

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

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

Petition No. 126/2004

In the matter of

Approval of tariff in respect of 400 kV transmission system associated with Farakka (I &II) STPS in Eastern Region for the period from 1.4.2004 to 31.3.2009

Petition No. 127/2004

And in the matter of

Approval of tariff in respect of 400 kV Kahalgaon transmission system 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

.... Petitioner

Vs

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

.... Respondents

ORDER

In these petitions, the petitioner, Power Grid Corporation of India Ltd had sought approval for 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 and 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 the transmission systems for the period 1.4.2004 to 31.3.2009 was awarded. The details of the orders, capital

cost considered in the orders and final tariff awarded by the Commission are given in Annexures I to II of this order.

2. Tamil Nadu Electricity Board (TNEB) filed Appeal No. 135/2005 in the Appellate Tribunal for Electricity (the Tribunal) 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 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 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 decision of the 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 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. Further through this order, we are revising the tariff in the process of implementation of the Tribunal judgment dated 16.5.2007 in Appeal No. 121 of 2005. Briefly the background of the case is as under:

- (i) The petitioner on its establishment, took-over the transmission network from the central generating companies like NTPC, NHPC, NLC and NEEPCO with effect from 1.4.1992 on book value.

- (ii) Prior to setting up of the Commission, the tariff for the various transmission systems owned by the petitioner was fixed by the Central Government in Ministry of Power, based on advice from the Central Electricity Authority.

7. For the purpose of tariff determination, Ministry of Power considered the capital cost on the following basis:

- (i) Capital cost as on 31.3.1992 was notionally divided into debt and equity in the ratio of 50:50.
- (ii) Cumulative depreciation accrued till 31.3.1992 was deducted from capital cost as at (a) above to arrive at Net Asset Value which was used for tariff purposes.
- (iii) Net asset value obtained at (ii) above, was divided notionally in to debt and equity in the ratio of 50:50. In other words both debt and equity as in (i) above were reduced equally by one-half of the cumulative depreciation mentioned in (ii) above.
- (iv) This approach was continued during 1.4.1992 to 31.3.1997, with equity getting depleted further by 50% of depreciation amount charged during this period.
- (v) The approach was discontinued after 31.3.1997, and there was no further depletion of equity thereafter.

8. When the Commission determined tariff, the capital cost evolved by Ministry of Power was taken as the basis.
9. Aggrieved by the above principle followed by the Commission, the petitioner made an application, being Petition No 26/2005 urging that in respect of all its assets, the depleted equity amounting to Rs. 64600 lakh through the application of the above methodology be restored.
10. The said application was dismissed vide the Commission's order dated 11.5.2005, whereupon, the petitioner filed Appeal No. 121 of 2005 before the Tribunal.
11. The above appeal was disposed of by the Tribunal vide its judgment dated 16.5.2007 with the following directions:

“CONCLUSION

33. Thus, we have no hesitation in holding that the aforesaid grave error committed by the Central Government as a regulator while determining tariff for the block year 1992-1997, requires to be rectified with effect from April 1, 2004.

34. In the light of the aforesaid discussion, the issues raised in Para 19 are determined and answered as follows:

ISSUE No.1: The regulator committed grave error in fixing equity while determining tariff for the block year 1992-1997 and 1997-2002.

ISSUE No.2: The appellant is entitled to the restoration of equity of Rs.664 Crore, with effect from April 1, 1992, for the purposes of accounting.

ISSUE No.3: Consequent to restoration of equity, tariff needs to be determined for the period commencing from April 1, 2004.

ISSUE No.4: The Order of the CERC is liable to be set aside.

ISSUE No.5: The CERC shall re-determine the transmission tariff for the period commencing from April 1, 2004.

35. In view of the aforesaid determination, the appeal is allowed. The order of the CERC is set aside and the matter is remitted to it (CERC) for re-determination of the tariff for the period commencing from April 1, 2004 in accordance with law and having regard to the observations made by us.

We make it clear that the appellant shall not be entitled to claim tariff difference from the period anterior to 01.04.2004. “

12. In pursuance of the above judgment of the Tribunal, the petitioner filed region-wise applications for revision of tariff for the period 2004-09 after restoration of equity. The project-wise details for revision of equity in respect of the transmission assets in the Eastern Region were filed in Petition No 41/2007.

13. Based on the above two judgments of the Tribunal, the transmission charges for the assets forming subject matter of the present order have been recalculated. The details of revised calculation of annual transmission tariff and annual transmission tariff in respect of transmission are also incorporated in the annexure I to II of this order.

