

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram:

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

Petition No. 135/2005

In the matter of

Approval of tariff in respect of Agartala Gas Turbine Power Project (4x21 MW) for the period from 1.4.2004 to 31.3.2009.

And in the matter of

North Eastern Electric Power Corporation Ltd, Shillong **Petitioner**
Vs

1. Assam State Electricity Board, Guwahati
2. Meghalaya State Electricity Board, Shillong
3. Department of Power, Govt. of Tripura, Agartala
4. Power and Electricity Department, Govt. of Mizoram, Aizawl
5. Electricity Deptt, Govt. of Manipur, Imphal
6. Department of Power, Govt. of Arunachal Pradesh, Itanagar
7. Department of Power, Govt. of Nagaland, Kohima
8. North Eastern Regional Electricity Board, Shillong
9. North Eastern Regional Load Despatch Centre, Shillong

.....**Respondents**

The following were present:

1. Shri P. K. Borah, NEEPCO
2. Shri D. Dey, NEEPCO
3. Shri B. K. Chakraborty, NEEPCO
4. Shri D. Chaudhary, NEEPCO
5. Shri A. G. West, NEEPCO
6. Shri P. K. Agrawal, NEEPCO
7. Shri P. Mazumdar, NEEPCO
8. Ms. C. Rane, NEEPCO
9. Shri P.K. Hazarika, ASEB
10. Shri K. Goswami, ASEB
11. Shri L. Priyaokumar, Electricity Department, Manipur
12. Shri M. Jaduswami Singh, Electricity Department, Manipur
13. Shri W. Rehman, Department of Power, Arunachal Pradesh
14. Shri A. Gian Chaudhuri, TSECL
15. Shri K. N. War, MESEB
16. Shri T. Passah, MESEB
17. Shri L. K. Kanungo, NERLDC
18. Shri R. Sutradhar, NERLDC
19. Shri H. M. Sharma, Consumer
20. Ms. Seema Sharma, Advocate, Consumer

ORDER
(Date of Hearing: 2.8.2007 at Guwahati)

The petitioner has filed this petition for approval of tariff in respect of Agartala Gas Turbine Power Project (4x21 MW) (hereinafter referred to as “the generating station”) for the period from 1.4.2004 to 31.3.2009, in accordance with the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004 (hereinafter referred to as “the 2004 regulations”).

2. The generating station comprises of four gas turbine generating units, each of 21 MW capacity. The first unit of the generating station was commissioned on 1.4.1998 and the date of commercial operation of the generating station as a whole is 1.8.1998. The tariff for the generating station for the period from 1.4.2003 to 31.3.2004 was determined by the Commission vide its order dated 9.9.2005 in Petition No. 32/2003.

3. The details of the fixed charges claimed by the petitioner in its affidavit dated 7.5.2007, are as hereunder:

(Rs in lakh)

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Interest on Loan	300	249	217	119	40
Interest on Working Capital	269	273	275	278	280
Depreciation	1788	1808	1796	1796	1796
Advance Against Depreciation	0	0	0	0	0
Return on Equity	2262	2287	2272	2272	2272
O & M Expenses	795	824	860	895	930
TOTAL	5414	5441	5420	5360	5318

4. The details of interest on working capital furnished by the petitioner and its claim for interest thereon are summarized hereunder:

Particulars	(Rs in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Fuel Cost (1 month)	427	427	427	427	427
Maintenance spares	423	448	475	504	534
O&M expenses (1 month)	66	69	72	75	78
Receivables (2 months)	1711	1715	1712	1702	1695
Total Working Capital	2627	2659	2686	2708	2734
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest on Working Capital	269	273	275	278	280

5. The reply to the petition was filed by Assam State Electricity Board, Tripura State Electricity Corporation Ltd and Consumer Ms. Mallika Sharma Bezbaruah.

CAPITAL COST

6. Regulation 17 of the 2004 regulations provide as follows:

“Subject to prudence check by the Commission, the actual expenditure incurred on completion of the project shall form the basis for determination of final tariff. The final tariff shall be determined based on the admitted capital expenditure actually incurred up to the date of commercial operation of the generating station and shall include capitalized initial spares subject to following ceiling norms as a percentage of the original project cost as on the cut off date:

Coal based/lignite-fired generating stations -2.5%

Gas Turbine/Combined cycle generating stations –4.0%

Provided that where the power purchase agreement entered into between the generating company and the beneficiaries provides a ceiling of actual expenditure, the capital expenditure shall not exceed such ceiling for determination of tariff.

