

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

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

In the matter of

Petition No. 67/2004

Approval of tariff in respect of Hathidah River Crossing section of 220 kV D/C Biharsharif-Begusarai transmission line in Eastern Region for the period from 1.4.2004 to 31.3.2009.

And in the matter of

Petition No.121/2004

Approval of tariff in respect of 400 kV D/C Malda-Bongaigaon transmission line in 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
Vs

.... Petitioner

1. Bihar State Electricity Board, Patna
2. West Bengal State Electricity Board, Kolkatta
3. Grid Corporation of Orissa Ltd., Bhubaneswar
4. Damodar Valley Corporation, Kolkatta
5. Power Department, Govt. of Sikkim , Gangtok
6. Jharkhand State Electricity Board, Ranchi

.....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 Eastern Region for the period from 1.4.2004 to 31.3.2009, based on the Central Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations 2004 (hereinafter referred to as "the 2004 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 and II attached. 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.

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 various transmission assets was followed as regards apportionment 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."

3. 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.

4. 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.

5. 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.

6. 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.

7. Accordingly, the transmission charges for the period 1.4.2001 to 31.3.2004 for the transmission assets covered in the present order have been revised by order dated 5.1.2008. The revised transmission charges allowed for the said period are also incorporated in the Annexures I and II attached, separately for each asset.

8. In the light of the forgoing discussion, the transmission charges for the transmission assets forming subject-matter of the present order for the period 2004-2009 are also being revised, and the revised transmission charges are summarized in the Annexures. It is to be noted that there is no change in 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. Other components of tariff (except depreciation), including Advance Against Depreciation, wherever applicable, already allowed have been recalculated.

9. 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.

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, and computation of interest on loan in accordance with the methodology decided by the Appellate Tribunal in the order dated 31.10.2007 *ibid.* generally the

methodology considered for re-computation of the transmission charges is the same as originally considered.

11. 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 16th April 2008

sd/-
(BHANU BHUSHAN)
MEMBRER

Annexure-I

1. Petition No.67/2004
2. Subject: Approval of tariff in respect of Hathidah River Crossing section of 220 k V D/C Biharsharif-Begusarai transmission line in Eastern Region for the period from 1.4.2004 to 31.3.2009.
3. Date of order of approval of tariff: 10.2.2006
4. **Original order**

(a) Computation of capital cost

(Rs. in lakh)

Capital expenditure up to 31.3.2001	1066.56
Additional capitalization during 2001-04	0.00
FERV during 2001-04	(-)10.18
Capital expenditure considered for determination of tariff for the period 2004-09	1056.39

(b) Computation of equity

(Rs. in lakh)

Equity up to 31.3.2001	204.75
Notional equity arising out of additional capitalization during 2001-04	0.00
Notional equity arising out of FERV during 2001-04	0.00
Total equity	204.75

(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
Interest on Loan						
Gross Loan as per last Order	861.81					
Addition due to Additional Capitalisation	0.00					
Addition due to FERV	(-)10.18					
Gross Normative Loan	851.63	851.63	851.63	851.63	851.63	851.63
Cumulative Repayment up to Previous Year		80.16	173.06	265.95	358.85	451.74
Net Loan-Opening		771.47	678.57	585.68	492.78	399.89
Repayment during the year		92.90	92.90	92.90	92.90	71.92
Net Loan-Closing		678.57	585.68	492.78	399.89	327.97
Average Loan		725.02	632.13	539.23	446.33	363.93
Weighted Average Rate of Interest on Loan		9.1222%	8.3122%	7.8523%	7.4823%	7.1117%
Interest		66.14	52.54	42.34	33.40	25.88

(d) Summary of the transmission charges awarded

(Rs. in lakh)

Transmission Tariff	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	27.15	27.15	27.15	27.15	27.15
Interest on Loan	66.14	52.54	42.34	33.40	25.88
Return on Equity	28.67	28.67	28.67	28.67	28.67
Advance against Depreciation	14.40	58.01	58.01	58.01	44.77
Interest on Working Capital	3.73	4.34	4.24	4.18	3.92
O & M Expenses	1.18	1.23	1.28	1.33	1.38
Total	141.27	171.94	161.69	152.73	131.76

