

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Coram:**

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

**Petition No.129/2006**

**In the matter of**

Approval of transmission tariff for (1) 40% Fixed Series Compensation on 400 kV Gooty-Neelmangala transmission line-II at Gooty under FSC project in Southern Region for the period 1.5.2005 to 31.3.2009 including additional capitalization from the date of commercial operation to 31.3.2006 and (2) Revision of transmission tariff for 40% Fixed Series Compensation (FSC) on Gooty-Neelmangla 400 kV S/C transmission line-I and on Nagarjunasagar-Cuddapah 400 kV transmission lines at Cuddapah end consequent to additional capitalization from date of commercial operation to 31.3.2006 in Southern Region

**And in the matter of**

- |   |                         |
|---|-------------------------|
| Power Grid Corporation of India Limited<br>Vs                 | <b>..Petitioner</b>     |
| 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  | <b>.....Respondents</b> |

**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 (a) for approval of transmission tariff for 40% Fixed Series Compensation on Gooty-Neelmangala 400 kV S/C transmission line-II at Gooty (hereinafter referred to as “ the transmission asset-I) and (b) for revision of transmission tariff for 40% Fixed Series Compensation on Gooty-Neelmangla 400

kV S/C transmission line-I and on Nagarjunasagar-Cuddapah 400 kV S/C transmission lines (hereinafter referred to as “the transmission asset-II”) in Southern Region from the date of commercial operation of the respective transmission asset 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 2004-05 and 2005-06. These assets are collectively referred to as “the transmission scheme”. The petitioner has also prayed for the reimbursement of expenditure incurred towards publication of notices in the newspapers and the petition filing fee by the beneficiaries.

2. The investment approval for the transmission scheme was accorded by the Board of Directors of the petitioner company vide letter dated 22.10.2002 at an estimated cost of Rs.5793 lakh, including IDC of Rs. 443 lakh. The dates of commercial operation of the respective transmission asset are as stated below:

Name of the transmission assets	Date of commercial operation
Transmission asset-I	1.5.2005
Transmission asset-II	1.11.2004

3. The provisional transmission charges for the transmission asset-I were approved by the Commission in its order dated 13.2.2006 in Petition No. 96/2005.

4. The Commission by its order dated 16.11.2006 had allowed tariff for the transmission asset-II for the period 1.11.2004 to 31.3.2009. The Commission in its said order dated 16.11.2006 had not considered additional capital expenditure beyond the date of commercial operation and the tariff was worked out on the basis of gross

block of Rs. 4003.22 lakh as on 1.11.2004. The transmission tariff approved was as under:

	(Rs. in lakh)				
	2004-05 (1.11.2004 to 31.3.2005)	2005-06	2006-07	2007-08	2008-09
Depreciation	58.93	141.42	141.42	141.42	141.42
Interest on Loan	104.51	242.42	227.59	208.85	189.14
Return on Equity	53.08	127.38	127.38	127.38	127.38
Advance against Depreciation	0.00	0.00	64.72	93.42	93.42
Interest on Working Capital	6.39	15.37	16.58	17.12	17.16
O & M Expenses	35.15	87.75	91.26	94.89	98.70
<b>Total</b>	<b>258.05</b>	<b>614.35</b>	<b>668.96</b>	<b>683.09</b>	<b>667.23</b>

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

Transmission asset-I

	(Rs. In lakh)			
	2005-06 (Pro rata)	2006-07	2007-08	2008-09
Depreciation	46.93	52.61	52.61	52.61
Interest on Loan	69.95	78.38	72.73	66.76
Return on Equity	54.75	61.38	61.38	61.38
Advance against Depreciation	0.00	9.01	18.87	18.87
Interest on Working Capital	5.00	5.81	6.01	6.04
O & M Expenses	26.81	30.42	31.63	32.90
<b>Total</b>	<b>203.44</b>	<b>237.61</b>	<b>243.23</b>	<b>238.55</b>

Transmission asset-II

	(Rs. in lakh)				
	2004-05 (Pro rata)	2005-06	2006-07	2007-08	2008-09
Depreciation	60.13	146.21	147.93	147.93	147.93
Interest on Loan	106.62	255.39	254.15	233.21	211.20
Return on Equity	54.18	132.25	134.26	134.26	134.26
Advance against Depreciation	0.00	0.00	0.00	0.00	101.15
Interest on Working Capital	6.50	15.83	16.23	16.23	18.01
O & M Expenses	35.15	87.75	91.26	94.89	98.70
<b>Total</b>	<b>262.57</b>	<b>637.43</b>	<b>643.83</b>	<b>626.53</b>	<b>711.25</b>