Provided further that in case of the existing generating stations, the capital cost admitted by the Commission prior to 1.4.2004 shall form the basis for determination of tariff.”

7. The Commission while determining the tariff for the generating station by its order dated 9.9.2005 in Petition No. 32/2003, for the period 2003-04 had considered the capital cost of Rs.31910 lakh as on

1.4.2003. Subsequently, by an order dated 9.1.2007, in Petition No.71/2006, the Commission approved the additional capital expenditure of Rs.16.66 lakh for the year 2003-04.

8. The petitioner filed Appeal No.167/2005 before the Appellate Tribunal for Electricity (hereinafter referred to as “the Appellate Tribunal”) against the order dated 9.9.2005 in Petition No.32/2003, and the Tribunal by its judgment dated 31.10.2007, directed revision of capital cost, interest on loan based on normative debt repayment formula etc. In terms of its judgment, the Commission by its order dated 8.1.2008, has revised the capital cost to Rs.32488 lakh as on 1.4.2003 and consequently the annual fixed charges for the generating station for the period 2003-04.

9. During the proceedings, Ms. Seema Sharma, Advocate for consumer respondent Ms. Mallika Sharma Bezbaruah, submitted that the capital cost of the generating station should be limited to the total value of the contract less infirm power, as the delay in the completion of the project was attributable to the petitioner. It was also submitted that the petitioner had not submitted the basis upon which the revised cost estimate of Rs, 32255 lakh was prepared in comparison to the original DPR approved cost of Rs.29405 lakh.

10. The Gol vide its letter dated 28.12.2004 had approved the revised cost estimate of Rs.32255 lakh as the completion cost in

July 1998 after considering the expenditure already incurred by the petitioner. The difference in original DPR cost of December 1992 and the completion cost of July 1998 is due to various factors such as variation in exchange rates, increase in prices and change in technical specifications of generator transformers.

11. In view of the above, the contention of Ms. Sharma to limit the capital cost of the generating station is not maintainable.

12. Accordingly, the capital cost as on 1.4.2003, considered for the purposes of tariff for the period 2004-09 is Rs.32488 lakh.

Additional Capitalization during 2003-04

13. The additional capital expenditure claimed by the petitioner for the year 2003-04, excluding FERV is Rs.183 lakh, out of which an amount of Rs.166.32 lakh pertains to balance payments/balance works within the scope of approved cost and an amount of Rs.16.66 lakh pertains to new works not within the scope of approved cost.

14. The Commission in its order dated 9.9.2005, while determining the capital cost for the purpose of tariff for the period 2003-04, had observed as follows:

“The petitioner has claimed an additional capital expenditure of Rs.1.83 crore during 2003-04 on account of balance works within the original scope of the project. However, the same has not been admitted because we are restricting the capital cost, excluding FERV to Rs.311.20 crore. As such, the capital cost for the purpose of tariff (excluding FERV for the period 2003-04) as on 31.3.2004, shall also be restricted to Rs.319.10 crore.”

15. However, the Commission by its order dated 9.1.2007, allowed the additional capital expenditure on works, for the year 2003-04, (excluding FERV) amounting to Rs.16.66 lakh, while determining the gross block as on 1.4.2004. As the capital cost as on 1.4.2003 has been revised by the Commission in terms of the judgment of the Tribunal, the additional capital expenditure towards balance works within the scope of the approved cost amounting to Rs.166.32 lakh, during 2003-04, which was earlier disallowed by order dated 9.9.2005, is now considered for working out the capital cost as on 1.4.2004. Thus the total amount considered for additional capitalization on works for the period 2003-04, (excluding FERV) is Rs.182.98 lakh.

