

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Coram**

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

**Petition No. 70/2004**

**In the matter of**

Approval of tariff for 400 kV Jeypore-Gazuwaka transmission line along with associated bays and 500 MW HVDC back to back station at Gazuwaka between Southern Region and Eastern Region for the period from 1.4.2004 to 31.3.2009.

**And in the matter of**

- |  |                         |
|--|-------------------------|
| Power Grid Corporation of India Ltd., Gurgaon                | <b>.... Petitioner</b>  |
| 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 |                         |
| 6. Bihar State Electricity Board, Patna                      |                         |
| 7. West Bengal State Electricity Board, Calcutta             |                         |
| 8. Grid Corporation of Orissa Ltd., Bhubaneshwar             |                         |
| 9. Demodar Valley Corporation, Kolkata                       |                         |
| 10. Power Deptt., Govt. Of Sikkim, Gangtok                   |                         |
| 11. Jharkand State Electricity Board, Ranchi                 | <b>.....Respondents</b> |

**ORDER**

In this petition, the petitioner, Power Grid Corporation of India Limited, had sought approval of tariff in respect of 400 kV Jeypore-Gazuwaka transmission line along with associated bays and 500 MW HVDC back to back station at Gazuwaka ( the transmission system) between Southern Region and Eastern 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”).

2. On completion of pleadings and after hearing the parties, final tariff in respect of the transmission system was awarded vide the Commission's order dated 16.2.2006 read with order dated 7.6.2006. While awarding tariff, the Commission adopted capital cost, loan, equity etc. considered for determination of tariff for the period 1.4.2001 to 31.3.2004. Also, FERV for the period up to 31.3.2004 was capitalized and apportioned between debt and equity in the same ratio as considered for the period 1.4.2001 to 31.3.2004. The details of capital cost, equity considered at the time of award of tariff and the summary of the tariff awarded are given hereunder.

(a) Computation of capital cost

(Rs. in lakh)

Capital Expenditure up to 31.3.2001	63064.34
Additional Capital Expenditure during 2001-04	103.85
FERV during 2001-04	2206.58
Capital Expenditure considered for determination of tariff for the period 2004-09	65374.77

(b) Computation of equity

(Rs. in lakh)

Equity up to 31.3.2001	9604.07
Notional equity arising out of additional capitalization during 2001-04	84.61
Notional equity arising out of FERV during 2001-04	1797.67
Total Equity	11486.35

(c) Computation of interest on loan

(Rs. in lakh)

Details of loan	Up to 31.3.2004	2004-05	2005-06	2006-07	2007-08	2008-09
<b>Interest on Loan</b>						
Gross loan as per order dated 18.7.2003 and 10.9.2004	53460.27					
Addition due to additional capitalisation	19.24					
Addition due to FERV	408.91					
Gross Normative Loan	53888.42	53888.42	53888.42	53888.42	53888.42	53888.42
Cumulative Repayment up to Previous Year		24981.09	30048.26	35164.78	40335.69	44089.33
Net Loan-Opening		28907.34	23840.16	18723.64	13552.73	9799.10
Repayment during the year		5067.18	5116.52	5170.91	3753.63	2085.46
Net Loan-Closing		23840.16	18723.64	13552.73	9799.10	7713.64

Average Loan		26373.75	21281.90	16138.19	11675.91	8756.37
Weighted Average Rate of Interest on Loan		7.5201%	7.6409%	7.8386%	8.0229%	8.0246%
<b>Interest</b>		1983.34	1626.12	1265.01	936.75	702.66

(d) Summary of the tariff awarded:

(Rs. in lakh)					
<b>Transmission Tariff</b>	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Depreciation	2085.46	2085.46	2085.46	2085.46	2085.46
Interest on Loan	1983.34	1626.12	1265.01	936.75	702.66
Return on Equity	1608.09	1608.09	1608.09	1608.09	1608.09
Advance against Depreciation	2981.71	3031.05	3085.45	1668.17	0.00
Interest on Working Capital	250.08	250.35	250.97	226.89	200.49
O & M Expenses	690.40	718.09	747.06	776.43	807.94
<b>Total</b>	<b>9599.09</b>	<b>9319.17</b>	<b>9042.03</b>	<b>7301.79</b>	<b>5404.64</b>

3. 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 various transmission assets was followed as regards apportioned of FERV into debt and equity. 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."

4. 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 forms part of loan.

5. 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.

6. Further, North Eastern Electric Power Corporation Ltd. (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. A similar methodology has been decided by the Appellate Tribunal in some of the appeals filed by NTPC Ltd.

7. The above rulings of the Appellate Tribunal on the question of apportionment of FERV and computation of interest on loan have been considered to be judgments in *rem* and thereby have been applied in all cases of similar nature to re-calculate the transmission charges.

8. Accordingly, the transmission charges for the period 1.4.2001 to 31.3.2004 for the transmission system have been revised by order dated 8.2.2008 in Petition No. 51/2002, as under:

(a) Equity as on 31.3.2004

	(Rs. in lakh)		
	2001-02	2002-03	2003-04
Equity	9589.33	9589.33	9589.33

(b) Commutation of interest on loan

	(Rs. in lakh)		
<b>Interest on Loan</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
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>

9. In the light of the foregoing discussion, the transmission charges for the transmission system forming subject-matter of the present order for the period 2004-09 are also being revised, and the revised transmission charges are summarized herein below. It is to be noted that there is no change in O & M components 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. Other components of tariff (except depreciation) including Advance Against Depreciation already allowed have been recalculated.

