of Interest	8.60%	8.60%	8.60%	8.60%
	Interest	42.07	38.06	34.05	30.05
	Repayment Schedule	12 Annual Instalments from 08.03.2005			
<b>8</b>	<b>OBC</b>				
	Gross Loan opening	466.00	466.00	466.00	466.00
	Cumulative Repayment upto DOCO/previous year	38.83	77.66	116.49	155.32
	Net Loan-Opening	427.17	388.34	349.51	310.68
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	38.83	38.83	38.83	38.83
	Net Loan-Closing	388.34	349.51	310.68	271.85
	Average Loan	407.76	368.93	330.10	291.27
	Rate of Interest	8.60%	8.60%	8.60%	8.60%
	Interest	35.07	31.73	28.39	25.05
	Repayment Schedule	12 Annual Instalments from 22.03.2005			
<b>9</b>	<b>Bond-XVI</b>				
	Gross Loan opening	1619.00	1619.00	1619.00	1619.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	1619.00	1619.00	1619.00	1619.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	161.90
	Net Loan-Closing	1619.00	1619.00	1619.00	1457.10
	Average Loan	1619.00	1619.00	1619.00	1538.05
	Rate of Interest	7.10%	7.10%	7.10%	7.10%
	Interest	114.95	114.95	114.95	109.20
	Repayment Schedule	10 Annual instalments from 18.02.2009			
<b>10</b>	<b>Bond-XVII</b>				
	Gross Loan opening	1340.00	1340.00	1340.00	1340.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	1340.00	1340.00	1340.00	1340.00
	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	1340.00	1340.00	1340.00	1340.00
	Average Loan	1340.00	1340.00	1340.00	1340.00

	Rate of Interest	7.39%	7.39%	7.39%	7.39%
	Interest	99.03	99.03	99.03	99.03
	Repayment Schedule	10 annual instalments from 22.09.09			
<b>11</b>	<b>Bond- XVIII (Date of Drawal 09.03.2006)</b>				
	Gross Loan opening	0.00	100.00	100.00	100.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	100.00	100.00	100.00
	Additions during the year	100.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	100.00	100.00	100.00	100.00
	Average Loan	50.00	100.00	100.00	100.00
	Rate of Interest	8.15%	8.15%	8.15%	8.15%
	Interest	4.08	8.15	8.15	8.15
	Repayment Schedule	12 annual instalments from 09.03.2010			
	Gross Loan opening	10190.00	10290.00	10290.00	10290.00
	Cumulative Repayment upto DOCO/previous year	423.71	599.37	996.64	1606.40
	Net Loan-Opening	9766.29	9690.63	9293.36	8683.60
	Additions during the year	100.00	0.00	0.00	0.00
	Repayment during the year	175.66	397.26	609.76	771.66
	Net Loan-Closing	9690.63	9293.36	8683.60	7911.94
	Average Loan	9728.46	9492.00	8988.48	8297.77
	Rate of Interest	8.1684%	8.1229%	8.0624%	8.0203%
	Interest	794.66	771.03	724.69	665.50

400/220 kV sub-station at Narendra with 1x315 MVA transformer

(Rs. in Lakh)

	Details of Loan	2005-06	2006-07	2007-08	2008-09
<b>1</b>	<b>Bond XV</b>				
	Gross Loan opening	450.00	450.00	450.00	450.00
	Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00	37.50
	Net Loan-Opening	450.00	450.00	450.00	412.50
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	37.50	37.50
	Net Loan-Closing	450.00	450.00	412.50	375.00
	Average Loan	450.00	450.00	431.25	393.75
	Rate of Interest	6.68%	6.68%	6.68%	6.68%
	Interest	30.06	30.06	28.81	26.30
	Repayment Schedule	12 Annual Instalments from 23.2.2008			
<b>2</b>	<b>Bond-XVI</b>				
	Gross Loan opening	746.00	746.00	746.00	746.00
	Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	746.00	746.00	746.00	746.00
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	74.60
	Net Loan-Closing	746.00	746.00	746.00	671.40
	Average Loan	746.00	746.00	746.00	708.70
	Rate of Interest	7.10%	7.10%	7.10%	7.10%
	Interest	52.97	52.97	52.97	50.32
	Repayment Schedule	10 Annual instalments from 18.2.2009			
<b>3</b>	<b>Bond-XVII</b>				
	Gross Loan opening	1850.00	2132.00	2132.00	2132.00
	Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	1850.00	2132.00	2132.00	2132.00
	Additions during the year	282.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	2132.00	2132.00	2132.00	2132.00
	Average Loan	1991.00	2132.00	2132.00	2132.00
	Rate of Interest	7.39%	7.39%	7.39%	7.39%
	Interest	147.13	157.55	157.55	157.55
	Repayment Schedule	10 annual instalments from 22.9.2009			
<b>4</b>	<b>Bond- XVIII (Date of Drawal 09.03.2006)</b>				
	Gross Loan opening	0.00	362.85	362.85	362.85
	Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	362.85	362.85	362.85
	Additions during the year	362.85	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	362.85	362.85	362.85	362.85
	Average Loan	181.43	362.85	362.85	362.85
	Rate of Interest	8.15%	8.15%	8.15%	8.15%
	Interest	14.79	29.57	29.57	29.57
	Repayment Schedule	12 annual instalments from 9.3.2010			
	Gross Loan opening	3046.00	3690.85	3690.85	3690.85
	Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00	37.50
	Net Loan-Opening	3046.00	3690.85	3690.85	3653.35
	Additions during the year	644.85	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	37.50	112.10
	Net Loan-Closing	3690.85	3690.85	3653.35	3541.25
	Average Loan	3368.43	3690.85	3672.10	3597.30
	Rate of Interest	7.2719%	7.3195%	7.3228%	7.3318%
	Interest	244.95	270.15	268.90	263.75

