

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Coram**

1. **Shri Bhanu Bhushan, Member**
2. **Shri R. Krishnamoorthy, Member**

**Petition No. 7/2002**

**In the matter of**

Approval of tariff for Central Transmission Project A.C. Line System in Southern Region and for the period 1.4.2001 to 31.3.2004.

**And in the matter of**

**Petition No. 9/2002**

Approval of tariff in respect of 400 KV D/C Ramagundum-Chandarpur Transmission System in Southern and Western Region for the period from 1.4.2001 to 31.3.2004

**And in the matter of**

**Petition No. 26/2002**

Approval of tariff in respect of 400 kV Ramagundam Transmission System, including ICT at Khammam and Reactor at Gazuwaka under CTP Augmentation in Southern Region for the period 1.4.2001 to 31.3.2004.

**And in the matter of**

**Petition No. 40/2002**

Approval of tariff in respect of 400 kV D/C Kaiga-Sirsi Transmission Line along with associated bays in Southern Region for the period 1.4.2001 to 31.3.2004.

**And in the matter of**

**Petition No. 41/2002**

Approval of tariff in respect of for additional 315 MVA, 400/200 KV Station in Southern Region from 1.4.01 to 31.3.04

**And in the matter of**

**Petition No. 51/2002**

Approval of transmission tariff in respect of 400 kV Jeypore-Gazuwaka Transmission Line along with associated bays 500 MW HVDC back-to-back

station at Gazuwaka between Southern Region and Eastern Region for the period 1.4.2001 to 31.3.2004.

**And in the matter of**

**Petition No. 52/2002**

Approval of tariff in respect of Kayamkulam Transmission System in Southern Region for the period 1.4.2001 to 31.3.2004.

**And in the matter of**

**Petition No. 53/2002**

Approval of tariff in respect of one 315 MVA 400/230 kV Auto Transformer at Hyderabad and one 50 MVAR Reactor at Cuddapah in Southern Region for the period from 1.4.2001 to 31.3.2004.

**And in the matter of**

Power Grid Corporation of India Ltd., Gurgaon

**.... 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 Department, Govt. of Pondicherry, Pondicherry

**.....Respondents**

### **ORDER**

In these petitions, the petitioner, Power Grid Corporation of India Limited, had sought approval of tariff in respect of its various transmission assets in Southern Region for the period from 1.4.2001 to 31.3.2004, based on the Central Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations 2001 (hereinafter referred to as "the 2001 regulations"). On completion of pleadings and after hearing the parties, final tariff in respect of these assets was awarded by different orders. The details of capital cost, equity considered at the time of award of tariff and the summary of the tariff awarded in each case are given in the annexures I to VIII attached.

2. Tamil Nadu Electricity Board (TNEB) filed Appeal No. 135/2005 in the Appellate Tribunal for Electricity against order dated 30.6.2006 of the Commission in Petition No 40/2002, vide which while fixing transmission tariff in respect of 400 kV D/C Kaiga-Sirsi transmission line along with associated bays for the period 1.4.2001 to 31.3.2004, the methodology similar to that adopted in respect of the Transmission System was followed. TNEB had, *inter alia*, questioned the methodology of bifurcation of FERV into debt and equity for the purpose of tariff determination. This appeal, as also some other linked appeals were disposed of by the Appellate Tribunal through a common judgment dated 4.10.2006. The Tribunal vide its judgment dated 4.10.2006 held as under:

“16. According to Explanation 1 to clause 4.4 (c), the premium raised by the Transmission Utility while issuing share capital and investment of internal resources created out of free reserve of the existing utility, if any, for the funding of the project, shall also be reckoned as paid up capital for the purpose of computing the return on equity subject to fulfillment of certain conditions. Explanation also makes no provision for increasing the equity beyond 50% of the book value of the transmission system. Once the fixed cost has been agreed to be financed in a certain ratio of debt and equity, the equity can be affected by FERV only if the equity is in foreign exchange. The provision of FERV as a pass through has been kept to ensure that any liability or gain, if any, arising on account of any variation in foreign exchange rates (whether debt or equity) is passed on to the beneficiary. In case there is no FERV liability or gain, as the case may be, there will not be any FERV adjustment. In the instant case the additional liability arising on account of FERV shall have an impact only on the debt liability and not equity capital. In this view of the matter, we hold that FERV adjustment is to be made in respect of debt liability and not in respect of the equity. Accordingly, we hold that the CERC is only to make adjustment in respect of debt liability and not in respect of the equity.

17. In view of the aforesaid discussion, the appeal is partly allowed to the extent indicated above. The Central Electricity Regulatory Commission shall re-calculate the effect of FERV on the debt liability.”

3. The above decision was reiterated by the Appellate Tribunal in its judgment dated 22.12.2006 in Appeal No 161 Of 2006 (M.P. State Electricity Board Vs. Power grid Corporation of India and Others) which related to

transmission tariff for Vindhyachal Stage - I Additional Transmission System in Western Region for the period 1.4.2001 to 31.3.2004.

