

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram:

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

Petition No. 84/2005

In the matter of

Approval of transmission tariff for (A) Talcher-Kolar HVDC line (Pole-I), (B) LILO of 400 kV S/C Cuddapah-Bangalore S/C line, common facilities at Kolar, and 400 kV S/C Kolar-Madras line, (C) 400 kV S/C Hossur-Salem line, 315 MVA Auto Transformer-I at Hossur, along with 220 kV switchyard (D) 315 MVA Auto Transformer-2 at Hossur, (E) 500 MVA Auto-transformer (comprising of 4x167 MVA single phase units) at Kolar along with 220 kV switchyard, and 400 kV D/C Kolar-Hoody line, under Transmission System associated with Talcher-II Project for the period 1.4.2004 to 31.3.2009 and additional capitalization for the period 2001-04.

And in the matter of

Power Grid Corporation of India Ltd.

... Petitioner

Vs

1. Karnataka Power Transmission Corporation Ltd., Bangalore
2. Transmission Corporation of Andhra Pradesh, Hyderabad
3. Kerala State Electricity Board, Thiruvananthapuram
4. Tamil Nadu Electricity Board, Chennai
5. Electricity Deptt., Govt. of Pondicherry, Pondicherry

.. Respondents

The following were present:

1. Shri P.C. Pankaj, GM (Comml), PGCIL
2. Shri U.K. Tyagi, DGM, PGCIL
3. Shri C. Kannan, CM (Fin), PGCIL
4. Shri M.M.Mondal, PGCIL
5. Shri R.Prasad, PGCIL
6. Shri S. Sowmyanarayanan, TNEB

**ORDER
(DATE OF HEARING: 28.3.2006)**

The petition has been filed for approval of transmission charges for (A) Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar, and the Earth electrode lines, (B) LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays, common facilities at Kolar, and 400 kV S/C Kolar-Madras line, with associated bays, (C)

400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-I at Hossur, associated bays, and 220 kV switchyard at Hossur, (D) 315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays, and (E) 500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single-phase units) associated bays, 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays under transmission system associated with Talcher-II Project (the system) in Southern Region for the period from 1.4.2004 to 31.3.2009 based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004, (hereinafter referred to as “the 2004 regulations”). The petitioner has also prayed that it be allowed additional capitalization for the capital expenditure incurred during 2001-04 after date of commercial operation and the reimbursement from the beneficiaries of expenditure towards publishing of notices in newspapers and petition filing fee.

2. The investment approval for construction of the above-noted transmission system (total) was accorded by the Central Government in Ministry of Power under letter dated 9.2.2000 at an estimated cost of Rs.386561.00 lakh (2nd quarter 1998 price level), including IDC of Rs. 39107.00 lakh. The dates of commercial operation of the assets covered in the instant petition and the line length are as under:

Asset	Date of Commercial Operation	Line Length Ckt kms (For O&M)
Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines	1.12. 2002	2803.43
LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays	1.12.2002	241.21
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-I at Hossur, associated bays, and 220 kV switchyard at Hossur	1.12. 2002	127.06
315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays	1. 2.2003	0
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.	1. 2.2003	101.92
Total		3273.62

3. The annual transmission charges for the period up to 31.3.2004 in respect of the above mentioned assets were approved by the Commission in its order dated 10.5.2005 in petition No. 122/2002. Gross block on the date of commercial operation of the respective asset considered by the Commission in the said order dated 10.5.2005 is as under:

Asset	Gross Block on date of commercial operation (Rs in lakh)
Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines	184528.27
LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays	11285.96
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-I at Hossur, associated bays, and 220 kV switchyard at Hossur	6848.47
315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays	714.58
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.	8096.77
Total	211474.05

4. The transmission charges claimed by the petitioner under various heads are given in Annexure I of this order. The summary of these transmission charges claimed is given hereunder:

	(Rs.in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines	28384.05	31981.21	31050.56	30120.51	29182.10
LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays	1684.06	1750.74	1919.07	1899.24	1844.49
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-I at Hossur, associated bays, and 220 kV switchyard at Hossur	1004.64	995.28	982.87	968.48	953.50
315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays	193.86	196.98	199.92	202.81	205.85
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.	1338.22	1317.35	1459.82	1527.79	1501.10
Total	32604.83	36241.56	35612.24	34718.83	33687.04

5. The details submitted by the petitioner in support of its claim for interest on working capital are given in Annexure II to this order. The summary of the interest on working capital claimed is given hereunder:

	(Rs.in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines	709.19	783.83	781.90	780.78	780.43
LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays	43.34	45.33	49.10	49.71	49.78
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-I at Hossur, associated bays, and 220 kV switchyard at Hossur	27.34	27.76	28.16	28.56	28.98
315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays	5.07	5.21	5.35	5.49	5.64
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.	34.80	35.11	38.24	40.14	40.47
Total	819.74	897.24	902.75	904.68	905.3

6. The replies to the petition have been filed by Karnataka Power Transmission Corporation Limited and Tamil Nadu Electricity Board. In response to the public notices published by the petitioner in accordance with the procedure specified by the Commission, no comments or objections have been received from the general public.

Additional capitalization 2001-04

7. The petitioner has sought approval of tariff after accounting for additional capital expenditure incurred on account of left over/balance payments as per details given below:

(a) Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines:

S.No.	Year	Amount claimed (Rs. in lakh)	Details of expenditure (Amounts in Rs. in lakh)
1.	2002-03	3953.83	Supply (Transmission lines=98.28), Price variation (Transmission lines=11.77, Sub-station=62.55) Retention (Transmission lines=320.78, Sub-station=2284.82), Erection (Building./civil works=339.81, Transmission lines=127.08, Sub-station=120.99, PLCC=75.47) Additional taxes & duties (Transmission lines=512.28)
2.	2003-04	1533.54	Supply (Transmission lines=42.37), Land compensation (25.37) Retention (Transmission lines=953.01), Erection (Transmission lines=218.79) Additional taxes & duties (Transmission lines=294.00)
Total		5487.37	

(b) LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays:

S.No.	Year	Amount claimed (Rs. in lakh)	Details of expenditure(Amounts in Rs. in lakh)
1.	2002-03	396.15	Compensation =36.71 Supply =20.94, Price variation =16.96, Sub station=0.28 Retention (Sub-station=28.13), Erection (Sub-station=138.31) Additional taxes & duties (Sub-station=154.82)
2.	2003-04	191.95	Retention (Sub-station=79.06), Erection (Sub-station=0.39) Final payments (Sub-station=0.01) Additional taxes & duties (Sub-station=112.49)
Total		588.10	

(c) 400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-I at Hossur, associated bays, and 220 kV switchyard at Hossur:

S.No	Year	Amount claimed (Rs. in lakh)	Details of expenditure (Amounts in Rs. in lakh)
1.	2002-03	635.87	Compensation =29.01 Price variation (Sub-station=7.55) Erection (Building/civil works=10.85, Transmission lines=16.28, Sub-station=92.55) Additional taxes & duties (Sub-station=479.63)
2.	2003-04	193.19	Compensation (Land=5.91, Transmission lines=46.17) Price variation (Sub-station=7.13) Erection (Building/civil works=29.66, Sub-station=104.32)
Total		829.06	

(d) 315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays:

S.No.	Year	Amount claimed (Rs. in lakh)	Details of expenditure (Amounts in Rs. in lakh)
2.	2003-04	8.92	Supply (Sub-station=6.93) Price variation (Sub-station=1.99)
Total		8.92	

(e) 500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays:

S.No.	Year	Amount claimed (Rs. in lakh)	Details of expenditure (Amounts in Rs. in lakh)
1.	2002-03	303.74	Supply (Sub-station=45.80) Taxes & duties (Sub-station=257.94)
2.	2003-04	113.79	Compensation (Transmission lines=.92) Supply (Sub-station=3.00) Price variation (Transmission lines=6.21) Taxes & duties (Sub-station=96.65) Final payment (Transmission lines=.01)
Total		417.53	

8. The above expenditure was not considered by the Commission in its order dated 10.5.2005 ibid while approving tariff for the period ending 31.3.2004. The capital expenditure claimed 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.

