

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram:

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

Petition No.99/2002

In the matter of

Approval of tariff in respect of Kawas Gas Power Station (656.2 MW) for the period 1.4.1998 to 31.3.2001.

And in the matter of

NTPC Limited.

.... **Petitioner**

Vs

1. Madhya Pradesh State Electricity Board, Jabalpur
2. Maharashtra State Electricity Distribution Co Ltd, Mumbai
3. Gujarat Urja Vikas Nigam Ltd, Vadodara
4. Chhattisgarh State Electricity Board, Raipur
5. Electricity Department, Govt. of Goa, Panaji
6. Electricity Department, Administration of Daman & Diu, Daman
7. Electricity Deptt., Admin. of Dadra and Nagar Haveli, Silvassa...**Respondents**

ORDER

The petitioner, NTPC Limited, had filed this petition for approval of tariff in respect of Kawas Gas Power Station (656.2 MW) (hereinafter referred to as “the generating station”) for the period from 1.4.1998 to 31.3.2001. On completion of pleadings and after hearing the parties, final tariff in respect of the generating station was awarded vide the Commission’s order dated 18.5.2004, based on Government of India, Ministry of Power notification dated 30.4.1994. The summary of the annual fixed charges awarded is given hereunder:

(Rs in lakh)

Particulars	1.4.1998 to 31.10.1998	1.11.1998 to 31.3.1999	1999-2000	2000-01
Interest on Loan	2503	2503	1389	341
Interest on Working Capital	1780	1888	1763	1680
Depreciation	10740	10740	11299	11001
Return on Equity	9120	12160	12304	12122
O & M Expenses	3086	3086	3395	3734
TOTAL	27229	30378	30150	28878

2. The petitioner filed an application, taken on the file of the Commission as Review Petition No 86/2004, to seek review of the above order. The application for review was admitted limited to the following two aspects, namely:

- (a) non-inclusion of stock of Naptha/NGL fuel in calculation of working capital, and
- (b) provision of heat rate of 3190 kCal/kWh in place of 3150 kCal/kWh, considered in the above order.

3. The application for review was disposed of vide order dated 23.3.2005. The heat rate of 3150 kCal/kWh was inadvertently specified in the Monthly Operating Pattern Adjustment (MOPA) for open cycle operation instead of 3190 kCal/kWh with NOx control. This error was corrected by substituting word “3150 kCal/kWh (without NOx control)” with “3190 kCal/kWh (with NOx control)” in MOPA adjustment. Besides, working capital was corrected as under, by including Naptha stock of Rs. 249 lakh:

(Rs in lakh)

	1.4.1998 to 31.10.1998	1.11.1998 to 31.3.1999	1999- 2000	2000- 2001
Fuel Cost (Gas)	2886	2886	2886	2886
Liquid fuel stock	249	249	249	249
O & M expenses	257	257	283	311
Spares	464	464	464	464
Receivables	10315	10840	10802	10590
Total Working Capital	14171	14696	14684	14500
Working Capital Margin (WCM)	2030	2030	2030	2030
Total Working Capital allowed	12141	12666	12654	12470
Rate of Interest	13.00%	13.00%	12.00%	11.50%
Interest on allowed Working Capital	1578	1647	1518	1434
Interest on WCM	112	112	113	113
Return on WCM	122	162	162	162
Total Interest on Working capital	1812	1921	1793	1709

4. Consequently, the annual fixed charges in respect of the generating station were revised as under:

Particulars	(Rs in lakh)			
	1.4.1998 to 31.10.1998	1.11.1998 to 31.3.1999	1999-2000	2000-01
Interest on Loan	2503	2503	1389	341
Interest on Working Capital	1812	1921	1793	1709
Depreciation	10740	10740	11299	11001
Return on Equity	9120	12160	12304	12122
O & M Expenses	3086	3086	3395	3734
TOTAL	27261	30410	30180	28907

5. The petitioner filed an appeal, Appeal No 96 of 2005 before the Appellate Tribunal for Electricity (hereinafter "the Tribunal"). The Tribunal disposed of the appeal vide its judgment dated 14.11.2006, holding as under:

"38. In view of the above, we allow the appeal and set aside the impugned order to the extent indicated above and direct as follows:

(a) The Central Commission shall adopt normative debt repayment methodology for working out the interest on loan liability for the period 01.04.1998 to 31.03.2001. The adjustment arising out of this be made in the future years.