4. The ruling of the Appellate Tribunal, involving interpretation of the notification dated 16.12.1997 of Ministry of Power, is considered to be judgment in *rem* and thereby has universal application in all the cases of similar nature. Accordingly, it has been decided to apply the ratio of the judgment in all similar cases and re-calculate the tariff in accordance with the judgment of the Tribunal.

5. In terms of judgment dated 4.10.2006 of the Appellate Tribunal in Appeal No 135 of 2005 and other related appeals, addition of notional equity on account of FERV is not to be considered for computation of return on equity. As a consequence, the entire amount of FERV shall form part of loan.

6. The NEEPCO filed Appeal No. 159 of 2005 before the Appellate Tribunal for Electricity which was disposed of vide judgment dated 31.10.2007. The Appellate Tribunal vide the above judgment held, *inter alia*, that interest on loan capital should be determined based on normative debt repayment formula.

7. While calculating interest on loan, refinancing of various loans with the loans carrying cheaper and fixed rate of interest has been considered from the date of refinancing. However, in the tariff orders for the tariff period 2004-09 pertaining to tariff petitions under consideration, it has been mentioned that benefits of refinancing of loans shall be passed on by the petitioner. If the same has already been passed on to the beneficiaries, the same shall be mutually adjusted and collected along with the tariff as approved by the Commission in the

instant orders. The petitioner shall also intimate the Commission about final adjustment.

8. .Based on the above decision, the tariff for the period 1.4.2001 to 31.3.2004 has been recalculated. The revised calculations are also incorporated in the annexures attached separately for each petition. It is to be noted that there is no change in the O & M component of the tariff because this was allowed on normative basis for per km line length and per bay. O & M charges already approved, therefore, hold good. All other components of tariff have been recalculated.

9. In the light of the forgoing, the revised transmission charges have also been summarized in the annexures.

10. It is brought out that but for revision of debt and equity in line with the Appellate Tribunal's judgments dated 4.10.2006 and 31.10.2007, generally, the methodology considered for re-computation of the transmission charges is the same as originally considered. However, where any loan has been re-financed, such refinanced loan has been considered for computation of interest on loan, since the general principle is that reimbursement of interest on loan cannot be a source of income. The position has been suitably incorporated in the appropriate Annexure, where applicable.

11. The petitioner shall adjust the entire excess amount collected by it against the future bills within six months, from the date of this order.

12. We also make it clear that as the revision of tariff has arisen consequent to the directions of the Appellate Tribunal, and not any commission or omission on the part of the petitioner, it will not incur any liability towards payment of interest on the grounds of excess recovery.

13. The revision of tariff allowed is subject to decision of the Hon`ble Supreme Court in the appeals filed by the petitioner against the Appellate Tribunal's judgment dated 4.10.2006.

**Sd/-**  
**(R KRISHNAMOORTHY)**  
**MEMBRER**  
New Delhi dated the 8<sup>th</sup> February 2008

**sd/-**  
**(BHANU BHUSHAN)**  
**MEMBRER**

## Annexure-I

1. Petition No. 7/2002
2. Subject: Approval of tariff for Central Transmission Project A.C. Line System in Southern Region and for the period 1.4.2001 to 31.3.2004.
3. Date of order of approval of tariff: 30.6.2003
4. **Original tariff**
  - (a) Summary of the tariff awarded

(Rs. in lakh)

<b>Transmission Tariff</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Interest on Loan	56.26	13.85	0.00
Interest on Working Capital	117.59	120.76	116.78
Depreciation	781.81	781.81	465.55
Advance against Depreciation	90.56	90.56	0.00
Return on Equity	1674.95	1674.95	1674.95
O & M Expenses	936.16	992.33	1051.87
<b>Total</b>	<b>3657.33</b>	<b>3674.27</b>	<b>3309.15</b>

- (b) Computation of capital cost

(Rs. in lakh)

Capital Expenditure up to 31.3.2001	26435.00
FERV as on 31.3.2001 on account of foreign loan liability due to capitalization	1630.86
Capital Expenditure up to 31.3.2001 including FERV	28065.86
Additional Capital Expenditure after 31.3.2001	0.00
Capital Expenditure considered for determination of Tariff	<b>28065.86</b>

- (c) Computation of equity

(Rs. in lakh)

Equity up to 31.3.2001	9653.00
Notional equity arising out of FERV	815.43
Total Equity	1046843

## 5. **Revised tariff computations**

- (a) Equity and return on equity

(Rs. in lakh)

	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Equity	9653.00	9653.00	9653.00
Return on equity up to 31.3.2001	<b>1544.48</b>	<b>1544.48</b>	<b>1544.48</b>

## (b) Interest on notional loan

(Rs. in lakh)

<b>Interest on Loan</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Gross Loan –Opening	11283.86	11283.86	11283.86
Cumulative Repayment up to Previous Year	6143.49	7781.46	11283.86
Net Loan-Opening	5140.36	3502.40	0.00
Repayment during the year	1637.96	3502.40	0.00
Net Loan-Closing	3502.40	0.00	0.00
Average Loan	4321.38	1751.20	0.00
Rate of interest	1.55%	0.94%	0.00%
<b>Interest</b>	<b>66.87</b>	<b>16.47</b>	<b>0.00</b>