Extra Rupee Liability during the years 2001-04:

9. Regulation 1.13 (a) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2001 provided as under:

- (a) Extra rupee liability towards interest payment and loan repayment actually incurred, in the relevant year shall be admissible; provided it directly arises out of foreign exchange rate variation and is not attributable to Utility or its suppliers or contractors. Every utility shall follow the method as per the Accounting Standard-11 (Eleven) as

issued by the Institute of Chartered Accountants of India to calculate the impact of exchange rate variation on loan repayment.

- (b) Any foreign exchange rate variation to the extent of the dividend paid out on the permissible equity contributed in foreign currency, subject to the ceiling of permissible return shall be admissible. This as and when paid, may be spread over the twelve-month period in arrears.

10. Regulation 1.7 of the 2001 further provided that recovery of foreign exchange rate variation would be done directly by the utilities from the beneficiaries without filing a petition before the Commission. In case of any objections by the beneficiaries to the amounts claimed on these counts, they may file an appropriate petition before the Commission.

11. The petitioner has claimed an amount of Rs. 4090.47 lakh on account of FERV for Talcher-Kolar HVDC line (Pole-I), etc only and for no other asset. As no objections are raised by the respondents to the petitioner's claim for additional capitalization on account of FERV and also FERV worked out is matching with calculations submitted by the petitioner and is in accordance with AS-11 as applicable up to 31.3.2004, the claim has been allowed for tariff calculations..

CAPITAL COST

12. As per clause (2) of Regulation 52 of the 2004 regulations in case of the projects existing as on 31.3.2004, the project cost admitted by the Commission for determination of tariff prior to 1.4.2004 shall form the basis for determination of tariff.

13. The petitioner has claimed the capital expenditure admitted by the Commission in the order dated 10.5.2005 *ibid* together with additional expenditure incurred after the date of commercial operation up to 31.3.2004 and has been allowed. The petitioner has considered additional capitalization on account of FERV for the period 2001-04 in respect of Talcher-Kolar HVDC line (Pole-I), etc, which has been allowed.

14. Based on the above, gross block as given below has been considered for the purpose of tariff for each of the element, after allowing additional capitalization on works and additional capitalization of FERV as per the petition.

(Rs. in lakh)

Name of the Element	Admitted capital cost	Additional Capitalization on works	Additional capitalization on FERV for the period 1.4.2001 to 31.3.2004	Total
Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines	184528.27	5487.37	4090.49	194106.13
LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays	11285.96	588.10	-	11874.06
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-1 at Hossur, associated bays, and 220 kV switchyard at Hossur	6848.47	829.06	-	7677.53
315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays	714.58	8.92	-	723.50
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.	8096.77	417.53	-	8514.30
Total	211474.05	7330.98	4090.40	222895.55

DEBT- EQUITY RATIO

15. Regulation 54 of the 2004 regulations *inter alia* provides that,-

- (1) In case of the existing project, debt–equity ratio Considered by the Commission for fixation of tariff for the period ending 31.3.2004 shall be considered for determination of tariff.
- (2) In case of the transmission system for which investment approval was accorded prior to 1.4.2004 and which is likely to be declared under commercial operation during the period 1.4.2004 to 31.3.2009, debt-equity in the ratio of 70:30 shall be considered:

Provided that where deployment of equity is less than 30%, the actual equity deployed shall be considered for the purpose of determination of tariff.

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

- (3) In case of the transmission system for which investment approval is accorded on or after 1.4.2004, debt-equity in the ratio of 70:30 shall be considered for the purpose of determination of tariff:

Provided that where deployment of equity is less than 30%, the actual equity deployed shall be considered for the purpose of determination of tariff.

- (4) The debt and equity amount arrived at in accordance with above sub-clause (1), (2) or (3), as the case may be, shall be used for calculation of interest on loan, return on equity, advance against depreciation and foreign exchange rate variation.”

16. The petitioner has claimed tariff based on debt-equity ratio as considered by the Commission in its order dated 10.5.2005 ibid and the entire additional capital expenditure on works has been considered to have been financed out of equity. The petitioner has considered the additional capitalisation of Rs. 4090.49 lakh on account of FERV for Talcher-Kolar HVDC line (Pole-I), etc in the same ratio as considered in the order dated 10.5.2005 for this asset. Debt-equity ratio based on expenditure as per order dated 10.5.2005 ibid for different elements for the purpose of determination of tariff is indicated below:

Name of the Element	On actual expenditure upto Date of commercial operation as per order dated 10.5.2005
Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines	81.48:18.52
LIL0 of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays	81.92:18.08
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-1 at Hossur, associated bays, and 220 kV switchyard at Hossur	86.76:13.24
315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays	80.05:19.95
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.	86.85:13.15

17. In the instant case, the approved debt-equity ratio is stated to be 80:20. Therefore, the additional capital expenditure on different asset has been considered as debt and equity in such a manner so as to make overall debt-equity ratio equal or close to approved debt-equity ratio. Therefore, debt-equity ratio and notional equity considered for tariff in each case are as under:

Name of the Element	Equity as	Notional Equity	Notional	Total	Debt-equity
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	per order dated 10.5.2005	for additional capitalization (Rs. in lakh)	equity on account of FERV (Rs. in lakh)	equity (Rs. in lakh)	ratio considered
Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines	34166.23	2666.95	1988.04	38821.22	80:20
LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays	2039.96	334.85	-	2374.81	80:20
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-1 at Hossur, associated bays, and 220 kV switchyard at Hossur	906.47	629.04	-	1535.51	80:20
315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays	142.58	2.12	-	144.70	80:20
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.	1064.77	417.53	-	1482.30	82.59:17.41

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 on the basis of order dated 10.5.2005 ibid along with notional equity on additional capitalization as stated at para 16 above. However, we have already arrived at notional equity as given in the table under para 17 above. Thus, return on equity recoverable each year during the tariff period is given hereunder:

Name of the Element	(Rs. in lakh)	
	Equity allowed	Return on Equity

Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines	38821.22	5434.97
LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays	2374.81	332.47
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-1 at Hossur, associated bays, and 220 kV switchyard at Hossur	1535.51	214.97
315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays	144.70	20.25
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.	1482.30	207.52
Total	44358.54	6210.18

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 as per regulation 54 minus cumulative repayment as admitted by the Commission for the period up to 31.3.2004. The repayment for the period 2004-09 shall be worked out accordingly on normative basis.

(c) The transmission licensee shall make every effort to swap the loan as long as it results in net benefit to the long-term transmission customers. The costs associated with such swapping shall be borne by the long-term transmission customers.

(d) The changes to the loan terms and conditions shall be reflected from the date of such swapping and benefits passed on to the beneficiaries.

(e) In case of any dispute, any of the parties may approach the Commission with proper application. However, long term transmission customers shall not withhold any payment as ordered by the Commission to the transmission licensee during pendency of any dispute relating to swapping 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 swapping of loan and interest on loan.