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

## Transmission asset-I

(Rs. in lakh)

	2005-06 (Pro rata)	2006-07	2007-08	2008-09
Maintenance Spares	13.83	14.59	15.46	16.39
O & M expenses	2.44	2.54	2.64	2.74
Receivables	36.99	39.60	40.54	39.76
Total	53.25	56.72	58.64	58.89
Rate of interest	10.25%	10.25%	10.25%	10.25%
Interest	5.00	5.81	6.01	6.04

## Transmission asset-II

(Rs.in lakh)

	2004-05 (Pro rata)	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	40.03	41.03	43.49	46.10	48.87
O & M expenses	7.03	7.31	7.61	7.91	8.23
Receivables	105.03	106.24	107.30	104.42	118.54
Total	152.09	154.59	158.40	158.43	175.64
Rate of interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	6.50	15.83	16.23	16.23	18.01

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 in case of the transmission asset-I. The petitioner has further claimed additional capitalisation for the year 2005-06 for the transmission asset-I and for the years 2004-05 and 2005-06 for the transmission asset-II. 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 purposes are given hereunder:

(Rs. in lakh)

Name of the transmission assets	Capital Expenditure on the date of commercial operation	Additional capital expenditure during 2004-05	Additional capital expenditure during 2005-06	Total Capital expenditure
Transmission asset-I	1382.59	N.A.	78.81	1461.40
Transmission asset-II	4003.22	10.19	95.73	4109.14
<b>Total</b>	<b>5385.81</b>	<b>10.19</b>	<b>174.54</b>	<b>5570.54</b>

### **Additional capitalization**

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:

**Transmission asset-I**

Year	Nature of expenditure
2005-06	Sub-station = Rs. 78.81 lakh
	<b>Total = Rs. 78.81 lakh</b>

**Transmission asset-II**

Year	Nature of expenditure
2004-05	Sub-station = Rs. 10.19 lakh
2005-06	Sub-station = Rs. 95.73 lakh
	<b>Total = Rs. 105.92 lakh</b>

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. The Commission in its order dated 16.11.2006 in Petition No. 20/2006 had deliberated on value of initial spares to be considered. At that time the audited original project cost of the transmission asset-II was not known, but the actual expenditure on the date of commercial operation only was known. Therefore, the cost of initial spares was restricted up to 1.5% of the capital cost as on 1.11.2004. Petition No. 20/2006 covered only the transmission asset-II. Since now the petitioner has submitted the audited capital cost as on 31.3.2006 for both the assets, the cost of initial spares has

been recalculated and restricted based on capital cost of the transmission scheme. This has been discussed in the succeeding paragraphs.

14. Since the dates of commercial operation of the transmission asset-I and the transmission asset-II are 1.5.2005 and 1.11.2004 respectively, the original project cost will be sum of the actual expenditure incurred up to 31.3.2007 in case of the transmission asset-I and the actual expenditure incurred up to 31.3.2006 in case of the transmission asset –II. However, in case of the transmission asset- I the actual expenditure incurred is available only up to 31.3.2006, so the same has been considered for computing the original project as follows:

For the transmission asset - I, the actual expenditure incurred up to 31.3.2006 is Rs.1461.40 lakh including initial spares of Rs.10.47 lakh and Rs. 1450.93 lakh, excluding initial spares.

For the transmission asset - II, the actual expenditure incurred upto 31.3.2006 is Rs.4109.14 lakh, including initial spares of Rs.133.75 lakh and Rs. 3975.39 lakh excluding initial spares.

Thus, the original project cost excluding initial spares works out to Rs.5426.32 lakh (Rs.1450.93 lakh + Rs.3975.39 lakh).

Original project cost = Original project cost excluding initial spares + 1.5% of original project cost on account of initial spares.

Original project cost = Rs. 5426.32 lakh+ 1.5% of original project cost on account of initial spares.

i.e. original project cost -1.5% original project cost = Rs. 5426.32 lakh.

i.e. 98.5% of original project cost = Rs. 5426.32 lakh.

Therefore, the original project cost is Rs. 5426.32 lakh/0.985 =Rs. 5508.95 lakh.

Therefore, the value of initial spares is restricted up to 1.5% of Rs.5508.95 lakh i.e. Rs.82.63 lakh.

In case of transmission asset -I the initial spares of value Rs.10.47 lakh have been allowed as claimed by the petitioner. The initial spares for Rs.72.16 lakh (Rs.82.63 lakh – Rs.10.47 lakh) are allowable in case of transmission asset – II.

