

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram:

- 1. Shri D.P. Sinha, Member**
- 2. Shri G.S. Rajamani, Member**
- 3. Shri K.N. Sinha, Member**

Petition No. 34/2002

In the matter of

Approval of revised fixed charges from 1.4.1997 to 31.10.1997 and tariff from 1.11.1997 to 31.3.2001 of Korba Super Thermal Power Station

And in the matter of

National Thermal Power Corporation Ltd. **Petitioner**

Vs

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

The following were present:

1. Shri K.K. Garg, GM (Comml), NTPC
2. Shri M.S. Chawla, DGM (Comml), NTPC
3. Shri C. Asokan, Sr. Manager, NTPC
4. Shri B. Dubey, Sr. Law Officer, NTPC
5. Shri S.P. Degwekar, Commercial Officer, MPSEB
6. Shri Rohit K. Singh, Advocate, MPSEB

**ORDER
(DATE OF HEARING 14.3.2002)**

The petitioner has filed this petition for approval of revised fixed charges for the period 1-4-1997 to 31-10-1997 on account of additional capitalisation and FERV

and approval of fixed charges in respect of Korba Thermal Power Station (Korba STPS) for the period from 1.11.1997 to 31.3.2001.

2. Korba STPS was declared under commercial operation on 1.6.1990 when the sixth unit was commissioned, though the first unit was commissioned on 1.8.1983. The tariff for Korba STPS for the entire capacity of 2100 MW was notified by Ministry of Power vide notification dated 2.11.1992, which was subsequently amended vide notifications dated 15.12.1995, 30.11.1998 and 14.5.1999 to account for change in rate of depreciation, increase in return on equity from 12% to 16% and impact of FERV and additional capitalisation based on audited accounts up to 1996-97. The notification dated 2.11.1992 was valid up to 31.10.1997, but was continued on ad hoc basis beyond 31.10.1997 in view of Clause 6 of that notification.

3. The petitioner had filed Petition No. 45/2000 to claim revised fixed charges due to additional capital expenditure and FERV capitalised in respect of Korba STPS for the years 1997-98 to 2000-01. The said petition was disposed of vide the Commission's order dated 2.1.2002. The Commission directed the petitioner to file fresh petition for determination of tariff for the period from 1.11.1997 to 31.3.2001 based on the terms and conditions notified by Ministry of Power as per the notification dated 2.11.1992. The present petition has been filed in pursuance of these directions of the Commission contained in order dated 2.1.2002.

4. Reply to the petition has been filed on behalf of Respondent No. 1 (MPSEB). It has been contended on behalf of Respondent No.1 that before undertaking the process of determination of tariff for the period from 1.11.1997 to 31.3.2001, the

Commission should decide the terms and conditions of tariff for that period under Section 28 of the Electricity Regulatory Commissions Act, 1998. It has been stated that the terms and conditions of tariff notified by Ministry of Power on 2.11.1992 applicable to Korba STPS were valid for a period of 5 years and these expired on 31.10.1997. This issue has already been considered by the Commission. The Commission in its order dated 21.12.2000, while laying down the terms and conditions of tariff, directed that these terms and conditions would be applicable with effect from 1.4.2001 and for the period prior to that, the terms and conditions earlier notified by the Central Government in Ministry of Power would continue to apply. Therefore, the terms and conditions of tariff in respect of Korba STPS for the period from 1.11.1997 to 31.3.2001 are not required to be determined by the Commission afresh. Accordingly, while disposing of Petition No. 45/2000, the Commission in its order dated 2.1.2002 had directed the petitioner to file the petition based on terms and conditions decided by Ministry of Power. The present petition has been filed in compliance with those directions. Therefore, we do not find any merit in the preliminary submission made on behalf of Respondent No.1.

5. It has been contended by Respondent No.1 that debt and equity should be in the ratio of 70:30 as applicable to IPPs, though as per notification dated 2.11.1992, debt and equity have been taken in the ratio of 50:50. It is further contended that ROE should be payable at 12% as there was no justification to increase ROE to 16% with effect from 1.11.1998. Similarly, on the question of depreciation, it has been submitted that prior to 1992, depreciation was charged at the rate of 3.4%. However, this was increased to 7.4% after 1994. Respondent No.1 has prayed that depreciation should be charged at the rate applicable prior to 1992. We do not find any force in any of

these submissions made on behalf of Respondent No.1. We have already noted that the petition has been filed based on the terms and conditions contained in Ministry of Power's notification dated 2.11.1992. Respondent No.1 has not been able to pin point any deviation on account of ROE, debt-equity ratio and depreciation from the said notification. In view of earlier decisions, we are bound to follow the terms and conditions for determination of tariff in respect of Korba STPS based on notification dated 2.11.1992.