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

(i) Gross loans, cumulative loan repayment up to previous year as admitted by the Commission in order dated 10.5.2005 have been taken as the opening balance as on 1.4.2004.

(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) Gross loans as admitted by the Commission in the order dated 10.5.2005 has been considered as notional loan and the weighted average rate of interest on loan for respective years as per above has been multiplied to arrive at interest on loan.

(iv) Notional loan component of FERV in case of Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines as per para 2 as above have been included and Weighted average rate of interest as per (ii) have been considered.

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

(i) Details of net outstanding loan as on 31.3.2004, repayment schedule for the period 2004-09, rate of interest as on 1.4.2004,

exchange rate as on 31.3.2004 etc. have been taken from the loan allocation statement submitted by the petitioner for working out weighted average rate of interest.

- (ii) The petitioner has claimed interest on loan by considering refinancing of Bond-XIII Option-I and part Bond-XII with IBRD-II loan, the same has not been considered.
- (iii) In case of Talcher-Kolar HVDC line (Pole-I), etc. the petitioner has shown the funding by considering an additional KFW-Hermes (Fixed) loan which is not being considered.
- (iv) In case of KFW-Hermes and commercial (floating) loans, the repayment amount considered by the petitioner is slightly different. Therefore, the repayment as per loan allocation has been considered for the purpose of tariff calculation.
- (v) Gross notional loan and cumulative repayment up to 31.3.2004 have been taken from the order dated 10.5. 2005.
- (vi) Notional loan arising out of FERV in case of Talcher-Kolar HVDC line (Pole-I), etc. and the Earth electrode lines and additional capitalization in all the assets during the years 2001-04 has been considered as per para 17 above.
- (vii) The repayment of notional loan arising due to additional capitalization and FERV during the years 2003-04 has been worked out by the following formula:

$$\frac{\text{Actual repayment of actual loan during each year}}{\text{Opening balance of actual loans during corresponding year}} \times \left(\text{Opening balance + addition of normative loan during corresponding Year} \right)$$

- (viii) 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:

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

- (ix) Moratorium in repayment of loan is considered with reference to normative loan and if the normative repayment of loan during the year is less than the depreciation including AAD during the year, then depreciation including AAD during the year is deemed as normative repayment of loan during the year.
- (x) Weighted average rate of interest on actual loan worked out as above is applied on the notional average loan during the year to arrive at the interest on loan.
- (xi) OBC, Punjab National Bank – II, KFW-Hermis Floating, KFW-Commercial-Floating and IBRD-II loans carry the floating rates of interest and rates of interest as applicable as on 1.4.2004 have 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.

23. Based on the above, the year-wise details of interest worked out in respect of the five elements is given in Annexure III of this order. A summary of the details is given hereunder:

	(Rs. in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines	10732.10	9794.71	8767.75	7740.79	6713.83

LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays	900.92	840.20	764.01	683.40	602.78
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-I at Hossur, associated bays, and 220 kV switchyard at Hossur	554.63	531.94	496.70	449.03	401.36
315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays	51.74	49.14	45.67	41.32	36.97
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.	672.51	630.78	572.41	514.05	455.69
Total	12911.9	11846.77	10646.54	9428.59	8210.63

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 calculations in support of depreciation allowed are appended as per Annexure IV to the order. The summary is as under:

	(Rs. in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines	5928.10	5928.10	5928.10	5928.10	5928.10
LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays	340.20	340.20	340.20	340.20	340.20
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-1 at Hossur, associated bays, and 220 kV switchyard at Hossur	220.70	220.70	220.70	220.70	220.70
315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays	26.05	26.05	26.05	26.05	26.05
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.	249.76	249.76	249.76	249.76	249.76
Total	6764.81	6764.81	6764.81	6764.81	6764.81

ADVANCE AGAINST DEPRECIATION

26. 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

27. 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.

28. 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 31.3.2004.

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

- (i) 1/10th of gross loan is worked out from the gross notional loan, as per para 23 above.
- (ii) Repayment of notional loan during the year has been considered in accordance with para 23 above.
- (iii) Depreciation as worked out has been considered in para 25 above.
- (iv) Cumulative depreciation up to 31.3.2004 has been worked out considering cumulative depreciation/AAD up to 2003-04 as per the order dated 10.5.2005.
- (v) Cumulative depreciation/Advance Against Depreciation up to preceding year along with the depreciation of the current year has been considered for working out the AAD.

30. The details of Advance Against Depreciation allowed for each asset are given in Annexure V to this order. The summary of the details is hereunder:

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines	3942.60	8380.09	8380.09	8380.09	8380.09

LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays	0.00	196.02	470.30	470.30	470.30
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-1 at Hossur, associated bays, and 220 kV switchyard at Hossur	0.00	0.00	75.37	289.77	289.77
315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays	0.00	0.00	0.00	15.39	20.82
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.	0.00	115.20	342.42	342.42	342.42
Total	3942.60	8691.31	9268.18	9497.97	9503.4

OPERATION & MAINTENANCE EXPENSES

31. 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

32. The petitioner has claimed O & M expenses for ckt-kms of line lengths and pays at following assets, which has been allowed. Accordingly, the O & M expenses for the five elements in the instant petition are as under:

(Rs. in lakh)					
	2004-05	2005-06	2006-07	2007-08	2008-09
Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines					
O & M expenses for 2803.43 ckt-kms line	636.38	661.61	689.64	714.87	745.71
O & M expenses for 35 bays	984.20	1023.75	1064.70	1107.05	1151.50
Total	1620.58	1685.36	1754.34	1821.92	1897.21
LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays					
O & M expenses for 241.21 ckt-kms line	54.75	56.93	59.34	61.51	64.16
O & M expenses for 4 bays	112.48	117.00	121.68	126.52	131.60
Total	167.23	173.93	181.02	188.03	195.76
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-1 at Hossur, associated bays, and 220 kV switchyard at Hossur					
O & M expenses for 127.06 ckt-kms line	28.84	29.99	31.26	32.40	33.80
O & M expenses for 6 bays	168.72	175.50	182.52	189.78	197.40
Total	197.56	205.49	213.78	222.18	231.20

315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays					
O & M expenses for 0 ckt-kms line	0.00	0.00	0.00	0.00	0.00
O & M expenses for 4 bays	112.48	117.00	121.68	126.52	131.60
Total	112.48	117.00	121.68	126.52	131.60
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.					
O & M expenses for 101.92 ckt-kms line	23.14	24.05	25.07	25.99	27.11
O & M expenses for 10 bays	281.20	292.50	304.20	316.30	329.00
Total	304.34	316.55	329.27	342.29	356.11
Grant total	2402.19	2498.33	2600.09	2700.94	2811.88

33. 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

34. 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 has been considered as the historical cost and maintenance spares have been

worked out accordingly by escalating 1% of the historical cost @ 6% per annum.

(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 of 2 months' transmission charges claimed in the petition. In the tariff being allowed, receivables have been worked out on the basis of 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.

35. The necessary computations in support of interest on working capital are appended as annexure VI to this order. Summary of the details is given herein below.