15. Accordingly, for the purpose of computation of tariff, the capital cost works out as follows:

The capital cost for the transmission asset - II as on 31.3.2006 = capital cost as on 31.3.2006 excluding initial spares + allowable initial spares  
i.e. Rs 3975.39 lakh + Rs 72.16 lakh = Rs 4047.55 lakh

The actual expenditure on the date of commercial operation works out to Rs. 3941.63 lakh (Rs. 4047.55 lakh – Rs. 10.19 lakh –Rs. 95.73 lakh).

16. Based on the above, capital cost 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)

Name of the transmission assets	Capital cost on the date of commercial operation	Additional capital expenditure	Capital expenditure as on 31.3.2006
Transmission asset-I	1382.59	78.81	1461.40
Transmission asset-II	3941.63	105.92	4047.55
<b>Total</b>	<b>5324.22</b>	<b>184.73</b>	<b>5508.95</b>



## **DEBT- EQUITY RATIO**

17. 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.”

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

19. The petitioner has considered debt-equity ratio as actually deployed on the date of commercial operation of the respective asset. The petitioner has further considered the additional capitalization in the debt-equity ratio of 70:30.

20. 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 31.3.2006
Transmission asset-I	70.:30	70:30	414.79	438.43
Transmission asset-II	76.84:23.16	76.66:23.34	912.95	944.73

### **RETURN ON EQUITY**

21. 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.

22. For the reasons recorded in para 20 above, equity as given in the table under that para has been considered. However, tariff for the year 2004-05 and 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	Return in Equity		
	2004-05 (Pro rata)	2005-06 (Pro rata)	2006-09 (Each year)
Transmission asset-I	N.A.	54.75	61.38
Transmission asset-II	53.34	130.25	132.26

(Rs. in lakh)

### **INTEREST ON LOAN**

23. 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.”

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

(i) Gross loan opening has been considered for 2004-05 or 2005-06 as the case may be;

(ii) Gross loans on account of additional capital expenditure is added to the gross loan up to the date of commercial operation;

(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) Gross loan calculated has been considered as notional loan and the weighted average rate of interest on loan for respective years has been multiplied to arrive at interest on loan. For any year, higher of the depreciation and actual repayment has been considered as repayment.
- (v) Normative repayment has been worked out by the following formula:

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

- (vi) 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.
- (vii) Weighted average rate of interest on loan for respective years as per above has been multiplied to arrive at interest on loan.

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

- (i) Gross amount of loan, repayment of instalments and rate of interest as per the loan reconciliation statements of 2004-05 and 2005-06 have been used to work out weighted average rate of interest on actual loan. It includes part corresponding to additional capital expenditure.
- (ii) Notional loan arising out of additional capitalization has been added in loan amount as on date of commercial operation to arrive at total notional loan. The adjusted gross loan has been considered as normative loan for tariff calculations.
- (iii) Tariff has been worked out considering normative loan and normative repayments. Once the normative loan is arrived at, it is

considered for all purposes in the tariff. Normative repayment has been worked out by the following formula:

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

(iv) Moratorium in repayment of loan has been considered with reference to normative loan and if the normative repayment of loan during the year is less than the depreciation during the year, it 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 has been applied on the notional average loan during the year to arrive at the interest on loan.

(vi) In case of the transmission asset-I bridge financing of loan from IOB having a floating rate of interest 5.90% was replaced with Bond XVII having a fixed rate of interest of 7.39%. Therefore, weighted average rate of interest has been arrived at before calculating the interest pertaining to this loan, subject to mutual settlement between the parties in case of any change/resetting of the interest rate during the tariff period.

(vii) As regards the transmission asset –II, The petitioner has considered funding of additional capital expenditure during 2005-06 from Bond XVIII which was drawn from 9.3.2006. The interest on Bond XVIII for working out weighted average rate of interest has been considered

from 9.3.2006 on actual days basis for the remaining part of the year 2005-06 by the petitioner. However, as per methodology for the tariff block 2004-09, weighted average rate of interest has been worked out on average loan basis. Further, though the petitioner has considered Bond XVIII in opening gross loan, but as the same has been drawn during the year, it has not been considered in opening gross loan but added subsequently resulting in difference average value of loan.