## (c) Depreciation

(Rs. in lakh)

		<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Depreciable value	25259.27			
Balance useful life of the asset		24.00	23.00	22.00
Remaining depreciable value		11986.78	11046.46	10106.13
Depreciation		<b>781.81</b>	<b>781.81</b>	<b>459.37</b>

## (d) Revised calculations of Advance Against Depreciation

(Rs. in lakh)

<b>Advance Against Depreciation</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
1/12th of Gross Loan(s)	940.32	940.32	940.32
Scheduled Repayment of the Loan(s)	1637.96	3502.40	0.00
Minimum of the above	940.32	940.32	0.00
Depreciation during the year	781.81	781.81	459.37
<b>Advance Against Depreciation</b>	<b>158.52</b>	<b>158.52</b>	<b>0.00</b>

## (e) Interest on Working Capital

(Rs. in lakh)

<b>Working Capital</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Maintenance Spares	334.93	355.02	376.32
O & M expenses	78.01	82.69	87.66
Receivables	600.73	602.20	528.31
Total	1013.67	1039.91	992.28
Rate of Interest	11.50%	11.50%	11.50%
Interest	<b>116.57</b>	<b>119.59</b>	<b>114.11</b>



(f) Revised Annual Transmission charges

(Rs. in lakh)

<b>Transmission Tariff</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Interest on Loan	66.87	16.47	0.00
Interest on Working Capital	116.57	119.59	114.11
Depreciation	781.81	781.81	459.37
Advance against Depreciation	158.52	158.52	0.00
Return on Equity	1544.48	1544.48	1544.48
O & M Expenses	936.16	992.33	1051.87
<b>Total</b>	<b>3604.40</b>	<b>3613.19</b>	<b>3169.83</b>

## Annexure-II

1. Petition No. 9/2002
2. Subject: Approval of tariff in respect of 400 KV D/C Ramagundum-Chandarpur Transmission System in Southern and Western Region for the period from 1.4.2001 to 31.3.2004
3. Date of order of approval of tariff: 30.6.2003
4. **Original tariff**
  - (a) Summary of the tariff awarded

(Rs. in lakh)

<b>Transmission Tariff</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Interest on Loan	11.08	2.73	0.00
Interest on Working Capital	23.79	24.49	23.92
Depreciation	139.92	139.92	88.92
Advance against Depreciation	22.00	22.00	0.00
Return on Equity	310.89	310.89	310.89
O & M Expenses	245.52	260.25	275.86
<b>Total</b>	<b>753.20</b>	<b>760.80#</b>	<b>699.59</b>

# It was wrongly mentioned in order dated 30.6.2003. It should be Rs. 760.28 lakh.

- (b) Computation of capital cost

(Rs. in lakh)

Capital Expenditure up to 31.3.2001	4847.00
FERV as on 31.3.2001 on account of foreign loan liability due to capitalization	299.15
Capital Expenditure up to 31.3.2001	5146.15
Additional Capital Expenditure after 31.3.2001	0.00
<b>Total Capital Expenditure</b>	<b>5146.15</b>

- (c) Computation of equity

(Rs. in lakh)

Equity up to 31.3.2001	1793.50
Notional equity arising out of FERV	149.58
<b>Total Equity</b>	<b>1943.08</b>

5. **Revised tariff computation**

- (a) Equity and return on equity

(Rs. in lakh)

	2001-02	2002-03	2003-04
Equity	1793.50	1793.50	1793.50
Return on equity up to 31.3.2001	<b>286.96</b>	<b>286.96</b>	<b>286.96</b>

(b) Interest on notional loan

(Rs. in lakh)

<b>Interest on Loan</b>	2001-02	2002-03	2003-04
Gross Loan –Opening	2092.65	2092.65	2092.65
Cumulative Repayment up to Previous Year	1091.54	1410.54	2092.65
Net Loan-Opening	1001.11	682.11	0.00
Repayment during the year	319.00	682.11	0.00
Net Loan-Closing	682.11	0.00	0.00
Average Loan	841.61	341.05	0.00
Rate of interest	1.55%	0.94%	0.00%
<b>Interest</b>	<b>13.02</b>	<b>3.21</b>	<b>0.00</b>

(c) Depreciation

Rs. in lakh)

<b>Depreciation</b>		2001-02	2002-03	2003-04
Depreciable value	4631.54			
Balance useful life of the asset		24.00	23.00	22.00
Remaining Depreciable value		2279.99	2105.60	1931.22
Depreciation		<b>139.92</b>	<b>139.92</b>	<b>87.78</b>

(d) Advance Against Depreciation

(Rs. in lakh)

<b>Advance Against Depreciation</b>	2001-02	2002-03	2003-04
1/12th of Gross Loan(s)	174.39	174.39	174.39
Scheduled Repayment of the Loan(s)	319.00	682.11	0.00
Minimum of the above	174.39	174.39	0.00
Depreciation during the year	139.92	139.92	87.78
<b>Advance Against Depreciation</b>	<b>34.47</b>	<b>34.47</b>	<b>0.00</b>

(e) Revised Interest on Working Capital

(Rs. in lakh)