6. Respondent No.1 has also raised the issues of interest on loan, interest on working capital, O&M expenses and the water charges. We have taken these submissions into account while considering the impact of these components on tariff. Respondent No.1 has also raised certain issues regarding the operational norms like specific fuel oil consumption, auxiliary energy consumption, incentive, etc. These aspects are not being considered in this petition. We now proceed to examine the different components of tariff separately.

CAPITAL COST

7. The investment approval for the project was accorded by the Central Government vide letter dated 1.8.1990 at a cost of Rs.1603.11 crores excluding WCM. Subsequently, CEA accorded its approval for R&M of the station on Environmental Action Plan (EAP) vide its letter dated 3.7.1996 at a cost of Rs.31.19 crores and for other R&M at a cost of Rs.106.86 crores vide letter dated 22.8.2000. Thus, the approved cost of the project adds up to Rs.1741.16 crores.

8. Ministry of Power while issuing tariff notification dated 2.11.1992 considered the project cost of Rs.1352.36 crores, which included initial spares of Rs.57.25 crores. Ministry of Power had allowed additional capitalisation of Rs.51.241 crores and FERV of Rs.24.01 crores during 1992-93 to 1996-97. Therefore, the total admitted cost of the project, including the initial spares work out to Rs.1427.611 crores as on 31.3.1997, which has been considered as the opening gross block for the purposes of present tariff petition.

9. The petitioner has claimed the amounts on account of additional capitalisation during the period from 1997-98 to 2000-01 as detailed below:

(Rs.in lakhs)

Financial Years	1997-98	1998-99	1999-00	2000-01	Total
1. New works					
(a) Within the scope of RCE	592.03	639.32	460.92	858.39	2550.66
(b) EAP	0.00	9.70	0.00	26.45	36.15
(c) R&M	0.00	0.00	0.00	666.35	666.35
(d) Not in the scope of RCE	349.29	287.90	543.20	284.98	1465.37
Total (a+b+c+d)	941.32	936.92	1004.12	1836.17	4718.53
2. Balance Payments	301.43	595.04	146.82	2677.47	3720.77
Total (1+2)	1242.76	1531.96	1150.94	4513.64	8439.30

10. Against the above claim, the petitioner has furnished the justification for the following expenditure under the New Works in the respective years:

(Rs.in lakhs)

Financial Years	1997-98	1998-99	1999-00	2000-01	Total
1. New works					
(a) Within the scope of RCE	592.03	639.32	460.92	858.39	2550.66
(b) EAP	0.00	9.70	0.00	26.45	36.15
(c) R&M	0.00	0.00	0.00	666.35	666.35
(d) Not in the scope of RCE	331.01	273.92	536.88	276.44	1418.25
Total (a+b+c+d)	923.04	922.94	997.80	1827.63	4671.41

No specific justification has been furnished by the petitioner in support of balance payments.

11. The following methodology has been adopted for allowing or disallowing the claim of the petitioner:

New Works

(a) The expenditure on any works, which was in the scope of approved project cost but undertaken after the date of commercial operation has been allowed.

(b) The expenditure incurred for the replacement of existing equipment/facility due to technology becoming obsolete or the equipment having outlived its utility in the normal course of operation, has also been allowed for capitalisation.

(c) The expenditure on the works undertaken/on purchase of additional equipment/facility which is giving benefit exclusively to the petitioner without any apparent benefit to the beneficiaries has not been allowed, unless it is found that expenditure was necessary for the benefit of the employees for giving necessary facilities at the remote location of the power project.

(d) Any mandatory expenditure arising out of statutory obligation due to change of law, etc., has been allowed.

Balance Payments

(a) Pertaining to works undertaken or order placed before the date of commercial operation which are presumed to be within the scope of approved project cost have been allowed.

(b) Pertaining to works undertaken or order placed after the date of commercial operation which might have been admitted by the Central Government in the previous tariff period have been allowed.

(c) Pertaining to works undertaken or order placed after the date of commercial operation which has been claimed as new works in the relevant years in the tariff period under consideration and allowed by the Commission, the balance payments in subsequent years pertaining to these new works have also been allowed.

(d) Other balance payments not falling in above categories have been disallowed.