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

#### Transmission asset-I

(Rs. in lakh)

Interest on Loan	2005-06 (Pro rata)	2006-07	2007-08	2008-09
Opening gross Loan	967.80	1022.97	1022.97	1022.97
Cumulative Repayment up to Previous Year	0.00	46.93	108.55	180.03
Net Loan-Opening	967.80	976.04	914.42	842.94
Addition due to Additional Capitalization	55.17	-	-	-
Repayment during the year	46.93	61.62	71.48	71.48
Net Loan-Closing	976.04	914.42	842.94	771.46
Average Loan	971.92	945.23	878.68	807.20
Weighted Average Rate of Interest on Loan	8.29%	8.29%	8.28%	8.27%
<b>Interest</b>	<b>73.87</b>	<b>78.38</b>	<b>72.73</b>	<b>66.76</b>

#### Transmission asset-II

(Rs. in lakh)

Interest on Loan	2004-05 (Pro rata)	2005-06	2006-07	2007-08	2008-09
Opening gross Loan	3028.68	3035.81	3102.82	3102.82	3102.82
Cumulative Repayment up to Previous Year	0.00	59.20	203.19	412.16	650.23
Net Loan-Opening	3028.68	2976.61	2899.63	2690.66	2452.59
Addition due to Additional Capitalization	7.13	67.01	-	-	-
Repayment during the year	59.20	143.99	208.97	238.07	238.07
Net Loan-Closing	2976.61	2899.63	2690.66	2452.59	2214.52
Average Loan	3002.64	2938.12	2795.14	2571.62	2333.55
Weighted Average Rate of Interest on Loan	8.39%	8.39%	8.38%	8.37%	8.37%
<b>Interest</b>	<b>104.99</b>	<b>246.50</b>	<b>234.21</b>	<b>215.20</b>	<b>195.22</b>

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

**DEPRECIATION**

28. 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.

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

**Transmission asset-I**

(Rs. in lakh)

	2005-06 (Pro rata)	2006-07	2007-08	2008-09
Gross Block	1382.59	1461.40	1461.40	1461.40
Addition due to Additional Capitalization	78.81			
Gross Block	1461.40	1461.40	1461.40	1461.40
Rate of Depreciation	3.6000%	3.6000%	3.6000%	3.6000%
Depreciable Value	1279.80	1315.26	1315.26	1315.26
Balance Useful life of the asset	-	-	-	-
Remaining Depreciable Value	1279.80	1268.33	1206.71	1135.23
<b>Depreciation</b>	<b>46.93</b>	<b>52.61</b>	<b>52.61</b>	<b>52.61</b>

**Transmission asset-II**

(Rs. in lakh)

	2004-05 (Pro rata)	2005-06	2006-07	2007-08	2008-09
Gross Block	3941.63	3951.82	4047.55	4047.55	4047.55
Addition due to Additional Capitalisation	10.19	95.73			
Gross Block	3951.82	4047.55	4047.55	4047.55	4047.55
Rate of Depreciation	3.6000%	3.6000%	3.6000%	3.6000%	3.6000%
Depreciable Value	3552.05	3599.72	3642.80	3642.80	3642.80
Balance Useful life of the asset	-	-	-	-	-
Remaining Depreciable Value	3552.05	3540.52	3439.61	3230.63	2992.56
<b>Depreciation</b>	<b>59.20</b>	<b>143.99</b>	<b>145.71</b>	<b>145.71</b>	<b>145.71</b>

**ADVANCE AGAINST DEPRECIATION**

30. 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



31. 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.

32. 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.

33. 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.

34. 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 26 above.
- (ii) Repayment of cumulative loan as well as repayment of notional loan during the year have been considered as per para 26 above.
- (iii) Depreciation worked out in para 29 above has been considered.

35. The details of Advance Against Depreciation allowed for transmission scheme are given hereunder:

**Transmission asset-I**

(Rs. in lakh)

	2005-06	2006-07	2007-08	2008-09
1/10 <sup>th</sup> of Gross Loan(s)	96.78	102.30	102.30	102.30
Repayment of the Loan	46.93	61.62	71.48	71.48
Minimum of the above	46.93	61.62	71.48	71.48
Depreciation during the year	46.93	52.61	52.61	52.61
(A) Difference	0.00	9.01	18.87	18.87
Cumulative Repayment of the Loan	46.93	108.55	180.03	251.51
Cumulative Depreciation/ Advance against Depreciation	46.93	99.54	161.16	232.64
(B) Difference	0.00	9.01	18.87	18.87
<b>Advance against Depreciation Minimum of (A) and (B)</b>	<b>0.00</b>	<b>9.01</b>	<b>18.87</b>	<b>18.87</b>

