

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

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

Petition No.112/2004

In the matter of

Approval of tariff in respect of transmission system associated with Gandhar Gas Power Station-I in Western Region for the period from 1.4.2004 to 31.3.2009.

Petition No. 114/2004

And in the matter of

Approval of tariff in respect of Kawas Transmission System in Western Region for the period from 1.4.2004 to 31.3.2009.

Petition No. 115/2004

And in the matter of

Approval of tariff in respect of Kakrapar Transmission System in Western 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. Madhya Pradesh State Electricity Board, Jabalpur
2. Maharashtra State Electricity Board, Mumbai
3. Gujarat Electricity Board, Vadodara
4. Electricity Department, Govt of Goa, Panaji, Goa
5. Electricity Department, Admn. of Dadra and Nagar Haveli, Silvassa
6. Chhattisgarh State Electricity Board, Raipur
7. Electricity Department, Admn. Of Daman & Diu, Daman**Respondents**

ORDER

In these petitions, the petitioner, Power Grid Corporation of India Ltd. had sought approval for tariff in respect of its above-named transmission systems in Western 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 various elements of the transmission systems for the period 1.4.2004 to 31.3.2009 was awarded by the Commission. The details of the orders, capital cost considered in these orders and final tariff awarded by the Commission are given in Annexures I to III of this order.

2. Through this order, we are revising the tariff in the process of implementation of the judgment of the Appellate Tribunal for Electricity (hereinafter referred to as “the Appellate Tribunal”) dated 16.5.2007 in Appeal No. 121 of 2005. Briefly, the background of the case is as under:

(a) 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.

(b) 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.

(c) 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 into 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 accruing till 31.3.1992 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.
- (d) When the Commission determined tariff for the various assets of the petitioner, following the approach adopted by Ministry of Power, 50% of the Net Fixed Asset as on 1.4.1997 was taken as the equity deployment as on 1.4.1997.
- (e) 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.

(f) 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 Appellate Tribunal.

(g) The above appeal was disposed of by the Appellate Tribunal vide its judgment dated 16.5.2006 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. “

(h) In pursuance of the above judgment of the Appellate 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 Western Region were filed in Petition No. 42/2007.

3. As a consequence of the judgment of the Appellate Tribunal, notional equity as on 1.4.2004 stands revised. This has consequently led to the revision of return on equity, interest on loan and interest on working capital. Restoration of equity does not have any bearing on any other component of tariff. Further, in case of Gandhar Gas Power Station-I, the outstanding loan as on 31.3.2004 has been changed due to the Appellate Tribunal's order for considering notional repayment during 2001-04 which results in the increase in interest on loan during 2004-09. In other two transmission systems, namely Kawas and Kakrapar transmission systems, petitioner had not claimed any interest on loan for the tariff period 2004-09 as the entire loan was repaid during 2001-02.

4. As regards the transmission system associated with Gandhar Gas Power Station-I, the transmission charges are being revised in respect of 220 kV Gandhar-Bharuch D/C transmission line and 400 kV Gandhar-Dehgam D/C transmission line, commissioned before 1.4.1997. The other two transmission systems forming part of this order were commissioned before 1.4.1997 and, therefore, the transmission charges applicable to them are also being revised.

5. Details of the calculation of the revised annual transmission charges in respect of the transmission assets considered in this order are given in Annexures I to III to this order.

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

Sd/-

(R KRISHNAMOORTHY)
MEMBER
New Delhi, dated the 14th March 2008

sd/-

(BHANU BHUSHAN)
MEMBER

Annexure- I

1. Petition No. 112/2004
2. Approval of tariff in respect of transmission system associated with Gandhar Gas Power Station-I in Western Region for the period from 1.4.2004 to 31.3.2009. [220 kV Gandhar-Bharuch D/C transmission line with associated bays and 400 kV Gandhar-Dehgam D/C transmission line with sub-station at Dehgam]
3. Date of order of approval of tariff: 14.2.2006.
4. **Original tariff**

(a) Summary of the tariff awarded

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	341.01	341.01	341.01	341.01	230.30
Interest on Loan	58.75	37.27	15.78	2.52	0.00
Return on Equity	770.46	770.46	770.46	770.46	770.46
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	47.67	48.79	50.00	51.43	51.24
O & M Expenses	274.02	284.99	296.58	308.11	320.74
Total	1491.91	1482.52	1473.84	1473.53	1372.74

(b) Summary of interest on working capital awarded

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	185.77	196.92	208.73	221.26	234.53
O & M expenses	22.84	23.75	24.72	25.68	26.73
Receivables	248.65	247.09	245.64	245.59	228.79
Total	465.04	476.00	487.83	501.79	499.88
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	47.67	48.79	50.00	51.43	51.24