	(Rs. in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines	702.85	777.85	775.03	772.97	771.95
LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays	44.43	47.72	52.16	51.80	51.51
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-1 at Hossur, associated bays, and 220 kV switchyard at Hossur	30.08	30.36	31.76	35.40	35.36
315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays	5.43	5.55	5.67	6.04	6.25
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.	36.61	38.75	42.59	42.52	42.52
Total	819.40	900.23	907.21	908.73	907.59

TRANSMISSION CHARGES

36. Summary sheets showing basic details of capital cost and other related aspects in respect of the five elements under consideration in this petition are annexed to this order. The total transmission charges being allowed in respect of the five elements are given hereinunder:

	(Rs. in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Return on equity	6210.18	6210.18	6210.18	6210.18	6210.18
Interest on loan	12911.90	11846.77	10646.54	9428.59	8210.63
Depreciation	6764.81	6764.81	6764.81	6764.81	6764.81
Advance Against Depreciation	3942.60	8691.31	9268.19	9497.97	9503.40
O & M expenses	2402.19	2498.33	2600.09	2700.94	2811.88
Interest on working capital	819.40	900.23	907.21	908.73	907.59
Total	33051.08	36911.63	36397.02	35511.22	34408.49

37. 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.

38. The petitioner by an affidavit dated 13.2.2006 has sought approval for the reimbursement of expenditure of Rs.1,03,409/- incurred on publication of notices in the newspapers. The petitioner shall claim reimbursement of the said expenditure directly from the respondents in one instalment in the ratio applicable for sharing of transmission charges. 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.

Impact of additional capitalization for the years 2001-04

39. In the petitions filed by NTPC for approval of revised fixed charges for additional capitalization for the period 1.4.2001 to 31.3.2004, the Commission has decided that additional capital expenditure be added to the gross block as on 1.4.2001 to arrive at gross block as on 1.4.2004 for the purpose of fixation of tariff for the period 2004-05 to 2008-09. The Commission has further ordered that NTPC would be entitled to earn return on equity @ 16% on equity portion of additional capitalization approved and interest on loan at the rate as applicable during 2001-02 to 2003-04. The return on equity and interest on loan are payable on additional capitalization from 1st April of the financial year following the financial year to which additional capital expenditure relates.

40. Based on the above, the petitioner shall be entitled to recover additional return on equity and interest on loan pertaining to the period ending 31.3.2004, as per the details contained in attached Annexure VII.

41. This order disposes of Petition No.84/2005.

Sd-/

sd-/

sd-/

sd-/

(A.H. JUNG)
MEMBER

(BHANU BHUSHAN)
MEMBER

(K.N.SINHA)
MEMBER

(ASHOK BASU)
CHAIRPERSON

New Delhi dated the 9th May 2006

Summary Sheet				
Name of the Company:		PGCIL		
Name of the Element:		Talcher - Kolar HVDC line (Pole-1), HVDC terminal station (Pole-I) at Talcher and Kolar and the earth electrode lines		
Actual DOCO:		1.12.2002		
Petition No.:		84/2005		
Tariff setting Period:		2004-09		
(Rs.in lakh)				
1	Capital Cost of the Project			184528.27
2	Admitted Capital Cost as on 1. 4.2004 for Calculation of Debt and Equity			184528.27
3	Additional Capitalisation(works)			5487.37
	2001-02		0.00	
	2002-03		3953.83	
	2003-04		1533.54	
	Total		5487.37	
4	Additional Capitalisation(FERV)			4090.48
	2001-02		0.00	
	2002-03		4692.81	
	2003-04		-602.33	
	Total		4090.48	
5	Total Capital Cost as on 1. 4.2004(2+3+4)			194106.12
6	Means of Finance :			
	Debt	80.00%	155284.90	
	Equity	20.00%	38821.22	
	Total	100.00%	194106.12	
7	Gross Loan as on 1. 4.2004			155284.90
8	Cumulative Repayment up to 31.3.2009 :			74778.02
	Repaid up to 31. 3.2004		4905.86	
	On ACE & FERV up to 31. 3.2004		160.62	
	1. 4.2004 to 31. 3.2009		69711.54	
	Total		74778.02	
9	Balance Loan to be repaid beyond 31. 3.2009 :			80506.88
10	Depreciation recovered up to 31. 3.2009 :			74778.02
		Dep	AAD	Total
	Recovered up to 31. 3.2004	7516.51	0.00	7516.51
	On ACE & FERV up to 31. 3.2004	158.06	0.00	158.06
	1. 4.2004 to 31. 3.2009	29640.50	37462.95	67103.45
	Total			74778.02
11	Balance Depreciation to be recovered beyond 31. 3.2009 :			99461.88
	Capital cost for the purpose of Depreciation			184528.27
	ACE + FERV			9577.85
	Capital cost as 1. 4.2004			194106.12
	Less: Land Cost			506.23
				193599.89
	90% of Capital Cost as above			174239.90
	Cum. Depreciation to be recovered up to 31. 3.2009			74778.02
	Balance Depreciation to be recovered beyond 31. 3.2009			99461.88

Summary Sheet				
Name of the Company:		PGCIL		
Name of the Element:		LILO of 400 kV S/C Cuddapah-Banglore line at Kolar including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line with associated bays		
Actual Date of commercial operation:		1.12.2002		
Petition No.:		84/2005		
Tariff setting Period:		2004-09		
				(Rs.in lacs)
1	Capital Cost of the Project			11285.96
2	Admitted Capital Cost as on 01.04.2004 for Calculation of Debt and Equity			11285.96
3	Additional Capitalisation(works)			588.10
	2001-02		0.00	
	2002-03		396.15	
	2003-04		191.95	
	Total		588.10	
4	Additional Capitalisation(FERV)			0.00
	2001-02		0.00	
	2002-03		0.00	
	2003-04		0.00	
	Total		0.00	
5	Total Capital Cost as on 01.04.2004(2+3+4)			11874.06
6	Means of Finance :			
	Debt	80.00%	9499.25	
	Equity	20.00%	2374.81	
	Total	100.00%	11874.06	
7	Gross Loan as on 01.04.2004			9499.25
8	Cumulative Repayment up to 31.3.2009 :			3734.27
	Repaid up to 31. 3.2004		110.30	
	1. 4.2001 to 31. 3.2004 (ACE & FERV)		3.02	
	1. 4.2004 to 31. 3.2009		3620.95	
	Total		3734.27	
9	Balance Loan to be repaid beyond 31. 3.2009 :			5764.98
10	Depreciation recovered up to 31. 3.2009 :			3734.27
		Dep	AAD	Total
	Recovered up to 31. 3.2004	426.39	0.00	426.39
	1. 4.2001 to 31. 3.2004 (ACE & FERV)	0.00	0.00	0.00
	1. 4.2004 to 31. 3.2009	1700.98	1606.91	3307.88
	Total			3734.27
11	Balance Depreciation to be recovered beyond 31. 3.2009 :			6905.51
	Capital cost for the purpose of Depreciation			11285.96
	ACE + FERV			588.10
	Capital cost as 1. 4.2004			11874.06
	Less: Land Cost			52.08
				11821.98
	90% of Capital Cost as above			10639.78
	Cum. Depreciation to be recovered up to 31. 3.2009			3734.27
	Balance Depreciation to be recovered beyond 31. 3.2009			6905.51