**Transmission asset-II**

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
1/10 <sup>th</sup> of Gross Loan(s)	302.87	303.58	310.28	310.28	310.28
Repayment of the Loan	59.20	143.99	208.97	238.07	238.07
Minimum of the above	59.20	143.99	208.97	238.07	238.07
Depreciation during the year	59.20	143.99	145.71	145.71	145.71
(A) Difference	0.00	0.00	63.26	92.36	92.36
Cumulative Repayment of the Loan	59.20	203.19	412.16	650.23	888.30
Cumulative Depreciation/ Advance against Depreciation	59.20	203.19	348.90	557.87	795.94
(B) Difference	0.00	0.00	63.26	92.36	92.36
<b>Advance against Depreciation Minimum of (A) and (B)</b>	<b>0.00</b>	<b>0.00</b>	<b>63.26</b>	<b>92.36</b>	<b>92.36</b>

**OPERATION & MAINTENANCE EXPENSES**

36. 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

37. The petitioner has claimed following O & M expenses each asset, which have been allowed. Accordingly, the petitioner's entitlement to O & M expenses in respect of transmission asset-I has been worked out as given hereunder:

	(Rs. in lakh)			
	2005-06 (Pro rata)	2006-07	2007-08	2008-09
Allowable O & M for 1 nos bays	26.81	30.42	31.63	32.90
<b>Total</b>	<b>26.81</b>	<b>30.42</b>	<b>31.63</b>	<b>32.90</b>

38. There is no change in O & M expenses approved under order dated 16.11.2006 in respect of the transmission asset-II.

39. 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**

40. 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)
Transmission asset-I	1.5.2005	1382.59	13.83
Transmission asset-II	1.11.2004	3930.01	39.42

**(ii) O & M expenses**

Regulation 56(v)(1)(a) of the 2004 regulations provides for operation and maintenance expenses for one month as a component of working capital. The petitioner has claimed O&M expenses for 1 month of O&M expenses of the respective year as claimed in the petition. This has been considered in the working capital.

**(iii) Receivables**

As per Regulation 56(v)(1)(c) of the 2004 regulations, receivables will be equivalent to two months average billing calculated on target availability level. The petitioner has claimed the receivables on the basis 2 months transmission charges claimed in the petition. In the tariff being allowed, receivables have been worked out on the basis 2 months transmission charges.

**(iv) Rate of interest on working capital**

As per Regulation 56(v) (2) of the 2004 regulations, rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on 1.4.2004 or on 1st April of the year in which the project or part thereof (as the case may be) is declared under

commercial operation, whichever is later. The interest on working capital is payable on normative basis notwithstanding that the transmission licensee has not taken working capital loan from any outside agency. The petitioner has claimed interest on working capital @ 10.25% based on SBI PLR as on 1.4.2004 and 1.4.2005, which is in accordance with the 2004 regulations and has been allowed.

41. The necessary computations in support of interest on working capital are appended below:

**Transmission asset-I**

(Rs. in lakh)

	2005-06 (Pro rata)	2006-07	2007-08	2008-09
Maintenance Spares	13.83	14.59	15.46	16.39
O & M expenses	2.44	2.54	2.64	2.74
Receivables	37.71	39.60	40.54	39.76
Total	53.98	56.72	58.64	58.89
<b>Interest</b>	<b>5.07</b>	<b>5.81</b>	<b>6.01</b>	<b>6.04</b>

**Transmission asset-II**

(Rs. in lakh)

	2004-05 (Pro rata)	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	39.42	40.40	42.83	45.40	48.12
O & M expenses	7.03	7.31	7.61	7.91	8.23
Receivables	103.64	104.01	113.92	116.30	113.61
Total	150.08	151.72	164.36	169.60	169.96
<b>Interest</b>	<b>6.41</b>	<b>15.55</b>	<b>16.85</b>	<b>17.38</b>	<b>17.42</b>

**TRANSMISSION CHARGES**

42. 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 the transmission assets covered under transmission scheme are summarized below.