Extra Rupee Liability during the years 2003-04

16. Regulation 1.13 (a) of the 2004 regulations provide as follows:

“Extra rupee liability towards interest payment and loan repayment actually incurred, in the relevant year shall be admissible; provided it directly arises out of foreign exchange rate variation and is not attributable to Utility or its suppliers or contractors. Every utility shall follow the method as per the Accounting Standard-11 (Eleven) as issued by the Institute of Chartered Accountants of India to calculate the impact of exchange rate variation on loan repayment

Any foreign exchange rate variation to the extent of the dividend paid out on the permissible equity contributed in foreign currency, subject to the ceiling of permissible return shall be admissible. This as and when paid, may be spread over the twelve-month period in arrears”

“Regulation 1.7 of the tariff regulations, 2001 further provides that recovery of foreign exchange rate variation shall be done directly by the utilities from the beneficiaries without filing a petition before the Commission. In case of any objections by the beneficiaries to the amounts claimed on these counts, they may file an appropriate petition before the Commission.”

17. The FERV on account of foreign loan, claimed by the petitioner during 2003-04 and admitted by the Commission in its order dated 9.1.2007 is Rs.383.03 lakh. However, keeping in line with the direction of the Appellate Tribunal to adopt normative repayment methodology, the Commission decided to consider normative FERV, instead of the

actual FERV for determining the capital cost as on 1.4.2004, for the purpose of tariff for the period 2004-09. Thus, the normative FERV for the period 2003-04, works out to Rs.342.78 lakh.

18. Based on the above, the gross block as on 1.4.2004 works out as per details given hereunder:

(Rs.in lakh)

Admitted Capital cost as on 1.4.2003	32488
Additional capital expenditure for the period 2003-04	182.98
Normative FERV for 2003-04	342.78
Less: Undischarged liability	0
Capital cost as on 1.4.2004	33013.76

Additional Capital Expenditure for the period 2004-06

19. The details of additional capital expenditure, excluding FERV, claimed by the petitioner for the period 2004-06 is as follows:

(Rs. in lakh)

	2004-05	2005-06	Total
A) Works with in the scope of approved cost			
Balance payment/additional expenditure incurred	2.41	0	2.41
B) Works not with in the scope of approved cost			
New works undertaken for improvement of performance and efficiency	23.02	7.87	30.89
Total additional capitalization (A+B)	25.43	7.87	33.30

20. The admissibility of the additional expenditure claimed is examined as under:

(a) Deferred liabilities relating to works/services within the original scope of work

The petitioner has claimed capital expenditure of Rs.2.41 lakh during 2004-05 on account of balance payments including a negative adjustment of Rs.24.21 lakh booked earlier on account of security

deposit. It is seen that the Sales tax authorities had imposed sales tax amounting to Rs.20.01 lakh, on the amount recovered by the petitioner from the bills of the contractor for materials purchased and supplied to contractor. The balance payment made for adjustment of sales tax is Rs.20.01 lakh and the petitioner has booked the amount of sales tax during construction against the respective asset. Since taxes etc. paid by the petitioner become part of the capital cost, the delayed payment of sales tax of Rs.20.01 lakh is allowed to be capitalized. The other balance payments made during 2004-05 are for civil works of main plant of Rs.5.40 lakh and Rs.1.21 lakh for water supply and drainage system. These expenditures appear to be in order since capitalization of these expenditures was delayed on account of non-completion of formalities such as late submission of final bills, completion certificates and non-compliance of various requirements by the contractors for closure of the contract. Hence, capitalization under this head is allowed. In view of the above, the net expenditure of Rs.2.41 lakh as claimed by the petitioner after adjustment is allowed to be capitalized.

(b) Additional Capital Expenditure on New works not within the approved cost

The petitioner has claimed additional capital expenditure of Rs.23.03 lakh during 2004-05 and Rs.7.87 lakh during 2005-06, totaling Rs.30.89 lakh under this head for efficient performance of the generating station. The expenditure under this head is of the following nature:

- (i) Special Tools and Plant
- (ii) Ordinary Tools and Plant

- (iii) Transport Equipment
- (iv) Furniture & Fixture such as Godrej Table, Computer Chair, Lock, Hydraulic door closer, Godrej Drawer, Almirah, Godrej Chairs, Visitor Chairs, Steel Rack etc.
- (v) EDP Hard ware such as RAM, Colour Monitor, Ethernet Card, Deu and VCU card for VSAT system, PCS make 11con AMD AtholX P 2000, 5 Watt ODU in Extended ' C' Band , Combo drive , etc.
- (vi) Office equipment viz, Fax machine, printers, UPS, Copiers, Digital Camera etc.
- (vii) Vehicle Shed
- (viii) Electrical Storeroom

2004-05:

Out of the total claim of Rs.23.03 lakh during 2004-05, the expenditure of Rs.5.24 lakh on Special tools and plant such as HSS Tapper Shank, Turist Drill, Lyall make Pipe Wrench, Torque Wrench, Hydraulic Jack, Electrostatic liquid cleaner machine and Electrical Tools etc., is allowed to be capitalized as they have been incurred for reducing the downtime and maintaining the availability of the generating station in the ABT regime. Also, the expenditure of Rs.11.73 lakh on EDP Hardware for VSAT system is allowed as it is required under the ABT regime. However, the expenditure on transport of equipment (truck) amounting to Rs.1.84 lakh is not considered for want of proper justification and the expenditure on minor assets such as Ordinary Tools and Plant, Furniture & Fixture such as Godrej Table, Computer Chair, Lock, Hydraulic door closer, Godrej Drawer, Almirah, Godrej Chairs, Visitor Chairs, Steel Rack etc, EDP Hardware for computer and office equipment, amounting to Rs.4.22 lakh brought after the cut-off date is

not allowed to be capitalized in terms of Regulation 18(3) of the 2004 regulations.

2005-06:

Out of the total claim of Rs.7.87 lakh during 2005-06, the expenditure of Rs.3.23 lakh on Special tools and plant such as HSS Tapper Shank, Turist Drill, Lyall make Pipe Wrench, Torque Wrench, Hydraulic Jack, Electrostatic liquid cleaner machine and Electrical Tools etc., and Rs.0.82 lakh for construction of two air conditioned electrical storerooms are allowed to be capitalized as they have been incurred for reducing the downtime and maintaining the availability of the generating station in the ABT regime. However, the expenditure of Rs.0.42 lakh for construction of vehicle shed is not considered for want of proper justification and the expenditure on minor assets such as Ordinary Tools and Plant, Furniture & Fixture such as Godrej Table, Computer Chair, Lock, Hydraulic door closer, Godrej Drawer, Almirah, Godrej Chairs, Visitor Chairs, Steel Rack etc, EDP Hardware for computer and office equipment amounting to Rs.3.40 lakh brought after the cut-off date are not allowed to be capitalized in terms of Regulation 18(3) of the 2004 regulations.

22. Based on the above discussions, the following additional capital expenditure is allowed to be capitalized for the year 2004-05 and 2005-06:

(Rs. in lakh)

	2004-05	2005-06	Total
A) Works with in the scope of approved cost			
Balance payment / additional expenditure incurred	2.41	0	2.41
B) Works not with in the scope of approved cost			
New works undertaken for improvement of performance and efficiency	16.97	4.05	21.02
Total additional capitalization	19.38	4.05	23.38

23. After taking into account the additional capital expenditure allowed as above, the capital cost as on 1.4.2005 and 1.4.2006 for the purpose of tariff is worked out as follows:

(Rs. in lakh)

Particulars	2004-05	2005-06
Opening Capital cost as on 1 st April of the Financial year	33013.76	33033.14
Additional capitalization allowed	19.38	4.05
Capital Cost as on 31 st March of the Financial year	33033.14	33037.19

24. The petitioner by its affidavit dated 7.5.2007 has certified that the assets pertaining to the generating station are still in use and that there is no undischarged liability in the gross block as on 31.3.2004, 31.3.2005 and 31.3.2006 and additional capitalization for the period 2003-04 to 2005-06.