5. Revised tariff for the period 2001-04

(a) Date of order: 5.1.2008 in petition No. 63/2002

(b) Equity as on 31.3.2004:

(Rs. in lakh)

	2001-02	2002-03	2003-04
Equity	204.80	204.80	204.80

(c) Computation of interest on loan:

(Rs. in lakh)

Interest on Loan	2001-02	2002-03	2003-04
Gross Loan –Opening	861.76	861.76	861.76
Cumulative Repayment up to Previous Year	0.00	0.00	0.00
Net Loan-Opening	861.76	861.76	861.76
Repayment during the year	0.00	0.00	81.12
Net Loan-Closing	861.76	861.76	780.64
Interest	95.57	95.57	89.69

6. Revised tariff computations for the period 2004-09

(a) Equity and return on equity

(Rs. in lakh)

Equity up to 31.3.2004 as per order dated 5.1.2008	204.80
Notional equity arising out of additional capitalization during 2001-04	0.00
Notional equity arising out of FERV during 2001-04	0.00
Total equity	204.80
Return on equity @ 14% for the period 2004-09	28.67

(b) Interest on loan:

(i) Computation of outstanding loan

(Rs. in lakh)

		As per order dated 30.6.2003 in petition 63/2002 for tariff period 2001-04	As per order dated 10.2.2006. in petition 67/2004 for tariff period 2004-09	As per order dated 5.1.2008 in petition 63/2002 for tariff period 2001-04	Revised calculation for the period 2004-09
(i)	Gross loan as on DOCO	862.00		862.00	
(ii)	Loan against FERV capitalised upto 31.3.2001	-0.19		-0.24	
(iii)	Gross Loan considered for Tariff period 2001-04	861.81	861.81	861.76	861.76
(iv)	Loan against FERV capitalised during 2001-04		-10.18		-10.18
(v)	Loan against ACE capitalised during 2001-04		0.00		0.00
(vi)	Gross Loan considered for Tariff period 2004-09		851.63		851.59
	Repayment				
(vii)	Upto 31.3.2001	0.00		0.00	
(viii)	During 2001-04	81.12		81.12	
(ix)	Repayment considered for tariff period 2001-04	81.12	81.12	81.12	81.12
(x)	Repayment against FERV capitalised during 2001-04		-0.96		-0.96
(xi)	Repayment against ACE capitalised during 2001-04		0.00		0.00
(xii)	Total repayment considered for tariff period 2004-09		80.16		80.16
(xiii)	Outstanding as on 1 st April of the year	780.69	771.47	780.64	771.42

(ii) Computation of interest on loan

(Rs. in lakh)

Interest on Loan		2004-05	2005-06	2006-07	2007-08	2008-09
Gross loan as per order dated 5.1.2008	861.76					
Addition due to additional capitalization for the period 2001-04	0.00					
Addition due to FERV for the period 2001-04	(-10.18)					
Gross Normative Loan	851.59	851.59	851.59	851.59	851.59	851.59
Cumulative repayment up to previous year	80.16	173.05	265.94	358.83	451.72	
Net loan-Opening	771.42	678.53	585.64	492.75	399.86	
Repayment during the year		92.89	92.89	92.89	92.89	71.92
Net loan-Closing		678.53	585.64	492.75	399.86	327.94
Average loan		724.98	632.09	539.20	446.31	363.90
Rate of interest		9.1222%	8.3122%	7.8522%	7.4823%	7.1116%
Interest		66.13	52.54	42.34	33.39	25.88

(c) Advance Against Deprecation

No change

(d) Interest on Working Capital

(Rs. in lakh)

Working Capital	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	12.77	13.54	14.35	15.21	16.12
O & M expenses	0.10	0.10	0.11	0.11	0.12
Receivables	23.54	28.66	26.95	25.46	21.96
Total	36.41	42.29	41.40	40.77	38.20
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	3.73	4.34	4.24	4.18	3.92

(e) Revised Annual Transmission charges

(Rs. in lakh)