12. Based on the above methodology, the entire amount of R&M expenditure on EAP as well as New works within the scope of RCE has been allowed. The other R&M expenditure to the tune of Rs.666.35 lakhs under various heads has been examined. It is found that the expenditure is not giving any direct benefit to the beneficiaries or has no contribution towards protection of environment. This expenditure has not been allowed for capitalisation.

13. During the financial year 2000-01, the petitioner has sought capitalisation of spares. It has been clarified by the petitioner that the capitalisation of spares is in accordance with the revised accounting standard, which became mandatory with effect from 1.4.1999. As per the present practice, only initial spares up to a certain amount, say 5% of the project cost are allowed to be capitalised. We would like to point out that maintaining accounts as per accounting standard is one thing and treating any expenditure to be eligible for tariff computation is another. The expenditure on spares subsequent to the date of commercial operation is to be accounted for as a part of O&M expenses in so far as tariff computation is concerned. Therefore, we do not allow the capitalisation of spares purchased after the date of commercial operation for tariff purpose. However, the petitioner should maintain a separate account for the yearly consumption of spares so that the same could be accounted for in the actual O&M for the respective years for the purpose of tariff.

14. Based on above discussion, we allow the year-wise additional capitalisation as given below:

(Rs.in lakhs)

Financial Years	1997-98	1998-99	1999-00	2000-01	Total
1. New work					
(a) Within the scope of RCE	592.03	639.32	460.92	858.39	2550.66
(b) EAP	0.00	9.70	0.00	26.45	36.15
(c) R&M	0.00	0.00	0.00	0.00	0.00
(d) Not in the scope of RCE	41.31	122.26	9.51	39.45	212.53
Total (a+b+c+d)	633.34	771.28	470.43	924.29	2799.34
2. Balance Payments	178.00	(-)206.65	1.18	(-)665.11	(-)692.58
Total (1+2)	811.34	564.63	471.61	259.18	2106.76

15. The petitioner's claim for additional capitalisation on account of FERV has also been considered. The petitioner has claimed FERV as per the details given below:

	(Rs. in lakhs)
1997-98	336
1998-99	1417
1999-2000	1453
2000-2001	(-)679

16. FERV claimed is on account of IBRD loan which consists of IBRD- EQ loan, IBRD-USD loan, IBRD-DEM (Tranche-A loan) and IBRD-DEM (Tranche-B loan) and IBJ-II loan. It has been submitted on behalf of the petitioner that in IBRD pool loan, all currencies disbursed in individual loans are pooled in the central disbursement account and every loan is assigned a share of total of each currency outstanding, proportional to its share of the total outstanding in the pool. Thus at all times each loan reflects the same currency composition as that of the pool. Under the pool system, withdrawal outstanding are revalued at current value arrived at by applying exchange adjustments calculated by IBRD on daily basis which is informed to the borrowers at the end of a month. The exchange adjustments are, however, applied to loan balances and informed to the borrowers at the close of each year. As per this system, the historical balance of the loan could be different from the current balance of the loan calculated by IBRD after adjustment of exchange fluctuations. Since debt management is at corporate level, we accept the above methodology.

17. IBJ-II loan was partly refinanced by Sumi-tomo-I & III loan, SBI NY-II and ING(PGCIL). We have considered only the repayment against the original IBJ-II loan for working out the FERV and interest on loan.

18. FERV on account of IBRD-loan has been worked out for the years 1999-2000 and 2000-01 considering the opening balance as on 1.4.1999 of IBRD-EQ loan, IBRD-USD loan, IBRD-DEM (Tranche A) loan, IBRD-DEM (Tranche B) loan. As far as FERV on account of IBJ-II loan is concerned, it has been worked out for the years 1997-98 to 2000-01. While considering FERV the claim on that account has, however, been restricted to the amount capitalised and claimed in the petition. Accordingly, we allow the FERV as under:

(Rs. In lakhs)

Year	1997-98	1998-99	1999-2000	2000-01
FERV	336	1417	1453	(-)685

19. In view of the above, the following items of capital cost for the purpose of tariff is allowed:

(Rs. in lakhs)

		1997-98	1998-99	1999-2000	2000-01
(i)	Opening Capital cost as on 1 st April	142761	143908	145890	147814
(ii)	Additions during the year due to				
(a)	Additional capitalisation	811	565	472	259
(b)	FERV	336	1417	1453	(-)685
(iii)	Closing Capital Cost as on 31 st March of the year	143908	145890	147814	147388

DEBT-EQUITY RATIO

20. Ministry of Power in its notification dated 2.11.1992 had considered the normative debt-equity ratio of 50:50. For the purpose of calculation of fixed charges in this petition same debt-equity ratio has been adopted.