14. Revision of the capital cost on the above basis has resulted in the revision of notional equity and loan as on 1.4.2004. This has consequently led to the revision of certain other elements of the transmission charges, except O&M expenses, which were allowed on normative basis in terms of the line length and number of bays, and therefore, remain unchanged. While re-calculating the transmission charges, the methodology considered is the same as considered while originally fixing these charges for the period 2004-09 except in case of interest on loan. While re-calculating interest on loan, outstanding loan as on

1.4.2004 has been re-worked out based on the judgment of the Appellate Tribunal for Electricity, in cases involving National Thermal Power Corporation, wherein the Appellate Tribunal decided to compute interest on loan based on normative repayment.

15. The petitioner shall recover the additional amount in the six equal monthly installments.

Sd/-

(R KRISHNAMOORTHY)
MEMBER
New Delhi, dated 7th February 2008

sd/-

(BHANU BHUSHAN)
MEMBER

Annexure - I

1. Petition No. 126/2004
2. Subject: Approval of tariff in respect of 400 kV transmission system associated with Farakka (I & II) STPS in Eastern Region for the period from 1.4.2004 to 31.3.2009
3. Date of order of approval of tariff: 5.1.2006 read with order dated 18.7.2006.

4. Original tariff

(a) Summary of the tariff awarded

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	917.54	917.54	917.54	917.54	539.02
Interest on Loan	78.36	50.06	21.75	3.80	0.00
Return on Equity	1838.13	1838.13	1838.13	1838.13	1838.13
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	125.55	129.20	133.11	137.38	135.65
O & M Expenses	827.39	860.45	895.73	930.16	968.67
Total	3786.96	3795.37	3806.25	3827.01	3481.47

(b) Computation of capital cost

(Rs. in lakh)

Cost approved in the order dated 5.1.2006, as on 1.4.2001	32313.96
Admitted capital cost as on 1.4.2004 for calculation of Debt and Equity	25841.96
Additional capitalization due to works from 1.4.2001 to 31.3.2004	0.00
Additional capitalization due to FERV 1.4.2001 to 31.3.2004	416.98
Total capital cost as on 1.4.2004 considered for calculation of return on equity	26581.94

(c) Computation of equity: Rs.13129.47 lakh in the debt – equity ratio of 50:50

5. Revised tariff claimed by the petitioner

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	614.72	614.72	614.72	614.72	614.72
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	2291.17	2291.17	2291.17	2291.17	2291.17
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	127.88	132.09	136.55	141.21	146.21
O & M Expenses	827.39	860.45	895.73	930.16	968.67
Total	3861.16	3898.43	3938.18	3977.26	4020.77

6. Revised tariff computations

(a) Capital cost

Cost approved in the order dated 5.1.2006, as on 1.4.2001	32313.96
Additional capitalization due to works from 1.4.2001 to 31.3.2004	0.00
Additional capitalization due to FERV from 1.4.2001 to 31.3.2004	416.98
Total capital cost as on 1.4.2004	32730.94

(b) Equity and return on equity:

Equity as per order dated 5.1.2006	Rs. 13129.47 lakh
Addition on account of restitution of equity	Rs. 3236.00 lakh
Reduction on account of FERV up to 31.3.2001 (i.e. 50% of Rs. 1712.96 lakh)	Rs. 856.48 lakh
Reduction on account of FERV during 2001-04 (i.e. 50% of Rs. 416.98 lakh)	Rs. 208.49 lakh
Net equity	Rs. 15300.50 lakh
Return on equity	Rs. 2142.07 lakh per annum

(c) 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 Notional loan	17013.46					
Addition due to additional capitalization	0.00					
Addition due to FERV	416.98					
Gross Normative Loan	17430.44	17430.44	17430.44	17430.44	17430.44	17430.44
Cumulative Repayment up to Previous Year		15473.55	16391.09	17308.63	17430.44	17430.44
Net Loan-Opening		1956.89	1039.35	121.81	0.00	0.00
Repayment during the year		917.54	917.54	121.81	0.00	0.00
Net Loan-Closing		1039.35	121.81	0.00	0.00	0.00
Average Loan		1498.12	580.58	60.91	0.00	0.00
Weighted Average Rate of Interest on Loan		3.0850%	3.0850%	3.0850%	3.0850%	3.0850%
Interest		46.22	17.91	1.88	0.00	0.00

(d) Depreciation

(Rs. in lakh)

Details of Depreciation		2004-05	2005-06	2006-07	2007-08	2008-09
Rate of Depreciation	2.8033%					
Depreciable Value	90%	28834.05	28834.05	28834.05	28834.05	28834.05
Balance Useful life of the asset		20	19	18	17	16
Remaining Depreciable Value		12167.74	11250.21	10332.67	9415.14	8861.30
Depreciation		917.54	917.54	917.54	553.83	553.83