Summary Sheet				
<b>Name of the Company:</b>		PGCIL		
<b>Name of the Element:</b>		400 kV D/C Kaiga Narendra Transmission System		
<b>Actual DOCO:</b>		1.11.2005		
<b>Petition No.:</b>		128/2006		
<b>Tariff setting Period:</b>		2004-09		
(Rs.in lakh)				
<b>1</b>	<b>Capital Cost of the Project as on DOCO</b>			<b>14602.02</b>
<b>2</b>	<b>Additional Capitalisation</b>			<b>39.52</b>
	2005-06		39.52	
	Total		39.52	
<b>3</b>	<b>Total Capital Cost as on 1.4.2006(1+2)</b>			<b>14641.54</b>
<b>4</b>	<b>Means of Finance :</b>			
	<b>As on DOCO</b>		<b>As on 1.4.2006</b>	
	Debt	70.20%	10250.48	70.20% 10278.14
	Equity	29.80%	4351.54	29.80% 4363.40
	Total	100.00%	14602.02	100.00% 14641.54
<b>5</b>	<b>Gross Loan:</b>			
	As on DOCO		10250.48	
	Notional Loan corresponding to ACE during 2005-06		27.66	
	As on 1.4.2006		10278.14	
<b>6</b>	<b>Cumulative Repayment up to 31.3.2009 :</b>			<b>2378.79</b>
	Up to DOCO		426.22	
	DOCO to 31.3.2009		1952.57	
	Total		2378.79	
<b>7</b>	<b>Balance Loan to be repaid beyond 31.3.2009 :</b>			<b>7899.35</b>
<b>8</b>	<b>Depreciation recovered up to 31.3.2009 :</b>			<b>1952.57</b>
		<b>Dep</b>	<b>AAD</b>	<b>Total</b>
	From DOCO to 31.3.2009		1285.44	667.13 1952.57
	Total		1952.57	
<b>9</b>	<b>Balance Depreciation to be recovered beyond 31.3.2009 :</b>			<b>11224.82</b>
	<b>Capital cost for the purpose of Depreciation</b>		<b>14602.02</b>	
	<b>ACE during 2005-06</b>		<b>39.52</b>	
	<b>Capital cost as 1.4.2006</b>		<b>14641.54</b>	
	<b>Less: Land Cost</b>		<b>0.00</b>	
			<b>14641.54</b>	
	<b>90% of Capital Cost as above</b>		<b>13177.39</b>	
	<b>Cum. Depreciation to be recovered up to 31.3.2009</b>		<b>1952.57</b>	
	<b>Balance Depreciation to be recovered beyond 31.3.2009</b>		<b>11224.82</b>	



Summary Sheet				
<b>Name of the Company:</b>		PGCIL		
<b>Name of the Element:</b>		400 /220 kV S/S at Narendra,One 315 MVA Auto Transformer		
<b>Actual DOCO:</b>		1.11.2005		
<b>Petition No.:</b>		128/2006		
<b>Tariff setting Period:</b>		2004-09		
(Rs.in lakh)				
<b>1</b>	<b>Capital Cost of the Project as on DOCO</b>			<b>4347.57</b>
<b>2</b>	<b>Additional Capitalization</b>			<b>644.85</b>
	2005-06		644.85	
	Total		644.85	
<b>3</b>	<b>Total Capital Cost as on 1.4.2006 (1+2)</b>			<b>4992.42</b>
<b>4</b>	<b>Means of Finance :</b>			
		<b>As on DOCO</b>		<b>As on 1.4.2006</b>
	Debt	70.06%	3046.00	70.05% 3497.40
	Equity	29.94%	1301.57	29.95% 1495.03
	Total	100.00%	4347.57	100.00% 4992.42
<b>5</b>	<b>Gross Loan:</b>			
		As on DOCO		3046.00
		Notional Loan corresponding to ACE during 2005-06		451.40
		As on 1.4.2006		3497.40
<b>6</b>	<b>Cumulative Repayment up to 31.3.2009 :</b>			<b>527.76</b>
		Up to DOCO		0.00
		DOCO to 31.3.2009		527.76
		Total		527.76
<b>7</b>	<b>Balance Loan to be repaid beyond 31.3.2009 :</b>			<b>2969.63</b>
<b>8</b>	<b>Depreciation recovered up to 31.3.2009 :</b>			<b>527.76</b>
			<b>Dep</b>	<b>AAD</b>
		DOCO to 31.3.2009	527.76	0.00
		Total		527.76
<b>9</b>	<b>Balance Depreciation to be recovered beyond 31.3.2009 :</b>			<b>3610.82</b>
	<b>Capital cost for the purpose of Depreciation</b>			<b>4347.57</b>
	<b>ACE during 2005-06</b>			<b>644.85</b>
	<b>Capital cost as 1.4.2006</b>			<b>4992.42</b>
	<b>Less: Land Cost</b>			<b>394.00</b>
				<b>4598.42</b>
	<b>90% of Capital Cost as above</b>			<b>4138.58</b>
	<b>Cum. Depreciation to be recovered up to 31.3.2009</b>			<b>527.76</b>
	<b>Balance Depreciation to be recovered beyond 31.3.2009</b>			<b>3610.82</b>