RETURN ON EQUITY (ROE)

21. ROE of 12% per annum for the period from 1.11.1997 to 31.10.1998 and thereafter, ROE @ 16% per annum has been allowed as provided in the notifications issued by Ministry of Power. The charges payable by the respondents on account of return on equity works out as under:

	(Rs. in lakhs)*
1997-98(1.11.1997 to 31.3.1998)	8600
1998-99(1.4.1998 to 31.10.1998)	8694
1998-99 (1.11.1998 to 31.3.1999)	11592
1999-2000	11748
2000-2001	11808

* The amount relates to the whole year. For part of the year, pro rata payments shall be made.

INTEREST ON LOAN

22. The normative loan amount has been worked out as per the debt-equity ratio given in Para 20 above. The annual repayment of loan up to 31.3.1997 as per the notification dated 2.11.1992 has been considered. The annual repayment amount for the years 1997-98 to 2000-01 have been worked out as per the following formula.

$$\frac{\text{Annual actual repayment during the year} \times \text{normative loan at the beginning of the year}}{\text{Actual loan at the beginning of the year.}}$$

The amount of annual repayment for calculation of interest on loan is considered as worked out by the above formula, or as given in the petition, whichever is higher.

23. For the purpose of calculation of amount of interest on loan, the weighted rate of interest on loan has been worked out on the basis of actual rate of interest on actual average loans and the same is applied on the normative average loan during

the year. The charges payable by the respondents on account of interest on loan are as under:

(Rs. in lakhs)*

Particulars	As worked out - For Full Year				
	1997-98	1998-99		1999-2000	2000-01
	From 1.11.97 to 31.3.98	From 1.4.98 to 31.10.98	From 1.11.98 to 1.4.99		
Loan					
Gross loan-Opening	71381	71954		72945	73907
Cumulative repayments of Loans upto previous year	18108	40773		54423	57160
Net loan-Opening	53273	31181		18522	16747
Increase/Decrease due to FERV	168	709		726	(-)342
Increase/Decrease due to Additional Capitalisation	406	282		236	130
Total	53846	32172		19484	16534
Repayments of Loans during the year	22665	13650		2737	1767
Net loan-Closing	31181	18522		16747	14767
Average Net Loan	42227	24852		17635	15757
Weighted Rate of Interest on Loan	8.95%	5.76%		5.26%	6.81%
Interest on loan*	3779	1431		928	1073

* The amount relates to full year. For part of the year, pro rata payments shall be made.

DEPRECIATION

24. Before 1-11-1992 the single part tariff was applicable and the petitioner has not furnished the depreciation amount recovered in single part tariff upto 31.10.1992. Therefore, the details of depreciation amount as furnished by the petitioner up to 31.10.1992 as per the accounts maintained have been taken into account. Depreciation recovered in tariff from 1.11.1992 to 31.10.1997 as notified by Ministry of Power has also been taken into account. Ministry of Power had allowed depreciation @ 7.59% and the same rate has been followed for the purpose of calculation of fixed charges from 1.11.1997 to 31.3.2001. The year-wise amount of depreciation to be

recovered from respondents in tariff are detailed below:

	Asset Value	Rate	(Rs. in lakhs)***
1997-98(1.11.1997 to 31.3.1998)	142761	7.59%	10836
1998-99(1.4.1998 to 31.10.1998)	143908	7.59%	10923
1998-99 (1.11.1998 to 31.3.1999)			10923
1999-2000	145890	7.59%	11073
2000-2001	147814	7.59%	11219

*** The figures relate to full year. For part of the year pro-rata payment shall be made.

O&M EXPENSES

25. In the tariff notification dated 2.11.1992, the actual O&M expenses for the year 1991-92 was taken as a base with escalation of 10% per annum for future years. Keeping in view the methodology adopted by Ministry of Power, the actual O&M expenses of Rs.10401 lakhs including water charges for the year 1996-97 as per the audited balance sheet in respect of Korba STPS has been taken as the base and an escalation factor of 10% per annum has been applied to work out O&M expenses for the year 1997-98 to 2000-01. In the light of the above, water charges have not been considered separately. Based on this methodology, the charges payable by the respondents on account of O&M are as under:

	(Rs. in lakhs) @
1997-98(1.11.1997 to 31.3.1998)	11441
1998-99(1.4.1998 to 31.10.1998)	12585
1998-99 (1.11.1998 to 31.3.1999)	12585
1999-2000	13844
2000-2001	15228

@ The amount relates to full year. For part of the year, prorata payments shall be made.