### Transmission asset-I

(Rs. in lakh)

	<b>2005-06 (Pro rata)</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Depreciation	46.93	52.61	52.61	52.61
Interest on Loan	73.87	78.38	72.73	66.76
Return on Equity	54.75	61.38	61.38	61.38
Advance against Depreciation	0.00	9.01	18.87	18.87
Interest on Working Capital	5.07	5.81	6.01	6.04
O & M Expenses	26.81	30.42	31.63	32.90
<b>Total</b>	<b>207.43</b>	<b>237.61</b>	<b>243.23</b>	<b>238.55</b>

### Transmission asset-II

(Rs. in lakh)

	<b>2004-05 (Pro rata)</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Depreciation	59.20	143.99	145.71	145.71	145.71
Interest on Loan	104.99	246.50	234.21	215.20	195.22
Return on Equity	53.34	130.25	132.26	132.26	132.26
Advance against Depreciation	0.00	0.00	63.26	92.36	92.36
Interest on Working Capital	6.41	15.55	16.85	17.38	17.42
O & M Expenses	35.15	87.75	91.26	94.89	98.70
<b>Total</b>	<b>259.09</b>	<b>624.05</b>	<b>683.55</b>	<b>697.81</b>	<b>681.67</b>

43. 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.

44. The petitioner has sought approval for the reimbursement of expenditure of Rs.90, 553/- 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.

45. The petitioner is already billing the respondents on provisional basis in accordance with the order dated 13.2.2006 in Petition No. 96/2005 in respect of the transmission asset-I. The provisional billing of tariff shall be adjusted in the light of final tariff now approved by us. In case of the transmission asset-II, the revised transmission charges as now approved shall be claimed in supersession of the transmission charges approved under order dated 16.11.2006.

46. This order disposes of Petition No.129/2006.

Sd/-  
**(BHANU BHUSHAN)**  
**MEMBER**

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

**New Delhi dated the 23<sup>rd</sup> March 2007**

## CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN

## Transmission asset-I

## CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN

(Rs. in lakh)

	Details of Loan	2005-06	2006-07	2007-08	2008-09
<b>1</b>	<b>Bond-XIII Option-I</b>				
	Gross Loan opening	775.00	775.00	775.00	775.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	64.58	129.17
	Net Loan-Opening	775.00	775.00	710.42	645.83
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	64.58	64.58	64.58
	Net Loan-Closing	775.00	710.42	645.83	581.25
	Average Loan	775.00	742.71	678.13	613.54
	Rate of Interest	8.63%	8.63%	8.63%	8.63%
	Interest	66.88	64.10	58.52	52.95
	Repayment Schedule	12 Annual installments from 31.7.2006			
<b>2</b>	<b>Bond-XV</b>				
	Gross Loan opening	124.00	124.00	124.00	124.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	10.33
	Net Loan-Opening	124.00	124.00	124.00	113.67
	Additions during the year	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	10.33	10.33
	Net Loan-Closing	124.00	124.00	113.67	103.33
	Average Loan	124.00	124.00	118.83	108.50
	Rate of Interest	6.68%	6.68%	6.68%	6.68%
	Interest	8.28	8.28	7.94	7.25
	Repayment Schedule	12 Annual installments from 23-2-2008			
<b>3</b>	<b>Bond- XVII (Replaced IOB Bridge Finance Loan)</b>				
	Gross Loan opening	44.00	44.00	44.00	44.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	44.00	44.00	44.00	44.00
	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	44.00	44.00	44.00	44.00
	Average Loan	44.00	44.00	44.00	44.00
	Rate of Interest	6.99%	7.39%	7.39%	7.39%
	Interest	3.08	3.25	3.25	3.25
	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	24.80	24.80	24.80
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	24.80	24.80	24.80



	Additions during the year	24.80	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	24.80	24.80	24.80	24.80
	Average Loan	12.40	24.80	24.80	24.80
	Rate of Interest	8.15%	8.15%	8.15%	8.15%
	Interest	1.01	2.02	2.02	2.02
	Repayment Schedule		12 annual installments from 9-3-2010		
<b>5</b>	<b>Bond- XVIII ( For ACE) (Date of Drawal 09.03.2006)</b>				
	Gross Loan opening	0.00	55.17	55.17	55.17
	Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	55.17	55.17	55.17
	Additions during the year	55.17	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00
	Net Loan-Closing	55.17	55.17	55.17	55.17
	Average Loan	27.59	55.17	55.17	55.17
	Rate of Interest	8.15%	8.15%	8.15%	8.15%
	Interest	2.25	4.50	4.50	4.50
	Repayment Schedule		12 annual installments from 9.3.2010		
	<b>Total Loan</b>				
	Gross Loan opening	943.00	1022.97	1022.97	1022.97
	Cumulative Repayment up to DOCO/previous year	0.00	0.00	64.58	139.50
	Net Loan-Opening	943.00	1022.97	958.39	883.47
	Additions during the year	79.97	0.00	0.00	0.00
	Repayment during the year	0.00	64.58	74.92	74.92
	Net Loan-Closing	1022.97	958.39	883.47	808.55
	Average Loan	982.99	990.68	920.93	846.01
	Rate of Interest	8.29%	8.29%	8.28%	8.27%
	<b>Interest</b>	<b>81.50</b>	<b>82.15</b>	<b>76.23</b>	<b>69.97</b>