(c) Computation of capital cost

(Rs. in lakh)

Capital cost approved in the order dated 14.2.2006, as on 1.4.2001	11744.66
Admitted capital cost as on 1.4.2001 for calculation of debt and equity	11006.63
Additional capitalization due to works from 1.4.2001 to 31.3.2004	00.00
Additional capitalization due to FERV from 1.4.2004 to 31.3.2004	00.00
Total capital cost as on 1.4.2004 considered for calculation of return on equity	11006.63

- (d) Computation of equity: Rs. 5503.32 lakh at 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	341.01	341.01	341.01	235.83	235.83
Interest on Loan	35.50	14.02	1.64	0.00	0.00
Return on Equity	822.12	822.12	822.12	822.12	822.12
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	47.35	48.42	49.74	49.49	51.21
O & M Expenses	274.02	284.99	296.58	308.11	320.74
Total	1520.01	1510.57	1511.10	1415.56	1429.90

6. **Revised tariff computations**

(a) Capital cost

(Rs. in lakh)

Capital cost approved in the order dated 14.2.2006 as on 1.4.2001	11744.66
Additional capitalization due to works from 1.4.2001 to 31.3.2004	00.00
Additional capitalization due to FERV from 1.4.2001 to 31.3.2004	00.00
Total capital cost as on 1.4.2004	11744.66

(b) Equity and return on equity:

Equity as per order dated 14.2.2006	Rs. 5503.32 lakh
Addition on account of restitution of equity	Rs. 369.01 lakh
Net equity (50% of capital cost)	Rs. 5872.33 lakh
Return on equity	Rs. 822.13 lakh per annum

(c) Interest on loan

(i) Repayment considered upto 31.3.2004 in the order dated 14.2.2006 is Rs. 4400.27 lakh. Revised repayment as on 31.3.2004 due to restitution of equity and considering notional loan repayment during 2001-04 works out as under:

Repayment up to 31.3.1997	Rs. 738.03 lakh
Repayment during 1997-2001	Rs. 2857.67 lakh

Repayment during 2001-04 Rs. 1027.54 lakh

Total repayment up to 31.3.2004 Rs. 4623.24 lakh

(ii) Gross loan figures have also changed from Rs. 5502.32 lakh to Rs. 5872.33 lakh due to restitution of equity;

(iii) Revised interest on loan for the tariff period 2004-09 work out as under:

(Rs. in lakh)

Interest on Loan		2004-05	2005-06	2006-07	2007-08	2008-09
Gross Notional Loan	5872.33					
Addition due to Additional Capitalization	0.00					
Addition due to FERV	0.00					
Gross Normative Loan	5872.33	5872.33	5872.33	5872.33	5872.33	5872.33
Cumulative Repayment upto Previous Year		4623.24	4964.25	5305.25	5646.26	5872.33
Net Loan-Opening		1249.09	908.08	567.08	226.07	0.00
Repayment during the year		341.01	341.01	341.01	226.07	0.00
Net Loan-Closing		908.08	567.08	226.07	0.00	0.00
Average Loan		1078.59	737.58	396.57	113.04	0.00
Weighted Average Rate of Interest on Loan		6.3000%	6.3000%	6.3000%	6.3000%	6.3000%
Interest		67.95	46.47	24.98	7.12	0.00

(d) Interest on working capital

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	185.77	196.92	208.73	221.26	234.53
Total Maintenance Spares(A+B)	193.55	205.17	217.48	230.53	244.36
O & M expenses	22.84	23.75	24.72	25.68	26.73
Receivables	258.97	257.41	255.96	255.13	237.55
Total	475.36	486.32	498.15	511.33	508.64
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	48.72	49.85	51.06	52.41	52.14

(e) Revised annual transmission charges

(Rs.in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	341.01	341.01	341.01	341.01	230.30
Interest on Loan	67.95	46.47	24.98	7.12	0.00
Return on Equity	822.13	822.13	822.13	822.13	822.13
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	48.72	49.85	51.06	52.41	52.14
O & M Expenses	274.02	284.99	296.58	308.11	320.74
Total	1553.83	1544.44	1535.76	1530.78	1425.30

Annexure- II

1. Petition No. 114/2004
2. Approval of tariff in respect of Kawas Transmission System in Western Region for the period from 1.4.2004 to 31.3.2009.
3. Date of order of approval of tariff: 26.10.2005
4. **Original tariff**
 - (a) Summary of the tariff awarded

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	57.14	57.14	57.14	57.14	57.14
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	174.76	174.76	174.76	174.76	174.76
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	15.58	16.14	16.74	17.36	18.02
O & M Expenses	244.54	254.32	264.68	274.95	286.24
Total	492.02	502.37	513.33	524.21	536.17