25. Based on the above, the capital cost considered for the purpose of tariff for the period 2004-09 is as follows:

(Rs. in lakh)

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Opening Capital cost as on 1 st April of the Financial year	33013.76	33033.14	33037.19	33037.19	33037.19
Additional capitalization	19.38	4.05	-	-	-
Capital Cost as on 31 st March of the Financial year	33033.14	33037.19	33037.19	33037.19	33037.19

DEBT-EQUITY RATIO

26. Regulation 20 of the 2004 regulations, as amended on 1.6.2006 provide that:

(1) In case of the existing generating stations, debt-equity ratio considered by the Commission for the period ending 31.3.2004 shall be considered for determination of tariff with effect from 1.4.2004:

Provided that in cases where the tariff for the period ending 31.3.2004 has not been determined by the Commission, debt-equity ratio shall be as may be decided by the Commission:

Provided further that in case of the existing generating stations where additional capitalisation has been completed on or after 1.4.2004 and admitted by the Commission under Regulation 18, equity in the additional capitalization to be considered shall be,-

(a) 30% of the additional capital expenditure admitted by the Commission; or

(b) equity approved by the competent authority in the financial package, for additional capitalization; or

(c) actual equity employed,

Whichever is the least:

Provided further that in case of additional capital expenditure admitted under the second proviso, the Commission may consider equity of more than 30% if the generating company is able to satisfy the Commission that deployment of such equity of more than 30% was in the interest of general public.

(2) xxxxxx

(3) xxxxxx

(4) The debt and equity amount arrived at in accordance with above clause (1), (2) or (3), as the case may be, shall be used for calculation of interest on loan, return on equity, advance against depreciation and foreign exchange rate variation.

27. The Commission had considered normative debt equity ratio of 50:50 in the order dated 9.9.2005, in Petition No.32/2003 for the period 1.4.2003 to 31.3.2004. As such, keeping in line with the 2004 regulations, the same debt equity ratio is considered for computation of tariff for the tariff period 2004-09. However, for working out the normative loan as on 1.4.2004, normative FERV for the period 2003-

04, amounting to Rs.342.78 lakh has been considered. Thus, the normative loan as on 1.4.2004 is Rs.16678 lakh.

28. The additional capital expenditure incurred during the years 2004-05 and 2005-06 have been funded from internal resources. As such, keeping in line with the 2004 regulations, the debt-equity ratio of 70:30 is considered for additional capital expenditure incurred during 2004-05 and 2005-06 for computation of tariff, for the tariff period 2004-09.

29. Based on the above, equity base considered for the purpose of tariff is as under:

	(Rs in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Opening balance	16335	16341	16343	16343	16343
Increase/decrease due to FERV	0	0	0	0	0
Increase /decrease due to additional capitalisation	6	1	0	0	0
Closing balance	16341	16343	16343	16343	16343
Average	16338	16342	16343	16343	16343

TARGET AVAILABILITY

30. The petitioner has considered Target Availability of 80% based on the provisions of the 2004 regulations. Accordingly, Target Availability of 80% has been considered for recovery of full fixed charges and computation of fuel element in the working capital for the period from 1.4.2004 to 31.3.2009.

RETURN ON EQUITY

31. Clause (iii) of Regulation 21 of the 2004 regulations stipulates that return on equity shall be computed on the equity base determined

in accordance with regulation 20 @ 14% per annum. Equity invested in foreign currency is to be allowed a return up to the prescribed limit in the same currency and the payment on this account is made in Indian Rupees based on the exchange rate prevailing on the due date of billing.

32. The petitioner has claimed return on equity after accounting for equity on account of additional capitalization on works for the period 2004-05 and 2005-06. Accordingly, the return on equity has been worked out on the average normative equity as follows:

	(Rs in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Equity Base	16338	16342	16343	16343	16343
Rate of return on Equity	14%	14%	14%	14%	14%
Return on Equity	2287	2288	2288	2288	2288

INTEREST ON LOAN

33. Clause (i) of Regulation 21 of the 2004 regulations, as amended on 1.6.2006 *inter alia* provides that:

- (a) *Interest on loan capital shall be computed loan wise on the loans arrived at in the manner indicated in regulation 20.*
- (b) *The loan outstanding as on 1.4.2004 shall be worked out as the gross loan in accordance with Regulation 20 minus cumulative repayment as admitted by the Commission or any other authority having power to do so, up to 31.3.2004. The repayment for the period 2004-09 shall be worked out on a normative basis;*
- (c) *Generating Company shall make every effort to re-finance the loan as long as it results in net benefit to the beneficiaries. The costs associated with such re-financing shall be borne by the beneficiaries.*
- (d) *The changes to the loan terms and conditions shall be reflected from the date of such re-financing and benefits passed on to the beneficiaries.*
- (e) *In case of any dispute, any of the parties may approach the Commission with proper application. However, the beneficiaries shall not withhold any payment as ordered by the Commission to the Generating Company during pendency of any dispute relating to re-financing of loan.*