## Transmission asset-II

(Rs. in lakh)

	Details of Loan	2004-05	2005-06	2006-07	2007-08	2008-09
<b>1</b>	<b>Bond-XV</b>					
	Gross Loan opening	376.00	376.00	376.00	376.00	376.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	31.33
	Net Loan-Opening	376.00	376.00	376.00	376.00	344.67
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	31.33	31.33
	Net Loan-Closing	376.00	376.00	376.00	344.67	313.34
	Average Loan	376.00	376.00	376.00	360.34	329.01
	Rate of Interest	6.68%	6.68%	6.68%	6.68%	6.68%
	Interest	25.12	25.12	25.12	24.07	21.98
	Repayment Schedule	12 Annual instalments from 23-2-2008				
<b>2</b>	<b>Bond- XIII- Option-I</b>					
	Gross Loan opening	2700.00	2700.00	2700.00	2700.00	2700.00

	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	225.00	450.00
	Net Loan-Opening	2700.00	2700.00	2700.00	2475.00	2250.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	225.00	225.00	225.00
	Net Loan-Closing	2700.00	2700.00	2475.00	2250.00	2025.00
	Average Loan	2700.00	2700.00	2587.50	2362.50	2137.50
	Rate of Interest	8.63%	8.63%	8.63%	8.63%	8.63%
	Interest	233.01	233.01	223.30	203.88	184.47
	Repayment Schedule	12 Annual instalments from 31-7-2006				
<b>3</b>	<b>Bond- XVIII ( For ACE) (Date of Drawal 9.3.2006)</b>					
	Gross Loan opening	0.00	0.00	46.03	46.03	46.03
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	0.00	0.00	46.03	46.03	46.03
	Additions during the year	0.00	46.03	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	0.00	46.03	46.03	46.03	46.03
	Average Loan	0.00	23.02	46.03	46.03	46.03
	Rate of Interest	8.15%	8.15%	8.15%	8.15%	8.15%
	Interest	0.00	1.88	3.75	3.75	3.75
	Repayment Schedule	12 annual instalments from 9.3.2010				
	<b>Total Loan</b>					
	Gross Loan opening	3076.00	3076.00	3122.03	3122.03	3122.03
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	225.00	481.33
	Net Loan-Opening	3076.00	3076.00	3122.03	2897.03	2640.70
	Additions during the year	0.00	46.03	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	225.00	256.33	256.33
	Net Loan-Closing	3076.00	3122.03	2897.03	2640.70	2384.37
	Average Loan	3076.00	3099.02	3009.53	2768.87	2512.54
	Rate of Interest	8.39%	8.39%	8.38%	8.37%	8.37%
	<b>Interest</b>	258.13	260.00	252.17	231.71	210.20

**Annexure II**

Summary Sheet							
<b>Name of the Company:</b>				PGCIL			
<b>Name of the Element:</b>				40% FSC on 400 KV Gooty- Neelmangala Circuit-II at Gooty under FSC project in SR for the period from 1-5-2005 to 31-3-2009 including additional capitalization from DOCO to 31-3-2006.			
<b>Actual DOCO:</b>				1.5.2005			
<b>Petition No.:</b>				129/2006			
<b>Tariff setting Period:</b>				2004-09			
(Rs.in lakh)							
<b>1</b>	<b>Capital Cost of the Project as on DOCO</b>						<b>1382.59</b>
<b>2</b>	<b>Additional Capitalization</b>						<b>78.81</b>
			For the year 2005-06			78.81	
			Total			78.81	
<b>3</b>	<b>Total Capital Cost as on 1.4.2006(1+2)</b>						<b>1461.40</b>
<b>4</b>	<b>Means of Finance :</b>						
		<b>As on DOCO</b>				<b>As on 1.4.2006</b>	
	Debt	70.00%	967.80		70.00%	1022.97	
	Equity	30.00%	414.79		30.00%	438.43	
	Total	100.00%	1382.59		100.00%	1461.40	
<b>5</b>	<b>Gross Loan:</b>						
			As on DOCO			967.80	
			Notional Loan corresponding to ACE during 2005-06			55.17	
			As on 1.4.2006			1022.97	
<b>6</b>	<b>Cumulative Repayment upto 31.3.2009 :</b>						<b>251.51</b>
			Up to DOCO			0.00	
			From DOCO to 31.3.2009			251.51	
			Total			251.51	
<b>7</b>	<b>Balance Loan to be repaid beyond 31.03.2009 :</b>						<b>771.46</b>
<b>8</b>	<b>Depreciation recovered upto 31.03.09 :</b>						<b>251.51</b>
				<b>Dep</b>	<b>AAD</b>	<b>Total</b>	
			From DOCO to 31.3.2009	204.76	46.75	251.51	
			Total			251.51	
<b>9</b>	<b>Balance Depreciation to be recovered beyond 31.3.2009 :</b>						<b>1063.75</b>
			<b>Capital cost for the purpose of Depreciation</b>			<b>1382.59</b>	
			<b>ACE during 2005-06</b>			<b>78.81</b>	
			<b>Capital cost as 1.4.2006</b>			<b>1461.40</b>	
			<b>Less: Land Cost</b>			<b>0.00</b>	
						<b>1461.40</b>	
			<b>90% of Capital Cost as above</b>			<b>1315.26</b>	
			<b>Cum. Depreciation to be recovered up to 31.3.2009</b>			<b>251.51</b>	
			<b>Balance Depreciation to be recovered beyond 31.3.2009</b>			<b>1063.75</b>	