(b) The effect of the increased working capital amount by Rs. 2.49 crores due to inclusion of liquid fuel (Naphtha/NGL/HSD) shall also be considered by the Central Commission for being passed to two other elements namely one month's revised "fuel expenses" and 'two months' receivables which are also determining factors for the working capital.

(c) The Central Commission shall recompute the O&M expenses if the balance sheet figure of the O&M expenses for Kawas GPS is different than Rs. 2806 lakhs for the year 1997-98. "

6. Accordingly, we proceed to revise the annual fixed charges in respect of the generating station for the period 1.4.1998 to 31.3.2001 in keeping with the above judgment of the Tribunal.

7. The Commission, vide its order dated 18.5.2004 had computed interest on loan as under:

	(Rs in lakh)		
	1998-1999	1999-2000	2000-2001
Gross loan-Opening	74070	77927	75867
Cumulative repayments of Loans up to previous year	47750	59077	69709
Net loan-Opening	26320	18851	6158
Increase/ Decrease due to FERV	2967	-2097	-255
Increase/ Decrease due to Additional Capitalisation	890	37	47
Total	30177	16790	5951
Repayments of Loans during the year	11327	10632	5951
Net loan-Closing	18851	6158	0
Average Net Loan	22585	12504	3079
Rate of Interest on Loan	11.08%	11.11%	11.09%
Interest on loan	2503	1389	341

8. Interest on loan calculated based on the normative repayment in accordance with the judgment of the Tribunal works out as under:

Interest on loan

	(Rs in lakh)		
	1998-1999	1999-2000	2000-2001
Gross loan-Opening	74070	77927	75867
Cumulative repayments of Loans up to previous year	47750	51665	55611
Net loan-Opening	26320	26263	20256
Increase/ Decrease due to FERV	2967	-2097	-255
Increase/ Decrease due to Additional Capitalisation	890	37	47
Total	30177	24202	20048
Repayments of Loans during the year	3915	3946	4722
Net loan-Closing	26263	20256	15327
Average Net Loan	26291	23259	17791
Rate of Interest on Loan	11.08%	11.11%	11.09%
Interest on loan	2914	2583	1973

9. The Tribunal has, in its judgment dated 14.11.2006 decided that the effect of increase in working capital due to considering the cost of Naphtha at Rs. 249 lakh is to be considered for revision of one month's fuel expenses and two months' receivables also. Accordingly, fuel cost for one month and energy charges, which form part of receivables and the receivable for two months are recomputed as under based

on the actual operations on gas and naphtha fuel during the respective years of tariff period 1998-99, 1999-2000 and 2000-01 as furnished in Petition No.99/2002:

Fuel cost

	Up to 31.10.1998	1.11.1998 to 31.3.1999	1999-00	2000-01
Capacity (MW)	656.20	656.20	656.20	656.20
Target Availability (%)	68.49%	68.49%	68.31%	68.49%
Hours in a Day	24	24	24	24
Days in the Year	365	365	366	365
Annual Hours of Operation	8760	8760	8784	8760
Energy Generated (MU)	3937	3937	3937	3937
Aux. Power Consumption	3.00%	3.00%	3.00%	3.00%
Aux. Power Consumption (MU)	118	118	118	118
Energy Sent Out (MU)	3819	3819	3819	3819
Gross Station Heat Rate (kCal/kwh) with NOX Operation on Naptha as % of Energy sent out (ESO)	2125	2125	2125	2125
	27.90	27.90	20.97	44.46
Natural Gas				
Weighted Avg. GCV of gas (kCal/SCM))	10013	10013	9991	9955
Specific gas Consumption (SCM/kwh)	0.212	0.212	0.213	0.213
Annual Requirement of Gas (1000 SCM)	602445	602445	661804	466779
1 Month Requirement of Gas (1000 SCM)	50204	50204	55150	38898
Weighted Avg. Price of gas (Rs./1000 SCM)	4144.58	4144.58	4021.68	4888.89
Fuel Cost (Natural gas) - 1 month (Rs. In lakh)	2081	2081	2218	1902
Liquid Fuel				
Weighted Avg. GCV of Liquid Fuel (kCal/Kg.)	11253.33	11253.33	11296.67	11247.33
Specific Liquid Fuel Consumption (Kg/kwh)	0.189	0.189	0.188	0.189
Annual Requirement of Liquid Fuel(MT))	207429	207429	155308	330725
1 Month Requirement of Liquid Fuel (MT))	17286	17286	12942	27560
Weighted Avg. Price of Liquid Fuel (Rs./MT)	9406.58	9406.58	10889.91	17890.32
Fuel cost (Liquid Fuel) - 1 month (Rs. In lakh)	1626.00	1626.00	1409.41	4930.64
Fuel oil stock as per audited accounts (Rs. In lakh)	249	249	249	249
Variable Charges (Natural Gas)				
Gas (Rs/kwh)	0.9068	0.9068	0.8818	1.0759
Variable Charges per year (Rs. In lakh)	24969	24969	26616	22820
Variable Charges (Liquid Fuel)				
Liquid Fuel (Rs/kwh)	1.8312	1.8312	2.1118	3.4846
Variable Charges per year (Rs. In lakh)	19512	19512	16913	59168
Receivables				
Variable Charges -2 months (Natural Gas) (Rs. In lakh)	7413	7413	7255	13665
Fixed Charges - 2 months (Rs. In lakh)	4668	5193	5279	5326
Total (Rs. In lakh)	12082	12606	12533	18991

10. Based on the above, interest on working capital is re-calculated as per the details hereunder:

Interest on working capital

(Rs. In lakh)

	1998-99		1999-00	2000-01
	Up to 31.10.1998	From 1.11.1998 to 31.3.1999		
Fuel Cost	3707	3707	3627	6832
Liquid fuel stock	249	249	249	249
O & M expenses	257	257	283	311
Spares	464	464	464	464
Receivables	12082	12606	12533	18991
Total Working Capital	16759	17284	17157	26848
Working Capital Margin (WCM)	2030	2030	2030	2030
Total Working Capital allowed	14729	15254	15127	24818
Rate of Interest	13.00%	13.00%	12.00%	11.50%
Interest on allowed Working Capital	1915	1983	1815	2854
Interest on WCM	112.48	112.48	112.72	112.54
Return on WCM	121.80	162.40	162.40	162.40
Total Interest on Working capital	2149	2258	2090	3129

11. As regards the third aspect, that is, revision of O&M charges, it is seen that O&M figures reflected in the balance sheet for the generating station are Rs. 2806 lakh which were considered for tariff determination in the order dated 18.5.2005. Accordingly, no revision is called for on this account.

12. Based on the above, annual fixed charges in respect of the generating station have been recalculated as under:

ANNUAL FIXED CHARGES

(Rs. In lakh)

	1.4.1998 to 31.10.1998	1.11.1998 to 31.3.1999	1999- 2000	2000- 01
Interest on Loan	2914	2914	2583	1973
Interest on Working Capital	2149	2258	2090	3129
Depreciation	10740	10740	11299	11001
Return on Equity	9120	12160	12304	12122
O&M Expenses	3086	3086	3395	3734
Total	28009	31158	31671	31959

13. The petitioner shall claim the difference from the beneficiaries in five equal monthly installments.

14. It is also clarified that in all respects, except those specifically covered under the Tribunal's judgment, the methodology as adopted in the order dated 18.5.2004 has been considered while revising the annual fixed charges.

Sd/-
(R. KRISHNAMOORTHY)
MEMBER

Sd/-
(BHANU BHUSHAN)
MEMBER

New Delhi dated 2nd November, 2007