Transmission Tariff	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	27.15	27.15	27.15	27.15	27.15
Interest on Loan	66.13	52.54	42.34	33.39	25.88
Return on Equity	28.67	28.67	28.67	28.67	28.67
Advance against Depreciation	14.40	58.01	58.01	58.01	44.77
Interest on Working Capital	3.73	4.34	4.24	4.18	3.92
O & M Expenses	1.18	1.23	1.28	1.33	1.38
Total	141.27	171.94	161.69	152.73	131.77

Annexure-II

1. Petition No. 121/2004
2. Subject: Approval of tariff in respect of 400 kV D/C Malda-Bongaigaon transmission line in Eastern Region for the period from 1.4.2004 to 31.3.2009.
3. Date of order of approval of tariff: 14.1.2006.
4. **Original order**

(a) Computation of capital cost

(Rs. in lakh)

Capital expenditure up to 31.3.2001	29856.58
Additional capitalization during 2001-04	0.00
FERV during 2001-04	(-) 97.93
Capital expenditure considered for determination of tariff for the period 2004-09	29758.64

(b) Computation of equity

(Rs. in lakh)

Equity up to 31.3.2001	9977.35
Notional equity arising out of additional capitalization during 2001-04	0.00
Notional equity arising out of FERV during 2001-04	(-)97.93
Total equity	9879.41

(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
Gross loan as per order dated 30.6.2003	19879.24					
Addition due to additional capitalisation	0.00					
Addition due to FERV	0.00					
Gross Normative Loan	19879.24	19879.24	19879.24	19879.24	19879.24	19879.24
Cumulative Repayment up to Previous Year		3375.98	5328.09	7280.21	9232.32	11184.43
Net Loan-Opening		16503.26	14551.15	12599.04	10646.93	8694.82
Repayment during the year		1952.11	1952.11	1952.11	1952.11	1835.09
Net Loan-Closing		14551.15	12599.04	10646.93	8694.82	6859.72
Average Loan		15527.21	13575.09	11622.98	9670.87	7777.27
Weighted Average Rate of Interest on Loan		6.97%	6.87%	6.74%	6.55%	6.32%
Interest		1082.24	932.61	782.97	633.34	491.68

(d) Summary of the transmission charges awarded

(Rs. in lakh)

Transmission Tariff	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	802.48	802.48	802.48	802.48	802.48
Interest on Loan	1082.24	932.61	782.97	633.34	491.68
Return on Equity	1383.12	1383.12	1383.12	1383.12	1383.12
Advance against Depreciation	0.00	584.57	1149.63	1149.63	1032.61
Interest on Working Capital	104.00	114.23	124.29	124.65	123.34
O & M Expenses	308.61	320.90	334.22	346.84	361.42
Total	3680.45	4137.90	4576.71	4440.06	4194.65

5. Revised tariff for the period 2001-04

(a) Date of order: 5.1.2008 in Petition No. 71/2002

(b) Equity as on 31.3.2004

(Rs. in lakh)

	2001-02	2002-03	2003-04
Equity	9939.40	9939.40	9939.40

(c) Computation of interest on loan

(Rs. in lakh)

Interest on Loan	2001-02	2002-03	2003-04
Gross Loan –Opening	19917.19	19917.19	19917.19
Cumulative Repayment up to Previous Year	259.89	1553.21	2045.20
Net Loan-Opening	19657.31	18363.98	17871.99
Repayment during the year	1293.32	491.99	1330.78
Net Loan-Closing	18363.98	17871.99	16541.21
Interest	2468.33	2268.85	1646.40

6. Revised tariff computations for the period 2004-09

(a) Equity and return on equity

(Rs. in lakh)

Equity up to 31.3.2004 as per order dated 5.1.2008	9939.40
Notional equity arising out of additional capitalization during 2001-04	0.00
Notional equity arising out of FERV during 2001-04	0.00
Total equity	9939.40
Return on equity @ 14% for the period 2004-09	1391.52

(b) Interest on loan:

(i) Computation of outstanding loan

(Rs. in lakh)