## (a) Equity and return on equity

(Rs. in lakh)

Equity up to 31.3.2001 as per order dated 8.2.2008	9589.33
Notional equity arising out of additional capitalization during 2001-04 (not considered in the order dated 8.2.2008)	103.85
Notional equity arising out of FERV during 2001-04	0.00
Total Equity	9693.18
Return on equity up to 31.3.2004 @ 14% of the above total for the period 2004-09	1357.05

## (b) Interest on notional loan

## (i)

(Rs. in lakh)

		As per order dated 10.9.2004 in petition 51/2002 for tariff period 2001-04	As per order dated 16.2.2006 read with order dated 7.6.2006 for tariff period 2004-09	As per order dated 8.2.2008 in petition 51/2002 for tariff period 2001-04	Revised for period 2004-09
(i)	Gross loan as on DOCO	53378.20		53378.20	
(ii)	Loan against FERV capitalised upto 31.3.2001	82.07		96.81	
(iii)	Gross Loan considered for Tariff period 2001-04	53460.27	53460.27	53475.01	53475.01
(iv)	Loan against FERV capitalised during 2001-04		408.91		2206.58
(v)	Loan against ACE capitalised during 2001-04		19.24		0.00
(vi)	Gross Loan considered for Tariff period 2004-09		53888.42		55681.59
	<b>Repayment</b>				
(vii)	Upto 31.3.2001	8470.61		8470.61	
(viii)	During 2001-04	16385.91		16355.58	
(ix)	Repayment considered for Tariff period 2001-04	24856.52	24856.52	24826.19	24826.19
(x)	Repayment against FERV capitalised during 2001-04		118.74		639.16
(xi)	Repayment against ACE capitalised during 2001-04		5.82		0.00
(xii)	Total repayment considered for Tariff period 2004-09		24981.09		25465.35
(xiii)	Outstanding as on 31.03.2004	28603.74	28907.34	28648.82	30216.24

## (ii)

(Rs. in lakh)

<b>Interest on Loan</b>	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Gross Loan as per order dated 8.2.2008					
Addition due to Additional Capitalisation for the period 2004-09					
Addition due to FERV for the period 2004-09					
Gross Normative Loan	55681.59	55681.59	55681.59	55681.59	55681.59
Cumulative Repayment up to Previous Year beginning from as per order dated 8.2.2008	25465.35	30761.96	36110.15	41515.20	45438.80
Net Loan-Opening	30216.24	24919.63	19571.44	14166.39	10242.80
Repayment during the year	5296.61	5348.19	5405.05	3923.59	2085.46
Net Loan-Closing	24919.63	19571.44	14166.39	10242.80	8157.33
Average Loan	27567.94	22245.53	16868.91	12204.59	9200.06
Rate of interest	7.5201%	7.6409%	7.8386%	8.0229%	8.0246%
<b>Interest</b>	<b>2073.15</b>	<b>1699.75</b>	<b>1322.29</b>	<b>979.17</b>	<b>738.27</b>

## (c) Advance Against Depreciation

(Rs. in lakh)

<b>Advance Against Depreciation</b>	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
1/10th of Gross Loan(s)	5568.16	5568.16	5568.16	5568.16	5568.16
Repayment of the Loan	5296.61	5348.19	5405.05	3923.59	2085.46
Minimum of the above	5296.61	5348.19	5405.05	3923.59	2085.46
Depreciation during the year	2085.46	2085.46	2085.46	2085.46	2085.46
(A) Difference	3211.15	3262.73	3319.58	1838.13	0.00
Cumulative Repayment of the Loan	30761.96	36110.15	41515.20	45438.80	47524.26
Cumulative Depreciation/ Advance against Depreciation	21034.00	26330.62	31678.81	37083.86	41007.45
(B) Difference	9727.96	9779.53	9836.39	8354.94	6516.81
Advance against Depreciation Minimum of (A) and (B)	<b>3211.15</b>	<b>3262.73</b>	<b>3319.58</b>	<b>1838.13</b>	<b>0.00</b>

## (d) Interest on Working Capital

(Rs. in lakh)

<b>Working Capital</b>	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Maintenance Spares	782.47	829.42	879.19	931.94	987.85
O & M expenses	57.53	59.84	62.26	64.70	67.33
Receivables	1611.41	1562.40	1513.85	1210.41	864.24
Total	2,451.42	2,451.66	2,455.29	2,207.05	1,919.42
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	<b>251.27</b>	<b>251.29</b>	<b>251.67</b>	<b>226.22</b>	<b>196.74</b>

## (e) Annual Transmission charges

(Rs. in lakh)

<b>Transmission Tariff</b>	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Depreciation	2085.46	2085.46	2085.46	2085.46	2085.46
Interest on Loan	2073.15	1699.75	1322.29	979.17	738.27
Return on Equity	1357.05	1357.05	1357.05	1357.05	1357.05
Advance against Depreciation	3211.15	3262.73	3319.58	1838.13	0.00
Interest on Working Capital	251.27	251.29	251.67	226.22	196.74
O & M Expenses	690.40	718.09	747.06	776.43	807.94
<b>Total</b>	<b>9668.48</b>	<b>9374.37</b>	<b>9083.11</b>	<b>7262.46</b>	<b>5185.46</b>

10. The petitioner shall adjust the balance amount recoverable/refundable, as the case may be, against the future bills within six months, from the date of this order.

11. 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, and

computation of interest on loan in accordance with the methodology decided by the Appellate Tribunal in the judgment dated 31.10.2007 *ibid* generally the methodology considered for re-computation of the transmission charges is the same as originally considered.

12. 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 9<sup>th</sup> April 2008

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