<b>Working Capital</b>	2001-02	2002-03	2003-04
Maintenance Spares	60.90	64.55	68.42
O & M expenses	20.46	21.69	22.99
Receivables	123.92	124.85	112.34
Total	205.27	211.08	203.75
Rate of Interest	11.50%	11.50%	11.50%
Interest	<b>23.61</b>	<b>24.27</b>	<b>23.43</b>

(f) Revised Annual Transmission charges

(Rs. in lakh)

<b>Transmission Tariff</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Interest on Loan	13.02	3.21	0.00
Interest on Working Capital	23.61	24.27	23.43
Depreciation	139.92	139.92	87.78
Advance against Depreciation	34.47	34.47	0.00
Return on Equity	286.96	286.96	286.96
O & M Expenses	245.52	260.25	275.86
<b>Total</b>	<b>743.49</b>	<b>749.08</b>	<b>674.04</b>

## Annexure-III

1. Petition No.26/2002
2. Subject: Approval of tariff in respect of 400 kV Ramagundam Transmission System, including ICT at Khammam and Reactor at Gazuwaka under CTP Augmentation in Southern Region for the period 1.4.2001 to 31.3.2004
3. Date of order of approval of tariff: 23.10.2003
4. **Original tariff**

- (a) Summary of the tariff awarded

(Rs. in lakh)

<b>Transmission Tariff</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Interest on Loan	121.52	107.08	91.95
Interest on Working Capital	163.48	169.90	175.28
Depreciation	1045.49	1045.49	1045.49
Advance against Depreciation	0.00	35.81	0.00
Return on Equity	2076.09	2076.09	2076.09
O & M Expenses	1689.85	1791.24	1898.72
<b>Total</b>	<b>5096.43</b>	<b>5225.62</b>	<b>5287.53</b>

- (b) Computation of capital cost

(Rs. in lakh)

Capital Expenditure up to 31.3.2001	35444.02
FERV as on 31.3.2001 on account of foreign loan liability due to capitalization	2511.27
Capital Expenditure up to 31.3.2001	37955.29
Additional Capital Expenditure after 31.3.2001	0.00
Capital Expenditure considered for determination of Tariff	37955.29

- (c) Computation of equity

(Rs. in lakh)

Equity allowed by 31.3.2001	11719.94
Notional equity arising out of FERV.	1255.63
<b>Total Equity</b>	<b>12975.57</b>

5. **Revised tariff computation**

(a) Equity and return on equity

(Rs. in lakh)

	2001-02	2002-03	2003-04
Equity	11719.94	11719.94	11719.94
Return on equity up to 31.3.2001	<b>1875.19</b>	<b>1875.19</b>	<b>1875.19</b>

(b) Interest on notional loan

(Rs. in lakh)

<b>Interest on Loan</b>	2001-02	2002-03	2003-04
Gross Loan –Opening	14231.21	14231.21	14231.21
Cumulative Repayment up to Previous Year	8123.77	9178.47	10676.83
Net Loan-Opening	6107.44	5052.73	3554.38
Repayment during the year	1054.70	1498.36	703.63
Net Loan-Closing	5052.73	3554.38	2850.74
Average Loan	5580.09	4303.56	3202.56
Rate of interest	2.7413%	3.1322%	3.6143%
<b>Interest</b>	<b>152.97</b>	<b>134.79</b>	<b>115.75</b>

(c) Advance Against Depreciation

(Rs. in lakh)

<b>Advance Against Depreciation</b>	2001-02	2002-03	2003-04
1/12th of Gross Loan(s)	1185.93	1185.93	1185.93
Scheduled Repayment of the Loan(s)	1054.70	1498.36	703.63
Minimum of the above	1054.70	1185.93	703.63
Depreciation during the year	1045.49	1045.49	1045.49
<b>Advance Against Depreciation</b>	<b>9.22</b>	<b>140.45</b>	<b>0.00</b>

(d) Interest on Working Capital

(Rs. in lakh)

<b>Working Capital</b>	2001-02	2002-03	2003-04
Maintenance Spares	431.34	457.23	484.66
O & M expenses	140.82	149.27	158.23
Receivables	822.18	859.29	851.16
Total	1394.34	1465.78	1494.05
Rate of Interest	11.50%	11.50%	11.50%
<b>Interest</b>	<b>160.35</b>	<b>168.57</b>	<b>171.82</b>

(d) Revised Annual Transmission charges

(Rs. in lakh)

<b>Transmission Tariff</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Interest on Loan	152.97	134.79	115.75
Interest on Working Capital	160.35	168.57	171.82
Depreciation	1045.49	1045.49	1045.49
Advance against Depreciation	9.22	140.45	0.00
Return on Equity	1875.19	1875.19	1875.19
O & M Expenses	1689.85	1791.24	1898.72
<b>Total</b>	<b>4933.06</b>	<b>5155.73</b>	<b>5106.96</b>

## Annexure-IV

1. Petition No. 40/2002
2. Subject: Approval of tariff in respect of 400 kV D/C Kaiga-Sirsi Transmission Line along with associated bays in Southern Region for the period 1.4.2001 to 31.3.2004.
3. Date of order of approval of tariff: 30.6.2003.
4. **Original tariff**