<b>Name of the Company:</b>		<b>PGCIL</b>				
<b>Name of the Element:</b>		<b>Series Compensation on both the circuits of 400 KV Nagarjunasagar-Cuddapah line and 400 KV S/C Gooty-Neelmangala line</b>				
<b>Actual DOCO:</b>		<b>1.11.2004</b>				
<b>Petition No.:</b>		<b>129/2006</b>				
<b>Tariff setting Period:</b>		<b>2004-09</b>				
						(Rs.in lakh)
<b>1</b>	<b>Capital Cost of the Project as on DOCO</b>					<b>3941.63</b>
<b>2</b>	<b>Additional Capitalization</b>					<b>105.92</b>
		<b>2a</b>	For the year 2004-05		10.19	
		<b>2b</b>	For the year 2005-06		95.73	
			Total		105.92	
<b>Total Capital Cost as on 1.4.2005(1+2a)</b>						<b>3951.82</b>
<b>3</b>	<b>Total Capital Cost as on 1.4.2006(1+2)</b>					<b>4047.55</b>
<b>4</b>	<b>Means of Finance :</b>					
		<b>As on DOCO</b>		<b>As on 1.4.2005</b>		<b>As on 1.4.2006</b>
	Debt	76.84%	3028.68	76.82%	3035.81	76.66% 3102.82
	Equity	23.16%	912.95	23.18%	916.01	23.34% 944.73
	Total	100.00%	3941.63	100.00%	3951.82	100.00% 4047.55
<b>5</b>	<b>Gross Loan:</b>					
				As on DOCO		3028.68
				Notional Loan corresponding to ACE during 2004-05		7.13
				As on 1.4.2005		3035.81
				Notional Loan corresponding to ACE during 2005-06		67.01
				As on 1.4.2006		3102.82
<b>6</b>	<b>Cumulative Repayment up to 31.3.2009 :</b>					<b>888.30</b>
				Up to DOCO		0.00
				From DOCO to 31.3.2009		888.30
				Total		888.30
<b>7</b>	<b>Balance Loan to be repaid beyond 31.3.2009 :</b>					<b>2214.52</b>
<b>8</b>	<b>Depreciation recovered up to 31.3.2009 :</b>					<b>888.30</b>
					<b>Dep</b>	<b>AAD</b>
				From DOCO to 31.3.2009	640.32	247.98
				Total		888.30
<b>9</b>	<b>Balance Depreciation to be recovered beyond 31.3.2009 :</b>					<b>2754.49</b>
				<b>Capital cost for the purpose of Depreciation</b>		<b>3941.63</b>
				<b>ACE during 2004-05</b>		<b>10.19</b>
				<b>ACE during 2005-06</b>		<b>95.73</b>
				<b>Capital cost as 1.4.2006</b>		<b>4047.55</b>
				<b>Less: Land Cost</b>		<b>0.00</b>
						<b>4047.55</b>
				<b>90% of Capital Cost as above</b>		<b>3642.80</b>
				<b>Cum. Depreciation to be recovered up to 31.3.2009</b>		<b>888.30</b>
				<b>Balance Depreciation to be recovered beyond 31.3.2009</b>		<b>2754.49</b>