Summary Sheet				
Name of the Company:		PGCIL		
Name of the Element:		400 kV AC Hossur-Salem S/C line ,315 MVA 400/220 KV Auto Transformer -I at Hossur including associated bays and 220 kV switchyard at Hossur		
Actual Date of commercial operation:		1.12.2002		
Petition No.:		84/2005		
Tariff setting Period:		2004-09		
(Rs.in lacs)				
1	Capital Cost of the Project			6848.47
2	Admitted Capital Cost as on 1. 4.2004 for Calculation of Debt and Equity			6848.47
3	Additional Capitalisation(works)			829.06
	2001-02		0.00	
	2002-03		635.87	
	2003-04		193.19	
	Total		829.06	
4	Additional Capitalisation(FERV)			0.00
	2001-02		0.00	
	2002-03		0.00	
	2003-04		0.00	
	Total		0.00	
5	Total Capital Cost as on 1. 4.2004(2+3+4)			7677.53
6	Means of Finance :			
	Debt	80.00%	6142.02	
	Equity	20.00%	1535.51	
	Total	100.00%	7677.53	
7	Gross Loan as on 1. 4.2004			6142.02
8	Cumulative Repayment up to 31.3.2009 :			2015.41
	Repaid up to 31. 3.2004		41.20	
	1. 4.2001 to 31. 3.2004 (ACE & FERV)		1.39	
	1. 4.2004 to 31. 3.2009		1972.83	
	Total		2015.41	
9	Balance Loan to be repaid beyond 31. 3.2009 :			4126.61
10	Depreciation recovered up to 31. 3.2009 :			2015.41
		Dep	AAD	Total
	Recovered up to 31. 3.2004	256.99	0.00	256.99
	1. 4.2001 to 31. 3.2004 (ACE & FERV)	0.00	0.00	0.00
	1. 4.2004 to 31. 3.2009	1103.52	654.91	1758.43
	Total			2015.41
11	Balance Depreciation to be recovered beyond 31. 3.2009 :			4842.96
	Capital cost for the purpose of Depreciation			6848.47
	ACE + FERV			829.06
	Capital cost as 01.04.2004			7677.53
	Less: Land Cost			57.12
				7620.41
	90% of Capital Cost as above			6858.37
	Cum. Depreciation to be recovered up to 31. 3.2009			2015.41
	Balance Depreciation to be recovered beyond 31. 3.2009			4842.96

Summary Sheet				
Name of the Company:		PGCIL		
Name of the Element:		315 MVA 400/220 kV Auto Transformer - 2 at Hossur with associated bays		
Actual Date of commercial operation:		1. 2.2003		
Petition No.:		84/2005		
Tariff setting Period:		2004-09		
(Rs.in lacs)				
1	Capital Cost of the Project			714.58
2	Admitted Capital Cost as on 1. 4.2004 for Calculation of Debt and Equity			714.58
3	Additional Capitalisation(works)			8.92
	2001-02		0.00	
	2002-03		0.00	
	2003-04		8.92	
	Total		8.92	
4	Additional Capitalisation(FERV)			0.00
	2001-02		0.00	
	2002-03		0.00	
	2003-04		0.00	
	Total		0.00	
5	Total Capital Cost as on 1. 4.2004(2+3+4)			723.50
6	Means of Finance :			
	Debt	80.00%	578.80	
	Equity	20.00%	144.70	
	Total	100.00%	723.50	
7	Gross Loan as on 1. 4.2004			578.80
8	Cumulative Repayment up to 31.3.2009 :			196.45
	Repaid up to 31. 3.2004		3.70	
	1. 4.2001 to 31. 3.2004 (ACE & FERV)		0.04	
	1. 4.2004 to 31. 3.2009		192.70	
	Total		196.45	
9	Balance Loan to be repaid beyond 31. 3.2009 :			382.35
10	Depreciation recovered up to 31. 3.2009 :			196.45
		Dep	AAD	Total
	Recovered up to 31. 3.2004	30.01	0.00	30.01
	1. 4.2001 to 31. 3.2004 (ACE & FERV)	0.00	0.00	0.00
	1. 4.2004 to 31. 3.2009	130.23	36.21	166.44
	Total			196.45
11	Balance Depreciation to be recovered beyond 31.03.2009 :			454.70
	Capital cost for the purpose of Depreciation			714.58
	ACE + FERV			8.92
	Capital cost as 1. 4.2004			723.50
	Less: Land Cost			0.00
				723.50
	90% of Capital Cost as above			651.15
	Cum. Depreciation to be recovered up to 31. 3.2009			196.45
	Balance Depreciation to be recovered beyond 31. 3.2009			454.70

Summary Sheet				
Name of the Company:		PGCIL		
Name of the Element:		500 MVA 400/220 KV Auto Transformer (comprising 4x167 MVA single phase units) with associated bays and 220 KV Switchyard at Kolar and 400 KV D/C Kolar-Hoody alongwith associated bays.		
Actual Date of commercial operation:		1. 2.2003		
Petition No.:		84/2005		
Tariff setting Period:		2004-09		
(Rs.in lacs)				
1	Capital Cost of the Project			8096.77
2	Admitted Capital Cost as on 01.04.2004 for Calculation of Debt and Equity			8096.77
3	Additional Capitalisation(works)			417.53
	2001-02		0.00	
	2002-03		303.74	
	2003-04		113.79	
	Total		417.53	
4	Additional Capitalisation(FERV)			0.00
	2001-02		0.00	
	2002-03		0.00	
	2003-04		0.00	
	Total		0.00	
5	Total Capital Cost as on 1. 4.2004(2+3+4)			8514.30
6	Means of Finance :			
	Debt	82.59%	7032.00	
	Equity	17.41%	1482.30	
	Total	100.00%	8514.30	
7	Gross Loan as on 1. 4.2004			7032.00
8	Cumulative Repayment up to 31.3.2009 :			2665.27
	Repaid up to 31. 3.2004		46.80	
	1. 4.2001 to 31. 3.2004 (ACE & FERV)		0.00	
	1. 4.2004 to 31. 3.2009		2618.47	
	Total		2665.27	
9	Balance Loan to be repaid beyond 31.03.2009 :			4366.73
10	Depreciation recovered up to 31. 3.2009 :			2665.27
		Dep	AAD	Total
	Recovered up to 31. 3.2004	274.02	0.00	274.02
	1. 4.2001 to 31. 3.2004 (ACE & FERV)	0.00	0.00	0.00
	1. 4.2004 to 31. 3.2009	1248.79	1142.46	2391.25
	Total			2665.27
11	Balance Depreciation to be recovered beyond 31. 3.2009 :			4950.72
	Capital cost for the purpose of Depreciation			8096.77
	ACE + FERV			417.53
	Capital cost as 1. 4.2004			8514.30
	Less: Land Cost			52.09
				8462.21
	90% of Capital Cost as above			7615.99
	Cum. Depreciation to be recovered up to 31. 3.2009			2665.27
	Balance Depreciation to be recovered beyond 31. 3.2009			4950.72

Transmission charges claimed by the petitioner

Annexure I

(Rs. in lakh)

Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines					
	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	5928.06	5928.06	5928.06	5928.06	5928.06
Interest on Loan	10602.26	9673.38	8658.61	7643.30	6627.77
Return on Equity	5557.99	5557.99	5557.99	5557.99	5557.99
Advance against Depreciation	3965.97	8352.60	8369.65	8388.45	8390.64
Interest on Working Capital	709.19	783.83	781.90	780.78	780.43
O & M Expenses	1620.58	1685.36	1754.34	1821.92	1897.21
Total	28384.05	31981.21	31050.56	30120.51	29182.10
LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays					
	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	340.20	340.20	340.20	340.20	340.20
Interest on Loan	765.35	708.50	642.70	575.90	508.54
Return on Equity	367.93	367.93	367.93	367.93	367.93
Advance against Depreciation	0.00	114.85	338.12	377.47	382.28
Interest on Working Capital	43.34	45.33	49.10	49.71	49.78
O & M Expenses	167.23	173.93	181.02	188.03	195.76
Total	1684.06	1750.74	1919.07	1899.24	1844.49
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-1 at Hossur, associated bays, and 220 kV switchyard at Hossur					
	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	220.70	220.70	220.70	220.70	220.70
Interest on Loan	316.06	298.36	277.26	254.07	229.64
Return on Equity	242.97	242.97	242.97	242.97	242.97
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	27.34	27.76	28.16	28.56	28.98
O & M Expenses	197.56	205.49	213.78	222.18	231.20
Total	1004.64	995.28	982.87	968.48	953.50
315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays					
	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	26.05	26.05	26.05	26.05	26.05
Interest on Loan	29.06	27.52	25.64	23.54	21.35
Return on Equity	21.21	21.21	21.21	21.21	21.21
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	5.07	5.21	5.35	5.49	5.64
O & M Expenses	112.48	117.00	121.68	126.52	131.60
Total	193.86	196.98	199.92	202.81	205.85
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.					
	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	249.76	249.76	249.76	249.76	249.76
Interest on Loan	541.81	508.41	464.41	419.37	373.72
Return on Equity	207.52	207.52	207.52	207.52	207.52
Advance against Depreciation	0.00	0.00	170.62	268.71	273.52
Interest on Working Capital	34.80	35.11	38.24	40.14	40.47
O & M Expenses	304.34	316.55	329.27	342.29	356.11
Total	1338.22	1317.35	1459.82	1527.79	1501.10