(a) Summary of the tariff awarded

(Rs. in lakh)

<b>Transmission Tariff</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Interest on Loan	196.54	62.81	58.64
Interest on Working Capital	25.81	21.51	22.00
Depreciation	151.12	151.12	151.12
Advance against Depreciation	114.21	0.00	0.00
Return on Equity	399.82	399.82	399.82
O & M Expenses	61.58	65.27	69.19
<b>Total</b>	<b>949.09</b>	<b>700.53</b>	<b>700.77</b>

(b) Computation of capital cost

(Rs. in lakh)

Capital Expenditure up to 31.3.2001	5668.66
FERV as on 31.3.2001 on account of foreign loan liability due to capitalization	14.18
Capital Expenditure up to 31.03.2001	5682.84
Additional Capital Expenditure after 31.03.2001	0.00
<b>Total Capital Expenditure</b>	<b>5682.84</b>

(c) Computation of equity

(Rs. in lakh)

Equity up to 31.3.2001	2492.66
Notional equity arising out of FERV	6.24
<b>Total Equity</b>	<b>2498.90</b>

5. **Revised tariff computation**

(a) Equity and return on equity



(Rs. in lakh)

	2001-02	2002-03	2003-04
Equity	2492.66	2492.66	2492.66
Return on equity up to 31.3.2001	<b>398.83</b>	<b>398.83</b>	<b>398.83</b>

## (b) Interest on notional loan

(Rs. in lakh)

<b>Interest on Loan</b>	2001-02	2002-03	2003-04
Gross Loan –Opening	3190.18	3190.18	3190.18
Cumulative Repayment up to Previous Year	1200.00	2499.00	2515.10
Net Loan-Opening	1990.18	691.18	675.08
Repayment during the year	1299.00	16.10	69.60
Net Loan-Closing	691.18	675.08	605.48
<b>Interest</b>	<b>196.93</b>	<b>63.20</b>	<b>59.04</b>

## (c) Advance Against Depreciation

(Rs. in lakh)

<b>Advance Against Depreciation</b>	2001-02	2002-03	2003-04
1/12th of Gross Loan(s)	265.85	265.85	265.85
Scheduled Repayment of the Loan(s)	1299.00	16.10	69.60
Minimum of the above	265.85	16.10	69.60
Depreciation during the year	151.12	151.12	151.12
<b>Advance Against Depreciation</b>	<b>114.73</b>	<b>0.00</b>	<b>0.00</b>

## (e) Interest on Working Capital

(Rs. in lakh)

<b>Working Capital</b>	2001-02	2002-03	2003-04
Maintenance Spares	61.16	64.83	68.72
O & M expenses	5.13	5.44	5.77
Receivables	158.17	116.65	116.69
Total	224.46	186.92	191.18
Rate of Interest	11.50%	11.50%	11.50%
Interest	<b>25.81</b>	<b>21.50</b>	<b>21.99</b>

## (f) Revised Annual Transmission charges

(Rs. in lakh)

<b>Transmission Tariff</b>	2001-02	2002-03	2003-04
Interest on Loan	196.93	63.20	59.04
Interest on Working Capital	25.81	21.50	21.99
Depreciation	151.12	151.12	151.12
Advance against Depreciation	114.73	0.00	0.00
Return on Equity	398.83	398.83	398.83
O & M Expenses	61.58	65.27	69.19
<b>Total</b>	<b>949.00</b>	<b>699.91</b>	<b>700.16</b>

**Annexure V**

1. Petition No. 41/2002
2. Subject: Approval of tariff in respect of 315 MVA ICT-III along with associated bay equipment at Nagajunsagar sub-station in Southern Region for the period 1.4.2001 to 31.3.2004
3. Date of order of approval of tariff: 25.5.2003
4. **Original tariff**
  - (a) Summary of the tariff awarded

(Rs. in lakh)

<b>Transmission Tariff</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Interest on Loan	25.26	25.26	25.26
Interest on Working Capital	3.17	3.23	3.29
Depreciation	27.62	27.62	27.62
Advance against Depreciation	0.00	0.00	0.00
Return on Equity	58.72	58.72	58.72
O&M Expenses	16.67	17.68	18.74
<b>Total</b>	<b>131.44</b>	<b>132.50</b>	<b>133.62</b>

- (b) Computation of capital cost

(Rs. in lakh)

Capital Expenditure up to 31.3.2001	737.98
FERV as on 31.3.2001 on account of foreign loan liability due to capitalization	29.26
Additional Capital Expenditure after 31.3.2001	0
Capital Expenditure considered for determination of Tariff	<b>767.24</b>

- (c) Computation of equity

(Rs. in lakh)

Equity up to 31.3.2001	352.98
Notional equity arising out of FERV	14.00
<b>Total Equity</b>	<b>366.98</b>

5. **Revised tariff computation**

- (a) Revised calculations of equity and return on equity

(Rs. in lakh)

	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Equity	352.98	352.98	352.98
Return on equity up to 31.3.2001	56.48	56.48	56.48

## (b) Interest on notional loan

(Rs. in lakh)