(e) Interest on working capital

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	524.75	556.24	589.61	624.99	662.49
O & M expenses	68.95	71.70	74.64	77.51	80.72
Receivables	677.25	678.65	682.54	627.06	634.29
Total	1,270.95	1,306.59	1,346.80	1,329.56	1,377.50
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	130.27	133.93	138.05	136.28	141.19

(f) Revised annual transmission charges

(Rs.in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	917.54	917.54	917.54	553.83	553.83
Interest on Loan	46.22	17.91	1.88	0.00	0.00
Return on Equity	2142.07	2142.07	2142.07	2142.07	2142.07
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	130.27	133.93	138.05	136.28	141.19
O & M Expenses	827.39	860.45	895.73	930.16	968.67
Total	4063.49	4071.89	4095.26	3762.34	3805.77

Annexure II

1. Petition No.127/2004
2. Approval of tariff in respect of 400 kV Kahalgaon transmission system in Eastern Region for the period from 1.4.2004 to 31.3.2009.
3. Date of order of approval of tariff: 14.12.2005.
4. **Original tariff**
 - (a) Summary of the tariff awarded

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	341.91	341.91	341.91	341.91	341.91
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	1133.76	1133.76	1133.76	1133.76	1133.76
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	78.45	81.30	84.32	87.47	90.85
O & M Expenses	608.85	633.21	659.00	684.57	712.68
Total	2162.97	2190.18	2218.99	2247.72	2279.20

- (b) Computation of capital cost

(Rs. in lakh)

Cost approved in the order dated 14.12.2005, as on 1.4.2001	19666.55
Admitted capital cost as on 1.4.2004 for calculation of Debt and Equity	16140.11
Additional capitalization due to works from 1.4.2001 to 31.3.2004	0.00
Additional capitalization due to FERV 1.4.2001 to 31.3.2004	56.44
Total capital cost as on 1.4.2004 considered for calculation of return on equity	16196.56

- (c) Computation of equity: Rs.8098.29 lakh in the debt – equity ratio of 50:50

5. **Revised tariff claimed by the petitioner**

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	341.91	341.91	341.91	341.91	341.91
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	1376.66	1376.66	1376.66	1376.66	1376.66
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	82.67	85.52	88.54	91.70	95.07
O & M Expenses	608.85	633.21	659.00	684.57	712.68
Total	2410.09	2437.30	2466.11	2494.83	2526.32

6. Revised tariff computations

(a) Capital cost

Cost approved in the order dated 14.12.2005, as on 1.4.2001	19610.11
Additional capitalization due to works from 1.4.2001 to 31.3.2004	0.00
Additional capitalization due to FERV from 1.4.2001 to 31.3.2004	56.44
Total capital cost as on 1.4.2004	19999.55

(b) Equity and return on equity:

Equity as per order dated 14.12.2005	Rs. 8098.28 lakh
Addition on account of restitution of equity	Rs. 1735.00 lakh
Reduction on account of FERV up to 31.3.2001 (i.e. 50% of Rs. 163.11 lakh)	Rs. 81.56 lakh
Reduction on account of FERV during 2001-04 (i.e. 50% of Rs. 56.44 lakh)	Rs. 28.22 lakh
Net equity	Rs. 9723.50 lakh
Return on equity	Rs.1361.29 lakh per annum

(c) Interest on loan

Loan was repaid prior to 1.4.2004 and as such the petitioner has not claimed any interest on loan.

(d) Depreciation

(Rs. in lakh)

Details of Depreciation		2004-05	2005-06	2006-07	2007-08	2008-09
Rate of Depreciation	2.9163%					
Depreciable Value	90%	17458.71	17458.71	17458.71	17458.71	17458.71
Balance Useful life of the asset		22	21	20	19	18
Remaining Depreciable Value		7509.63	7168.28	6826.93	6485.59	6144.24
Depreciation		341.35	341.35	341.35	341.35	341.35

(e) Interest on working capital

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	354.10	375.35	397.87	421.74	447.04
O & M expenses	50.74	52.77	54.92	57.05	59.39
Receivables	398.98	403.51	408.32	413.10	418.35
Total	803.82	831.63	861.10	891.89	924.79
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	82.39	85.24	88.26	91.42	94.79

(f) Revised annual transmission charges

(Rs.in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	341.35	341.35	341.35	341.35	341.35
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	1361.29	1361.29	1361.29	1361.29	1361.29
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	82.39	85.24	88.26	91.42	94.79
O & M Expenses	608.85	633.21	659.00	684.57	712.68
Total	2393.88	2421.09	2449.90	2478.63	2510.11