- (b) Computation of capital cost

(Rs. in lakh)

Capital cost approved in the order dated 26.10.2005, as on 1.4.2001	3139.72
Admitted capital cost as on 1.4.2001 for calculation of debt and equity	2496.63
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	0.00
Total capital cost as on 1.4.2004 considered for calculation of return on equity	2496.63

- (c) Computation of equity: Rs. 1248.31 lakh at 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	57.14	57.14	57.14	57.14	57.14
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	219.84	219.84	219.84	219.84	219.84
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	16.36	16.93	17.53	18.14	18.81
O & M Expenses	244.54	254.32	264.68	274.95	286.24
Total	537.88	548.23	559.19	570.08	582.04

6. Revised tariff computations

(a) Capital cost

(Rs. in lakh)

Capital cost approved in the order dated 26.10.2005, as on 1.4.2001	3139.72
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	0.00
Total capital cost as on 1.4.2004	3139.72

(b) Equity and return on equity:

Equity as per order dated 26.10.2005	Rs. 1258.31 lakh
Addition on account of restitution of equity	Rs. 311.55 lakh
Net equity (50% of the capital cost)	Rs. 1569.86 lakh
Return on equity	Rs. 219.78 lakh per annum

(c) Interest on working capital

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	49.60	52.58	55.73	59.08	62.62
O & M expenses	20.38	21.19	22.06	22.91	23.85
Receivables	89.64	91.36	93.19	95.00	96.99
Total	159.62	165.13	170.98	176.99	183.47
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	16.36	16.93	17.53	18.14	18.81

(d) Revised annual transmission charges

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	57.14	57.14	57.14	57.14	57.14
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	219.78	219.78	219.78	219.78	219.78
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	16.36	16.93	17.53	18.14	18.81
O & M Expenses	244.54	254.32	264.68	274.95	286.24
Total	537.82	548.17	559.13	570.01	581.97

Annexure- III

1. Petition No. 115/2004
2. Approval of tariff in respect of Kakrapar transmission system in Western Region for the period from 1.4.2004 to 31.3.2009.
3. Date of order of approval of tariff: 19.10.2005.
4. **Original tariff**

- (a) Summary of the tariff awarded

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	96.87	96.87	96.87	96.87	96.87
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	286.44	286.44	286.44	286.44	286.44
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	23.49	24.35	25.27	26.22	27.24
O & M Expenses	274.96	285.95	297.65	309.12	321.89
Total	681.76	693.61	706.23	718.65	732.44

- (b) Computation of capital cost

(Rs. in lakh)

Capital cost approved in the order dated 19.10.2005., as on 1.4.2001	4971.00
Admitted capital cost as on 1.4.2001 for calculation of debt and equity	4092.00
Additional capitalization due to works from 1.4.2001 to 31.3.2004	00.00
Additional capitalization due to FERV from 1.4.2001 to 31.3.2004	0.00
Total capital cost as on 1.4.2004 considered for calculation of return on equity	4092.00

- (c) Computation of equity: Rs. 2046.00 lakh at 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	96.87	96.87	96.87	96.87	96.87
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	348.04	348.04	348.04	348.04	348.04
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	24.56	25.42	26.34	27.29	28.31
O & M Expenses	274.96	285.95	297.65	309.12	321.89
Total	744.42	756.28	768.90	781.32	795.11

6. Revised tariff computations

(e) Capital cost

(Rs. in lakh)

Capital cost approved in the order dated 2.2.2006, as on 1.4.2001	4971.00
Additional capitalization due to works from 1.4.2001 to 31.3.2004	00.00
Additional capitalization due to FERV from 1.4.2001 to 31.3.2004	0.00
Total capital cost as on 1.4.2004	4971.00

(f) Equity and return on equity:

Equity as per order dated 19.10.2005	Rs. 2046.00 lakh
Addition on account of restitution of equity	Rs.439.50 lakh
Total equity (50% of the capital cost)	Rs. 2485.50 lakh
Return on equity	Rs. 347.97 lakh per annum

(g) Interest on working capital

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	92.58	98.14	104.03	110.27	116.89
O & M expenses	22.91	23.83	24.80	25.76	26.82
Receivables	124.06	126.03	128.14	130.21	132.51
Total	239.56	248.00	256.97	266.24	276.22
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	24.55	25.42	26.34	27.29	28.31

(h) Revised annual transmission charges

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	96.87	96.87	96.87	96.87	96.87
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	347.97	347.97	347.97	347.97	347.97
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	24.55	25.42	26.34	27.29	28.31
O & M Expenses	274.96	285.95	297.65	309.12	321.89
Total	744.35	756.21	768.83	781.25	795.04