<b>Interest on Loan</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Gross Loan –Opening	414.26	414.26	414.26
Cumulative Repayment up to Previous Year	0.00	0.00	0.00
Net Loan-Opening	414.26	414.26	414.26
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	414.26	414.26	414.26
<b>Interest</b>	<b>26.14</b>	<b>26.14</b>	<b>26.14</b>

## (c) Interest on Working Capital

(Rs. in lakh)

<b>Working Capital</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Maintenance Spares	4.24	4.50	4.77
O & M expenses	1.39	1.47	1.56
Receivables	21.68	21.85	22.04
Total	27.31	27.82	28.37
Rate of Interest	11.50%	11.50%	11.50%
Interest	<b>3.14</b>	<b>3.20</b>	<b>3.26</b>

## (d) Revised Annual Transmission Charges

(Rs. in lakh)

<b>Transmission Tariff</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Interest on Loan	26.14	26.14	26.14
Interest on Working Capital	3.14	3.20	3.26
Depreciation	27.62	27.62	27.62
Advance against Depreciation	0.00	0.00	0.00
Return on Equity	56.48	56.48	56.48
O & M Expenses	16.68	17.68	18.74
<b>Total</b>	<b>130.05</b>	<b>131.11</b>	<b>132.24</b>

## Annexure- VI

1. Petition No. 51/2002
2. Subject: Approval of tariff in respect of 400 kV Jeypore-Gazuwaka Transmission Line along with associated bays 500 MW HVDC back-to-back station at Gazuwaka between Southern Region and Eastern Region for the period 1.4.2001 to 31.3.2004.
3. Date of order of approval of tariff: 10.9.2004.
4. **Original tariff**

(a) Summary of the tariff awarded

(Rs. in lakh)

<b>Transmission Tariff</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Interest on Loan	3998.10	3203.86	2865.54
Interest on Working Capital	281.90	246.79	270.48
Depreciation	2012.70	2012.70	2012.70
Advance against Depreciation	2442.32	1173.85	2442.32
Return on Equity	1536.65	1536.65	1536.65
O & M Expenses	571.68	605.98	642.34
<b>Total</b>	<b>10843.35</b>	<b>8779.83</b>	<b>9770.04</b>

(b) Computation of capital cost

(Rs. in lakh)

Capital Expenditure up to 31.3.2001	62967.53
FERV as on 31.3.2001 on account of foreign loan liability due to capitalization	96.81
Capital Expenditure up to 31.03.2001	63064.34
Additional Capital Expenditure after 31.03.2001	0.00
<b>Total Capital Expenditure</b>	<b>63064.34</b>

(c) Computation of equity

(Rs. in lakh)

Equity up to 31.3.2001	9589.33
Notional equity arising out of FERV	14.74
<b>Total Equity</b>	<b>9604.07</b>

5. **Revised tariff computation**

(a) Equity and return on equity

(Rs. in lakh)

	2001-02	2002-03	2003-04
Equity	9589.33	9589.33	9589.33
Return on equity up to 31.3.2001	<b>1534.29</b>	<b>1534.29</b>	<b>1534.29</b>

## (b) Interest on notional loan

Rs. in lakh)

<b>Interest on Loan</b>	2001-02	2002-03	2003-04
Gross Loan –Opening	53475.01	53475.01	53475.01
Cumulative Repayment up to Previous Year	8470.61	16888.51	20064.93
Net Loan-Opening	45004.40	36586.50	33410.08
Repayment during the year	8417.90	3176.42	4761.26
Net Loan-Closing	36586.50	33410.08	28648.82
<b>Interest</b>	<b>3999.62</b>	<b>3170.28</b>	<b>2795.18</b>

Note: For computing interest on loan, refinancing of SBI-II loan with Bond XVIII, Option II has been considered. This has caused further reduction in interest on loan.

## (c) Advance Against Depreciation

(Rs. in lakh)

<b>Advance Against Depreciation</b>	2001-02	2002-03	2003-04
1/12th of Gross Loan(s)	4456.25	4456.25	4456.25
Scheduled Repayment of the Loan(s)	8417.90	3176.42	4761.26
Minimum of the above	4456.25	3176.42	4456.25
Depreciation during the year	2012.70	2012.70	2012.70
<b>Advance Against Depreciation</b>	<b>2443.55</b>	<b>1163.72</b>	<b>2443.55</b>

## (d) Interest on Working Capital

(Rs. in lakh)

<b>Working Capital</b>	2001-02	2002-03	2003-04
Maintenance Spares	596.42	632.21	670.14
O & M expenses	47.64	50.50	53.53
Receivables	1807.29	1455.48	1616.19
Total	2451.36	2138.18	2339.86
Rate of Interest	11.50%	11.50%	11.50%
Interest	<b>281.91</b>	<b>245.89</b>	<b>269.08</b>

(d) Revised Annual Transmission charges

(Rs. in lakh)

<b>Transmission Tariff</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Interest on Loan	3999.62	3170.28	2795.18
Interest on Working Capital	281.91	245.89	269.08
Depreciation	2012.70	2012.70	2012.70
Advance against Depreciation	2443.55	1163.72	2443.55
Return on Equity	1534.29	1534.29	1534.29
O & M Expenses	571.68	605.98	642.34
<b>Total</b>	<b>10843.75</b>	<b>8732.86</b>	<b>9697.14</b>