Details of interest on working capital claimed by the petitioner

Annexure II

(Rs. in lakh)

Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines					
	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	2053.25	2176.44	2307.03	2445.45	2592.18
O & M expenses	135.05	140.45	146.20	151.83	158.10
Receivables	4730.68	5330.20	5175.09	5020.08	4863.68
Total	6918.97	7647.09	7628.32	7617.36	7613.97
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	709.19	783.83	781.90	780.78	780.43
LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays					
	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	128.25	135.94	144.10	152.74	161.91
O & M expenses	13.94	14.49	15.08	15.67	16.31
Receivables	280.68	291.79	319.84	316.54	307.42
Total	422.86	442.23	479.03	484.95	485.64
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	43.34	45.33	49.10	49.71	49.78
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-I at Hossur, associated bays, and 220 kV switchyard at Hossur					
	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	82.85	87.82	93.09	98.67	104.59
O & M expenses	16.46	17.12	17.81	18.52	19.27
Receivables	167.44	165.88	163.81	161.41	158.92
Total	266.75	270.82	274.71	278.60	282.78
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	27.34	27.76	28.16	28.56	28.98
315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays					
	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	7.75	8.21	8.70	9.23	9.78
O & M expenses	9.37	9.75	10.14	10.54	10.97
Receivables	32.31	32.83	33.32	33.80	34.31
Total	49.43	50.79	52.16	53.57	55.06
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	5.07	5.21	5.35	5.49	5.64
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.					
	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	91.10	96.56	102.36	108.50	115.01
O & M expenses	25.36	26.38	27.44	28.52	29.68
Receivables	223.04	219.56	243.30	254.63	250.18
Total	339.50	342.50	373.10	391.65	394.87
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	34.80	35.11	38.24	40.14	40.47

Details of Interest on Loan

Annexure III
(Rs. in lakh)

Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines						
		2004-05	2005-06	2006-07	2007-08	2008-09
Gross Loan as per order dated 10.5.2005	150362.04					
Addition due to Additional Capitalisation	2820.42					
Addition due to FERV	2102.44					
Gross Normative Loan	155284.90	155284.90	155284.90	155284.90	155284.90	155284.90
Cumulative Repayment upto Previous Year		5066.48	17545.26	31853.45	46161.64	60469.83
Net Loan-Opening		150218.42	137739.63	123431.45	109123.26	94815.07
Repayment during the year		12478.79	14308.19	14308.19	14308.19	14308.19
Net Loan-Closing		137739.63	123431.45	109123.26	94815.07	80506.88
Average Loan		143979.03	130585.54	116277.35	101969.16	87660.97
Weighted Average Rate of Interest on Loan		7.4539%	7.5006%	7.5404%	7.5913%	7.6589%
Interest		10732.10	9794.71	8767.75	7740.79	6713.83
LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays						
		2004-05	2005-06	2006-07	2007-08	2008-09
Gross Loan as per order dated 10.5.2005	9246.00					
Addition due to Additional Capitalisation	253.25					
Addition due to FERV	0.00					
Gross Normative Loan	9499.25	9499.25	9499.25	9499.25	9499.25	9499.25
Cumulative Repayment upto Previous Year		113.32	595.05	1302.80	2113.29	2923.78
Net Loan-Opening		9385.93	8904.20	8196.45	7385.96	6575.47
Repayment during the year		481.73	707.75	810.49	810.49	810.49
Net Loan-Closing		8904.20	8196.45	7385.96	6575.47	5764.98
Average Loan		9145.06	8550.32	7791.20	6980.71	6170.22
Weighted Average Rate of Interest on Loan		9.8515%	9.8265%	9.8061%	9.7898%	9.7691%
Interest		900.92	840.20	764.01	683.40	602.78
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-1 at Hossur, associated bays, and 220 kV switchyard at Hossur						
		2004-05	2005-06	2006-07	2007-08	2008-09
Gross Loan as per order dated 10.5.2005	5942.00					
Addition due to Additional Capitalisation	200.02					
Addition due to FERV	0.00					
Gross Normative Loan	6142.02	6142.02	6142.02	6142.02	6142.02	6142.02
Cumulative Repayment upto Previous Year		42.59	263.29	483.99	994.47	1504.94
Net Loan-Opening		6099.44	5878.73	5658.03	5147.56	4637.08
Repayment during the year		220.70	220.70	510.47	510.47	510.47
Net Loan-Closing		5878.73	5658.03	5147.56	4637.08	4126.61
Average Loan		5989.09	5768.38	5402.79	4892.32	4381.85
Weighted Average Rate of Interest on Loan		9.2606%	9.2217%	9.1935%	9.1783%	9.1595%
Interest		554.63	531.94	496.70	449.03	401.36
315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays						
		2004-05	2005-06	2006-07	2007-08	2008-09
Gross Loan as per order dated 10.5.2005	572.00					
Addition due to Additional Capitalisation	6.80					
Addition due to FERV	0.00					

Gross Normative Loan	578.80	578.80	578.80	578.80	578.80	578.80
Cumulative Repayment upto Previous Year		3.74	29.79	55.84	102.71	149.58
Net Loan-Opening		575.06	549.01	522.96	476.09	429.22
Repayment during the year		26.05	26.05	46.87	46.87	46.87
Net Loan-Closing		549.01	522.96	476.09	429.22	382.35
Average Loan		562.03	535.99	499.53	452.66	405.79
Weighted Average Rate of Interest on Loan		9.2055%	9.1685%	9.1417%	9.1273%	9.1096%
Interest		51.74	49.14	45.67	41.32	36.97
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.						
		2004-05	2005-06	2006-07	2007-08	2008-09
Gross Loan as per order dated 10.5.2005	7032.00					
Addition due to Additional Capitalisation	0.00					
Addition due to FERV	0.00					
Gross Normative Loan	7032.00	7032.00	7032.00	7032.00	7032.00	7032.00
Cumulative Repayment up to Previous Year		46.80	296.56	888.74	1480.91	2073.09
Net Loan-Opening		6985.20	6735.44	6143.26	5551.09	4958.91
Repayment during the year		249.76	592.18	592.18	592.18	592.18
Net Loan-Closing		6735.44	6143.26	5551.09	4958.91	4366.73
Average Loan		6860.32	6439.35	5847.18	5255.00	4662.82
Weighted Average Rate of Interest on Loan		9.8029%	9.7956%	9.7896%	9.7821%	9.7728%
Interest		672.51	630.78	572.41	514.05	455.69