		As per the order dated 30.6.2003 in petition 71/2002 for tariff period 2001-04	As per the order dated 13.4.2004 in petition 71/2002 subsequently revised for tariff period 2004-09	As per the order dated 14.1.2006 in petition 121/2004 for tariff period 2001-04	As per the order dated 5.1.2008 in petition 71/2002 for tariff period 2004-09	Revised calculation for the period 2004-09
(i)	Gross loan as on DOCO	19803.63	19803.63		19803.63	
(ii)	Loan against FERV capitalised upto 31.3.2001	75.61	75.61		113.56	
(iii)	Gross Loan considered for Tariff period 2001-04	19879.24	19879.24	19879.24	19917.19	19917.19
(iv)	Loan against FERV capitalised during 2001-04			0.00		-97.93
(v)	Loan against ACE capitalised during 2001-04			0.00		0.00
(vi)	Gross Loan considered for Tariff period 2004-09			19879.24		19819.26
	Repayment					
(vii)	Upto 31.3.2001	259.88	259.88		259.88	
(viii)	During 2001-04	3811.74	3116.10		3116.10	
(ix)	Repayment considered for tariff period 2001-04	4071.62	3375.98	3375.98	3375.98	3375.98
(x)	Repayment against FERV capitalised during 2001-04			0.00		-1.70
(xi)	Repayment against ACE capitalised during 2001-04			0.00		0.00
(xii)	Total repayment considered for tariff period 2004-09			3375.98		3374.29
(xiii)	Outstanding as on 1 st April of the year	15807.62	16503.26	16503.26	16541.21	16444.97

(ii) Computation of interest on loan

(Rs. in lakh)

Interest on loan		2004-05	2005-06	2006-07	2007-08	2008-09
Gross loan as per order dated 5.1.2008	19917.19					
Addition due to additional capitalization for the period 2001-04	0.00					
Addition due to FERV for the period 2001-04	-97.93					
Gross Normative Loan	19819.26	19819.26	19819.26	19819.26	19819.26	19819.26
Cumulative repayment up to previous year		3374.29	5319.50	7264.72	9209.94	11155.15
Net Loan-Opening		16444.97	14499.76	12554.54	10609.32	8664.11
Repayment during the year		1945.22	1945.22	1945.22	1945.22	1828.61
Net Loan-Closing		14499.76	12554.54	10609.32	8664.11	6835.50
Average Loan		15472.36	13527.15	11581.93	9636.71	7749.80
Rate of interest		6.9700%	6.8700%	6.7364%	6.5489%	6.3220%
Interest		1078.42	929.31	780.21	631.10	489.94

(c) Advance Against Depreciation

(Rs. in lakh)

Advance against Depreciation	2004-05	2005-06	2006-07	2007-08	2008-09
1/10th of Gross Loan(s)	1981.93	1981.93	1981.93	1981.93	1981.93
Repayment of the loan	1945.22	1945.22	1945.22	1945.22	1828.61
Minimum of the above	1945.22	1945.22	1945.22	1945.22	1828.61
Depreciation during the year	802.48	802.48	802.48	802.48	802.48
(A) Difference	1142.74	1142.74	1142.74	1142.74	1026.13
Cumulative Repayment of the loan	5319.50	7264.72	9209.94	11155.15	12983.76
Cumulative Depreciation/ Advance against Depreciation	5893.16	6695.64	8067.20	10012.42	11957.63
(B) Difference	-573.65	569.08	1142.74	1142.74	1026.13
Advance against Depreciation Minimum of (A) and (B)	0.00	569.08	1142.74	1142.74	1026.13

(d) Interest on Working Capital

(Rs. in lakh)

Working Capital	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	375.50	398.03	421.91	447.23	474.06
O & M expenses	25.72	26.74	27.85	28.90	30.12
Receivables	614.18	687.89	762.57	739.89	699.14
Total	1,015.40	1,112.66	1,212.33	1,216.01	1,203.32
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	104.08	114.05	124.26	124.64	123.34

(e) Revised Annual Transmission charges

(Rs. in lakh)

Transmission Tariff	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	802.48	802.48	802.48	802.48	802.48
Interest on Loan	1078.42	929.31	780.21	631.10	489.94
Return on Equity	1391.52	1391.52	1391.52	1391.52	1391.52
Advance against Depreciation	0.00	569.08	1142.74	1142.74	1026.13
Interest on Working Capital	104.08	114.05	124.26	124.64	123.34
O & M Expenses	308.61	320.90	334.22	346.84	361.42
Total	3685.11	4127.34	4575.42	4439.31	4194.83