## Annexure-VII

1. Petition No. 52 /2002
2. Subject: Approval of tariff in respect of Kayamkulam Transmission System in Southern Region for the period 1.4.2001 to 31.3.2004
3. Date of order of approval of tariff: 30.6.2003

### 4. Original tariff

#### (a) Summary of the tariff awarded

(Rs. in lakh)

	Kayamkulam-Pallom transmission line			Kayamkulam-Edmon transmission line		
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
Interest on Loan	590.87	571.24	542.21	798.87	754.01	687.67
Interest on Working Capital	27.52	27.58	33.59	44.24	44.78	53.24
Depreciation	241.39	241.39	241.39	387.62	387.62	387.62
Advance against Depreciation	0.00	0.00	312.32	55.30	81.96	532.69
Return on Equity	192.56	192.56	192.56	257.82	257.82	257.82
O & M Expenses	114.02	120.86	128.11	145.23	153.95	163.18
<b>Total</b>	<b>1166.36</b>	<b>1153.64</b>	<b>1450.19</b>	<b>1689.07</b>	<b>1680.13</b>	<b>2082.22</b>

#### (b) Computation of capital cost

(Rs. in lakh)

	Kayamkulam-Pallom transmission line	Kayamkulam-Edamon transmission line
Capital Expenditure up to 31.03.2001	7627.70	11989.63
FERV as on 31.3.2001 on account of foreign loan liability due to capitalization	220.34	665.50
Additional Capital Expenditure after 31.3.2001	0	0
Capital Expenditure considered for determination of Tariff	7848.04	12655.13

#### (c) Computation of equity

(Rs. in lakh)

	Kayamkulam-Pallom transmission line	Kayamkulam-Edamon transmission line
Equity allowed up to 31.3.2001	1169.70	1526.62
Notional equity arising out of FERV	-33.79	84.74
<b>Total Equity</b>	<b>1203.49</b>	<b>1611.36</b>

## 5. Revised tariff computation

### (a) Equity and return on equity

(Rs. in lakh)

	Kayamkulam-Pallom transmission line			Kayamkulam-Edamon transmission line		
	2001-2002	2002-2003	2001-2002	2002-2003	2001-2002	2002-2003
Equity	1169.70	1169.70	1169.70	1526.62	1526.62	1526.62
Return on Equity	187.15	187.15	187.15	244.26	244.26	244.26

### (b) Interest on notional loan

(Rs. in lakh)

	Kayamkulam-Pallom transmission line			Kayamkulam-Edmon transmission line		
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
<b>Interest on Loan</b>						
Gross Loan –Opening	6678.34	6678.34	6678.34	11128.50	11128.50	11128.50
Cumulative Repayment up to Previous Year	143.00	342.66	553.18	822.01	1270.14	1744.71
Net Loan-Opening	6535.34	6335.68	6125.16	10306.49	9858.36	9383.79
Repayment during the year	199.66	210.52	581.88	448.13	474.57	957.74
Net Loan-Closing	6335.68	6125.16	5543.28	9858.36	9383.79	8426.04
<b>Interest</b>	<b>592.86</b>	<b>567.68</b>	<b>532.84</b>	<b>803.85</b>	<b>745.93</b>	<b>665.93</b>

Note: For computing interest on loan, refinancing of SBI-II loan with Bond XIII, Option-II has been considered. This has caused further reduction in interest on loan.

### (c) Advance Against Depreciation

(Rs. In lakh)

	Kayamkulam-Pallom transmission line			Kayamkulam-Edmon transmission line		
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
1/12th of Gross Loan(s)	556.53	556.53	556.53	927.37	927.37	927.37
Scheduled Repayment of the Loan(s)	199.66	210.52	581.88	448.13	474.57	957.74
Minimum of the above	199.66	210.52	556.53	448.13	474.57	927.37
Depreciation during the year	241.39	241.39	241.39	387.62	387.62	387.62
Advance against Depreciation	0.00	0.00	315.14	60.51	86.95	539.75



## (d) Interest on Working Capital

(Rs. In lakh)

	Kayamkullam-Pallom transmission line			Kayamkullam-Edmon transmission line		
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
Maintenance Spares	35.37	37.49	39.74	91.06	96.53	102.32
O & M expenses	9.50	10.07	10.68	12.10	12.83	13.60
Receivables	193.81	190.75	239.67	280.94	277.19	342.24
Total	238.69	238.32	290.09	384.11	386.55	458.16
Rate of Interest	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%
Interest	27.45	27.41	33.36	44.17	44.45	52.69

## (e) Revised Annual Transmission Charges

(Rs. in lakh)

	Kayamkulam-Pallom transmission line			Kayamkulam-Edmon transmission line		
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
Interest on Loan	592.86	567.68	532.84	803.85	745.93	665.93
Interest on Working Capital	27.45	27.41	33.36	44.17	44.45	52.69
Depreciation	241.39	241.39	241.39	387.62	387.62	387.62
Advance against Depreciation	0.00	0.00	315.14	60.51	86.95	539.75
Return on Equity	187.15	187.15	187.15	244.26	244.26	244.26
O & M Expenses	114.02	120.86	128.11	145.23	153.95	163.18
Total	1162.87	1144.49	1438.00	1685.64	1663.16	2053.44