Details of depreciation

Annexure IV

(Rs. in lakh)

Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines							
			2004-05	2005-06	2006-07	2007-08	2008-09
As per Order dated 10.5.2005		184528.27					
Addition during 2001-04 due to Additional Capitalisation		5487.37					
Addition during 2001-04 due to FERV		4090.48					
Gross Block as on 31.3.2004		194106.12	194106.12	194106.12	194106.12	194106.12	194106.12
Rate of Depreciation	3.0541%						
Depreciable Value	90%		174239.90	174239.90	174239.90	174239.90	174239.90
Balance Useful life of the asset			-	-	-	-	-
Remaining Depreciable Value			166565.34	156694.64	142386.45	128078.26	113770.07
Depreciation			5928.10	5928.10	5928.10	5928.10	5928.10
LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays							
			2004-05	2005-06	2006-07	2007-08	2008-09
As per Order dated 10.5.2005		11285.96					
Addition during 2001-04 due to Additional Capitalisation		588.10					
Addition during 2001-04 due to FERV		0.00					
Gross Block as on 31.3.2004		11874.06	11874.06	11874.06	11874.06	11874.06	11874.06
Rate of Depreciation	2.8650%						
Depreciable Value	90%		10639.78	10639.78	10639.78	10639.78	10639.78
Balance Useful life of the asset							
Remaining Depreciable Value			10213.40	9873.20	9336.98	8526.49	7716.00
Depreciation			340.20	340.20	340.20	340.20	340.20
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-I at Hossur, associated bays, and 220 kV switchyard at Hossur							
			2004-05	2005-06	2006-07	2007-08	2008-09
As per Order dated 10.5.2005		6848.47					
Addition during 2001-04 due to Additional Capitalisation		829.06					
Addition during 2001-04 due to FERV		0.00					
Gross Block as on 31.3.2004		7677.53	7677.53	7677.53	7677.53	7677.53	7677.53
Rate of Depreciation	2.8747%						
Depreciable Value	90%		6858.37	6858.37	6858.37	6858.37	6858.37
Balance Useful life of the asset							

Remaining Depreciable Value			6601.38	6380.68	6159.98	5863.90	5353.43
Depreciation			220.70	220.70	220.70	220.70	220.70
315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays							
			2004-05	2005-06	2006-07	2007-08	2008-09
As per Order dated 10.5.2005		714.58					
Addition during 2001-04 due to Additional Capitalisation		8.92					
Addition during 2001-04 due to FERV		0.00					
Gross Block as on 31.3.2004		723.50	723.50	723.50	723.50	723.50	723.50
Rate of Depreciation	3.6000%						
Depreciable Value	90%		651.15	651.15	651.15	651.15	651.15
Balance Useful life of the asset							
Remaining Depreciable Value			621.14	595.10	569.05	543.01	501.57
Depreciation			26.05	26.05	26.05	26.05	26.05
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.							
			2004-05	2005-06	2006-07	2007-08	2008-09
As per Order dated 10.5. 2005		8096.77					
Addition during 2001-04 due to Additional Capitalisation		417.53					
Addition during 2001-04 due to FERV		0.00					
Gross Block as on 31.3.2004		8514.30	8514.30	8514.30	8514.30	8514.30	8514.30
Rate of Depreciation	2.9334%						
Depreciable Value	90%		7615.99	7615.99	7615.99	7615.99	7615.99
Balance Useful life of the asset							
Remaining Depreciable Value			7341.97	7092.22	6727.25	6135.08	5542.90
Depreciation			249.76	249.76	249.76	249.76	249.76

Details of Advance Against Depreciation

Annexure V

(Rs. in lakh)

Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines					
	2004-05	2005-06	2006-07	2007-08	2008-09
1/10th of Gross Loan(s)	15528.49	15528.49	15528.49	15528.49	15528.49
Repayment of the Loan	12478.79	14308.19	14308.19	14308.19	14308.19
Minimum of the above	12478.79	14308.19	14308.19	14308.19	14308.19
Depreciation during the year	5928.10	5928.10	5928.10	5928.10	5928.10
(A) Difference	6550.69	8380.09	8380.09	8380.09	8380.09
Cumulative Repayment of the Loan	17545.26	31853.45	46161.64	60469.83	74778.02
Cumulative Depreciation/ Advance against Depreciation	13602.67	23473.36	37781.55	52089.74	66397.93
(B) Difference	3942.60	8380.09	8380.09	8380.09	8380.09
Advance against Depreciation Minimum of (A) and (B)	3942.60	8380.09	8380.09	8380.09	8380.09
LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays					
	2004-05	2005-06	2006-07	2007-08	2008-09
1/10th of Gross Loan(s)	949.92	949.92	949.92	949.92	949.92
Repayment of the Loan	481.73	707.75	810.49	810.49	810.49
Minimum of the above	481.73	707.75	810.49	810.49	810.49
Depreciation during the year	340.20	340.20	340.20	340.20	340.20
(A) Difference	141.53	367.56	470.30	470.30	470.30
Cumulative Repayment of the Loan	595.05	1302.80	2113.29	2923.78	3734.27
Cumulative Depreciation/ Advance against Depreciation	766.58	1106.78	1642.99	2453.49	3263.98
(B) Difference	-171.54	196.02	470.30	470.30	470.30
Advance against Depreciation Minimum of (A) and (B)	0.00	196.02	470.30	470.30	470.30
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-1 at Hossur, associated bays, and 220 kV switchyard at Hossur					
	2004-05	2005-06	2006-07	2007-08	2008-09
1/10th of Gross Loan(s)	614.20	614.20	614.20	614.20	614.20
Repayment of the Loan	220.70	220.70	510.47	510.47	510.47
Minimum of the above	220.70	220.70	510.47	510.47	510.47
Depreciation during the year	220.70	220.70	220.70	220.70	220.70
(A) Difference	0.00	0.00	289.77	289.77	289.77
Cumulative Repayment of the Loan	263.29	483.99	994.47	1504.94	2015.41
Cumulative Depreciation/ Advance against Depreciation	477.69	698.39	919.10	1215.17	1725.64
(B) Difference	-214.40	-214.40	75.37	289.77	289.77
Advance against Depreciation Minimum of (A) and (B)	0.00	0.00	75.37	289.77	289.77
315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays					
	2004-05	2005-06	2006-07	2007-08	2008-09
1/10th of Gross Loan(s)	57.88	57.88	57.88	57.88	57.88
Repayment of the Loan	26.05	26.05	46.87	46.87	46.87
Minimum of the above	26.05	26.05	46.87	46.87	46.87
Depreciation during the year	26.05	26.05	26.05	26.05	26.05
(A) Difference	0.00	0.00	20.82	20.82	20.82
Cumulative Repayment of the Loan	29.79	55.84	102.71	149.58	196.45
Cumulative Depreciation/ Advance against Depreciation	56.05	82.10	108.14	134.19	175.62
(B) Difference	-26.26	-26.26	-5.44	15.39	20.82
Advance against Depreciation Minimum of (A) and (B)	0.00	0.00	0.00	15.39	20.82
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.					