- (f) *In case any moratorium period is availed of by the Generating Company, depreciation provided for in the tariff during the years of moratorium shall be treated as repayment during those years and interest on loan capital shall be calculated accordingly.*
- (g) *The Generating Company shall not make any profit on account of re-financing of loan and interest on loan.*
- (h) *The generating company may, at its discretion, swap loans having floating rate of interest with loans having fixed rate of interest, or vice-versa, at its own cost and gains or losses as a result of such swapping shall accrue to the generating company:*

Provided that the beneficiaries shall be liable to pay interest for the loans initially contracted, whether on floating or fixed rate of interest.

34. Interest on loan has been worked out as follows:

- i) Interest on loan capital has been computed loan wise on the loans arrived at in the manner indicated in regulation 20.
- ii) The loan outstanding as on 1.4.2004 has been worked out as the gross loan in accordance with Regulation 20 minus cumulative repayment as admitted by the Commission up to 31.3.2004.
- iii) The normative repayment for the period 2004-09 has been worked out as per the following formula:
$$\frac{\text{Actual Repayment} \times \text{Normative Loan}}{\text{Actual Loan}}$$
- iv) The depreciation admitted for the period has been considered as the annual repayment for the period 2004-09. This is because the depreciation admitted is more than the normative loan repayment amount, calculated as per formulae at (iii) above.
- v) Deutsche Bank loan has four parts and each part carries floating rate of interest. The weighted average interest

rate of Deutsche Bank loan on consolidated basis applicable for the tariff period has been worked out. The interest rate considered in the present computation is the base rate of interest as on 15th march of the respective financial year plus 0.60% margin plus 1.20% guarantee fees. However, the interest on loan is subject to adjustment in case of any change in the base interest rate during the tariff period.

- vi) On the basis of actual rate of interest on actual loans, the weighted rate of interest on average loan has been worked out and the same has been applied on the normative average loan during the year to arrive at the interest on loan.
- vii) In the present case, GOI loans having higher rate of interest were pre-paid during 2003-04 by syndicated loan having floating rate of interest. None of the respondents have objected to the refinancing of GOI loan by syndicated loan having floating rate of interest. Hence the same has been considered. In terms of the judgment of the Appellate Tribunal dated 31.10.2007 in Appeal No. 162/2005, one time Arrangers fee amounting to Rs.3.64 lakh, has been considered for computation under this head for the year 2004-05.

35. The necessary calculations in support of weighted average rate of interest on loan are as follows:

(Rs in lakh)