## Annexure VIII

1. Petition No. 53/2002
2. Subject: Approval of tariff in respect of one 315 MVA 400/230 kV Auto Transformer at Hyderabad and one 50 MVAR Reactor at Cuddapah in Southern Region for the period from 1.4.2001 to 31.3.2004.
3. Date of order of approval of tariff: 20.2.2004
4. **Original tariff**
  - (a) Summary of the tariff awarded

(Rs. in lakh)

	50 MVR Reactor			315 MVA Auto Transformer		
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
Interest on Loan	17.64	16.57	15.45	9.68	8.73	7.77
Interest on working capital	2.55	2.56	2.58	3.75	3.84	3.93
Depreciation	24.84	24.84	24.84	30.13	30.13	30.13
Advance Against Depreciation	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	60.91	60.91	60.91	62.36	62.36	62.36
O & M expenses	16.68	17.68	18.74	16.68	17.68	18.74
<b>Total</b>	<b>122.61</b>	<b>122.56</b>	<b>122.51</b>	<b>122.61</b>	<b>122.74</b>	<b>122.93</b>

- (b) Computation of capital cost

(Rs. in lakh)

	50 MVAR Reactor	315 MVA Auto Transformer
Capital Expenditure up to 31.3.2001	635.20	710.14
FERV as on 31.3.2001 on account of foreign loan liability due to capitalization	78.00	124.24
Capital Expenditure up to 31.3.2001	713.20	834.38
Additional Capital Expenditure after 31.3.2001	0.00	0.00
<b>Capital Expenditure considered for determination of Tariff</b>	<b>713.20</b>	<b>834.38</b>

- (c) Computation of equity

(Rs. in lakh)

	50 MVAR Reactor	315 MVA Auto Transformer
Equity as per the order dated 27.6.2002	339.03	327.63
Additional equity on account of FERV up to 31.3.2001	41.63	62.12
Total equity including FERV allowed up to 31.3.2001	380.66	389.75
Addition to equity on account of additional capitalization	0.00	0.00
<b>Total</b>	<b>380.66</b>	<b>389.75</b>

5. **Revised tariff computation**

(a) Equity and return on equity

(Rs. in lakh)

	50 MVAR Reactor			315 MVA Auto Transformer		
	2001-2002	2002-2003	2001-2002	2002-2003	2001-2002	2002-2003
Equity	339.03	339.03	339.03	327.63	327.63	327.63
Return on Equity	54.24	54.24	54.24	52.42	52.42	52.42

(b) Interest on notional loan

(Rs. in lakh)

Details of loan	50 MVR Reactor			315 MVA Auto Transformer		
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
Interest on Loan						
Gross Loan- Opening	374.17	374.17	374.17	451.87	451.87	451.87
Cumulative Repayment up to previous year	32.70	53.71	73.85	223.27	237.31	250.59
Net Loan-Opening	320.46	320.46	300.32	228.60	214.56	201.08
Repayment during the year	21.01	20.14	21.28	14.04	13.48	14.24
Net Loan-Closing	340.46	300.32	279.04	214.56	201.08	186.65
Average Loan	-	-	-	221.58	207.82	193.96
Rate of Interest	--	-	-	6.1100%	6.1100%	6.1100%
<b>Interest</b>	<b>20.09</b>	<b>18.87</b>	<b>17.59</b>	<b>13.54</b>	<b>12.70</b>	<b>11.85</b>

(c) Interest on Working Capital

(Rs. in lakh)

Interest on working capital	50 MVR Reactor			315 MVA Auto Transformer		
	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
Maintenance Spares	0.38	0.40	0.43	10.80	11.44	12.13
O & M expenses	1.39	1.47	1.56	1.39	1.47	1.56
Receivables	19.72	19.69	19.65	19.40	19.44	19.49
Total	21.49	21.56	21.64	31.39	32.36	33.19
Rate of interest	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%
<b>Interest</b>	<b>2.47</b>	<b>2.48</b>	<b>2.49</b>	<b>3.63</b>	<b>3.72</b>	<b>3.82</b>

## (d) Revised Annual Transmission charges

(Rs. in lakh)

<b>Transmission charges</b>	<b>50 MVR Reactor</b>			<b>315 MVA Auto Transformer</b>		
	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Interest on Loan	20.09	18.87	17.59	13.54	12.70	11.85
Interest on working capital	2.47	2.48	2.49	3.63	3.72	3.82
Depreciation	24.84	24.84	24.84	30.13	30.13	30.13
Advance Against Depreciation	0.00	0.00	0.00	0.00	0.00	0.00
Return on Equity	54.24	54.24	54.24	52.42	52.42	52.42
O & M expenses	16.68	17.68	18.74	16.68	17.68	18.74
<b>Total</b>	<b>118.32</b>	<b>118.11</b>	<b>117.90</b>	<b>116.40</b>	<b>116.65</b>	<b>116.96</b>