	2004-05	2005-06	2006-07	2007-08	2008-09
1/10th of Gross Loan(s)	703.20	703.20	703.20	703.20	703.20
Repayment of the Loan	249.76	592.18	592.18	592.18	592.18
Minimum of the above	249.76	592.18	592.18	592.18	592.18
Depreciation during the year	249.76	249.76	249.76	249.76	249.76
(A) Difference	0.00	342.42	342.42	342.42	342.42
Cumulative Repayment of the Loan	296.56	888.74	1480.91	2073.09	2665.27
Cumulative Depreciation/ Advance against Depreciation	523.77	773.53	1138.49	1730.67	2322.85
(B) Difference	-227.22	115.20	342.42	342.42	342.42
Advance against Depreciation Minimum of (A) and (B)	0.00	115.20	342.42	342.42	342.42

Details of interest on working capital allowed

Annexure VI

(Rs. in lakh)

Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines					
	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	1995.12	2114.83	2241.72	2376.22	2518.79
O & M expenses	135.05	140.45	146.20	151.83	158.10
Receivables	4726.87	5333.51	5173.38	5013.14	4854.36
Total	6,857.03	7,588.79	7,561.29	7,541.19	7,531.25
Rate of interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	702.85	777.85	775.03	772.97	771.95
LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays					
	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	122.02	129.35	137.11	145.33	154.05
O & M expenses	13.94	14.49	15.09	15.67	16.31
Receivables	297.54	321.76	356.69	344.37	332.17
Total	433.50	465.60	508.88	505.37	502.53
Rate of interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	44.43	47.72	52.16	51.80	51.51
400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-1 at Hossur, associated bays, and 220 kV switchyard at Hossur					
	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	74.05	78.49	83.20	88.19	93.48
O & M expenses	16.46	17.12	17.82	18.52	19.27
Receivables	202.99	200.58	208.88	238.68	232.23
Total	293.50	296.19	309.89	345.38	344.97
Rate of interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	30.08	30.36	31.76	35.40	35.36
315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays					
	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	7.65	8.11	8.60	9.11	9.66
O & M expenses	9.37	9.75	10.14	10.54	10.97
Receivables	35.99	36.33	36.55	39.26	40.32
Total	53.02	54.19	55.29	58.92	60.95
Rate of interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	5.43	5.55	5.67	6.04	6.25
500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays.					
	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	86.68	91.89	97.40	103.24	109.44
O & M expenses	25.36	26.38	27.44	28.52	29.68
Receivables	245.12	259.76	290.66	283.09	275.67
Total	357.17	378.02	415.50	414.86	414.78
Rate of interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	36.61	38.75	42.59	42.52	42.52

CALCULATION OF IMPACT OF ADDITIONAL CAPITALISATION DURING THE YEAR 2001-04

Annexure VII

(a) Talcher-Kolar HVDC line (Pole-I), including the bipole line, HVDC terminal station (Pole-I) at Talcher and Kolar and the Earth electrode lines

(Rs. in Lakh)

		2001-02	2002-03	2003-04	Total
Period		0.00	0.33	1.00	
Additional Capitalisation			3953.83	1533.54	5487.37
Financing of Additional Capitalisation					
Notional Loan			2032.20	788.21	2820.42
Notional Equity			1921.63	745.33	2666.95
Total			3953.83	1533.54	5487.37
Effective Additional Capitalisation					
Opening Loan Balance			0.00	2032.20	
Addition of Loan			2032.20	788.21	2820.42
Repayment of Loan			0.00	92.02	92.02
Closing Loan Balance			2032.20	2728.40	
Effective Loan			0.00	2032.20	
Weighted Average Rate of Interest on Loan			7.4906%	7.5830%	
Effective Equity			0.00	1921.63	
Interest on Loan			0.00	154.10	154.10
Return on Equity	16%		0.00	307.46	307.46
Impact of Additional Capitalisation			0.00	461.56	461.56

(b) LILO of 400 kV S/C Cuddapah-Bangalore line at Kolar, including associated bays and common facilities at Kolar and 400 kV S/C Kolar-Madras line, with associated bays

(Rs. in Lakh)

		2001-02	2002-03	2003-04	Total
Period			0.33	1.00	
Additional Capitalisation			396.15	191.95	588.10
Financing of Additional Capitalisation					
Notional Loan			170.59	82.66	253.25
Notional Equity			225.56	109.29	334.85
Total			396.15	191.95	588.10
Effective Additional Capitalisation					
Opening Loan Balance			0.00	170.59	
Addition of Loan			170.59	82.66	253.25
Repayment of Loan			0.00	3.02	3.02
Closing Loan Balance			170.59	250.23	
Effective Loan			0.00	170.59	
Weighted Average Rate of Interest on Loan			9.8780%	9.9024%	
Effective Equity			0.00	225.56	
Interest on Loan			0.00	16.89	16.89
Return on Equity	16%		0.00	36.09	36.09
Impact of Additional Capitalisation			0.00	52.98	52.98

(c) 400 kV S/C Hossur-Salem line, 315 MVA 400/220 kV Auto-transformer-I at Hossur, associated bays, and 220 kV switchyard at Hossur

(Rs. in Lakh)

		2001-02	2002-03	2003-04	Total
Period			0.33	1.00	
Additional Capitalisation			635.87	193.19	829.06
Financing of Additional Capitalisation					
Notional Loan			153.41	46.61	200.02
Notional Equity			482.46	146.58	629.04
Total			635.87	193.19	829.06
Effective Additional Capitalisation					
Opening Loan Balance			0.00	153.41	
Addition of Loan			153.41	46.61	200.02
Repayment of Loan			0.00	1.39	1.39
Closing Loan Balance			153.41	198.64	
Effective Loan			0.00	153.41	
Weighted Average Rate of Interest on Loan			9.2548%	9.2862%	
Effective Equity			0.00	482.46	
Interest on Loan			0.00	14.25	14.25
Return on Equity	16%		0.00	77.19	77.19
Impact of Additional Capitalisation			0.00	91.44	91.44

(d) 315 MVA 400/220 Auto-transformer-2 at Hossur, with associated bays

(Rs. in Lakh)

		2001-02	2002-03	2003-04	Total
Period			0.17	1.00	
Additional Capitalisation			0.00	8.92	8.92
Financing of Additional Capitalisation					
Notional Loan			0.00	6.80	6.80
Notional Equity			0.00	2.12	2.12
Total			0.00	8.92	8.92
Effective Additional Capitalisation					
Opening Loan Balance			0.00	0.00	
Addition of Loan			0.00	6.80	6.80
Repayment of Loan			0.00	0.04	0.04
Closing Loan Balance			0.00	6.76	
Effective Loan			0.00	0.00	
Weighted Average Rate of Interest on Loan			8.9696%	9.2299%	
Effective Equity			0.00	0.00	
Interest on Loan			0.00	0.00	0.00
Return on Equity	16%		0.00	0.00	0.00
Impact of Additional Capitalisation			0.00	0.00	0.00

(e) 500 MVA 400/220 kV Auto-transformer (comprising of 4x167 MVA single phase units) associated bays and 220 kV switchyard at Kolar, and 400 kV D/C Kolar-Hoody line along with associated bays

(Rs. in Lakh)

		2001-02	2002-03	2003-04	Total
Period			0.17	1.00	
Additional Capitalisation			303.74	113.79	417.53
Financing of Additional Capitalisation					
Notional Loan			0.00	0.00	0.00
Notional Equity			303.74	113.79	417.53
Total			303.74	113.79	417.53
Effective Additional Capitalisation					
Opening Loan Balance			0.00	0.00	
Addition of Loan			0.00	0.00	0.00
Repayment of Loan			0.00	0.00	0.00
Closing Loan Balance			0.00	0.00	
Effective Loan			0.00	0.00	
Weighted Average Rate of Interest on Loan			9.5630%	9.8432%	
Effective Equity			0.00	303.74	
Interest on Loan			0.00	0.00	0.00
Return on Equity	16%		0.00	48.60	48.60
Impact of Additional Capitalisation			0.00	48.60	48.60