INTEREST ON WORKING CAPITAL

26. Working capital has been calculated considering the following elements:

(a) **Fuel Cost, Coal Stock and Oil stock:** The petitioner has not furnished the details of Calorific Value (CV) of Coal/Oil, by stating "Not applicable". In view of this, we could not assess the working capital requirement on account of these items. At the same time, we are conscious of the fact that these items are normally required in a power station. Therefore, we have taken a conscious view to provide for these items, on the basis of what was provided for in the calculation of tariff in the previous tariff setting by Govt of India. Accordingly, the working capital requirement on account of above items has been provided for in this tariff period.

We re constrained to take this view because the necessary details were not furnished by the petitioner despite the opportunities available to them.

(b) **O&M Expenses:** O&M expenses for working capital has been considered for 1 month of the respective year.

(c) **Spares:-** In the Ministry of Power Notification dated 211-1992, the actual spares of the last year i.e. 1991-92 less 1/5th initial capitalized spares were considered. In accordance with the above methodology adopted by Ministry of Power, the actual spares for the year 1996-97 as per the audited balance sheet of Korba STPS is considered in the working for the years 1997-98 to 2000-01.

(d) **Receivables:** - Receivable has been worked out on the basis of two months of fixed and variable charges. In view of the position explained in sub-para (a) above, variable charges component of the receivables in the working capital had been estimated on the basis of variable charge in the previous tariff period. The fixed charge component of the receivables are based on the calculations for the current tariff period.

27. Ministry of Power in its notification had considered the working capital margin of Rs.2214 lakhs. The same has been adopted for the purpose of calculating working capital for the years 1997-98 to 2000-01. 50% of the working capital margin has been treated as equity and the remaining 50% as loan by retaining the debt-equity ratio of 50:50 and interest and return on equity have been allowed accordingly. The average SBI PLR of the respective year has been considered as the rate of interest on working capital. The rate of interest adopted during the years 1997-98, 1998-99, 1999-2000 and 2000-01 is 14%, 13%, 12% and 11.5% respectively. Based on the above methodology, the year-wise details of interest on working capital payable by the respondents to the petitioner are as under:

(Rs. in lakhs) @@

1997-98(1.11.1997 to 31.3.1998)	2278
1998-99(1.4.1998 to 31.10.1998)	2083
1998-99 (1.11.1998 to 31.3.1999)	2192
1999-2000	2068
2000-2001	2054

@@ The amount relates to the whole year. For part of the year, pro rata payments shall be made.

28. The impact of additional capitalisation and FERV in the fixed charges for the period 1-4-1997 to 31-10-1997 (date of expiry of validity period of Ministry of Power tariff notification dated 2-11-1992) is as under:

(Rs. in lakhs)

	Addl. Capitalisation	FERV
Depreciation	0	0
Interest on loan	23	10
Return on Equity	24	10
Total	47	20

29. The Commission, therefore, allows the following impact on fixed charges for the period 1.4.1997 to 31.10.1997:

(Rs. in lakhs)

Impact due to additional capitalisation	47 x 7/12
Impact due to FERV	20 x 7/12

30. Annual fixed charges for the period 1.11.1997 to 31.3.2001 allowed are summed up below:

(Rs. in Lacs)

Particulars						
	1997-98		1998-99		1999-2000	2000-01
	From 1.11.97	Upto 31.10.98	From 1.11.98			
Interest on Loan	3779	1431	1431	928	1073	
Interest on Working Capital	2278	2083	2192	2068	2054	
Depreciation	10836	10923	10923	11073	11219	
Return on Equity	8600	8694	11592	11748	11808	
O & M Expenses	11441	12585	12585	13844	15228	
TOTAL	36934	35716	38723	39661	41382	

The payments for the part of the year shall be made on pro-rata basis.

31. The fixed charges decided by us in the preceding paras shall be shared by the respondents in the ratio of energy drawn from Korba STPS during the relevant period. The petitioner has already recovered fixed charges from the respondents in view of continuation of tariff notification dated 2.11.1992 on ad-hoc basis beyond 31.10.1997. The amount already recovered shall be adjusted against the fixed charges decided by us through this order.

32. The petitioner has not indicated energy charges payable in the respective year and it has been stated that it is not required as the tariff is for the past period and recalculation will have no effect because operational norms remain unchanged.

33. This disposes of Petition No. 34/2002.

Sd/-
(K.N. SINHA)
MEMBER

Sd/-
(G.S. RAJAMANI)
MEMBER

Sd/-
(D.P. SINHA)
MEMBER

New Delhi dated the 10th October, 2002