		2004-05	2005-06	2006-07	2007-08	2008-09
1A	Gol-I /Syndicated Loan (Refinanced on 19.03.04)					
	Opening Balance	1178	1119	1001	884	766
	Addition/Drawl		0	0	0	0
	Repayment	59	118	118	118	118
	Closing Balance	1119	1001	884	766	648
	Average Loan	1149	1060	942	825	707
	Rate of Interest	7.39%	8.32%	8.97%	8.97%	8.97%
	Interest	85	88	85	74	63
1B	Gol-II /Syndicated Loan (Refinanced on 19.03.04)					
	Opening Balance	274	260	233	206	178
	Addition/Drawl	0	0	0	0	0
	Repayment	14	27	27	27	27
	Closing Balance	260	233	206	178	151
	Average Loan	267	247	219	192	164
	Rate of Interest	7.39%	8.32%	8.97%	8.97%	8.97%
	Interest	20	21	20	17	15
1	Gol /Syndicated Loan (Refinanced on 19.03.04)					
	Opening Balance	1452	1379	1234	1089	944
	Addition/Drawl	0	0	0	0	0
	Repayment	73	145	145	145	145
	Closing Balance	1379	1234	1089	944	799
	Average Loan	1416	1307	1162	1016	871
	Rate of Interest	7.39%	8.32%	8.97%	8.97%	8.97%
	Interest	105	109	104	91	78
2A	Deutsche Bank Loan- Part Project I					
	Opening Balance	1612	1210	808	406	4
	Addition/Drawl	0	0	0	0	0
	Repayment	402	402	402	402	4
	Closing Balance	1210	808	406	4	0
	Average Loan	1411	1009	607	205	2
	Rate of Interest	4.01%	3.97%	5.33%	5.33%	5.33%
	Interest	57	40	32	11	0
2B	Deutsche Bank Loan- Part Project II					
	Opening Balance	1787	1386	985	584	183
	Addition/Drawl	0	0	0	0	0
	Repayment	401	401	401	401	183
	Closing Balance	1386	985	584	183	0
	Average Loan	1586	1185	784	383	91
	Rate of Interest	4.01%	3.97%	5.33%	5.33%	5.33%
	Interest	64	47	42	20	5
2C	Deutsche Bank Loan- Part Project III					
	Opening Balance	1799	1398	998	597	196
	Addition/Drawl	0	0	0	0	0
	Repayment	401	401	401	401	196
	Closing Balance	1398	998	597	196	0

	Average Loan	1599	1198	797	396	98
	Rate of Interest	4.01%	3.97%	5.33%	5.33%	5.33%
	Interest	64	48	43	21	5
2D	Deutsche Bank Loan- Part Project IV					
	Opening Balance	1873	1461	1049	637	225
	Addition/Drawl	0	0	0	0	0
	Repayment	412	412	412	412	225
	Closing Balance	1461	1049	637	225	0
	Average Loan	1667	1255	843	431	112
	Rate of Interest	4.01%	3.97%	5.33%	5.33%	5.33%
	Interest	67	50	45	23	6
2	Total Deutsche Bank Loan					
	Opening Balance	7071	5455	3839	2223	607
	Addition/Drawl	0	0	0	0	0
	Repayment	1616	1616	1616	1616	607
	Closing Balance	5455	3839	2223	607	0
	Average Loan	6263	4647	3031	1415	304
	Rate of Interest	4.01%	3.97%	5.33%	5.33%	5.33%
	Interest	251	184	162	75	16
	TOTAL LOAN					
	Opening Balance	8523	6835	5073	3312	1551
	Addition/Drawl	0	0	0	0	0
	Repayment	1689	1761	1761	1761	752
	Closing Balance	6835	5073	3312	1551	799
	Average Loan	7679	5954	4193	2431	1175
	Rate of Interest, WARI	4.63%	4.92%	6.34%	6.85%	8.03%
	Interest	356	293	266	167	94

36. The computations of interest on notional loan by applying weighted average interest rate are appended herein below:

COMPUTATION OF INTEREST ON LOAN

	(Rs in lakh)				
Interest on Loan	2004-05	2005-06	2006-07	2007-08	2008-09
Gross loan-opening	16678	16692	16695	16695	16695
Cumulative repayments of loans upto previous year	8903	10730	12559	14387	16216
Net loan-opening	7776	5962	4136	2307	479
Increase/ Decrease due to additional capitalization	14	3	0	0	0
Increase/ decrease due to FERV	0	0	0	0	0
Total	7789	5964	4136	2307	479
Repayments of loans during the year	1828	1828	1829	1829	479
Net loan-closing	5962	4136	2307	479	0
Average net loan	6869	5049	3222	1393	239
Rate of Interest on loan	4.63%	4.92%	6.34%	6.85%	8.03%
Interest on loan	318	249	204	95	19
One -time financial charges	3.64	0.00	0.00	0.00	0.00
Interest on loan	322	249	204	95	19

DEPRECIATION

37. Sub-clause (a) of Clause (ii) of Regulation 21 of the 2004 regulations provides for computation of depreciation in the following manner, namely:

- (i) *The value base for the purpose of depreciation shall be the historical cost of the asset.*
- (ii) *Depreciation shall be calculated annually based on straight line method over the useful life of the asset and at the rates prescribed in Appendix II to these regulations. The residual life of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the historical capital cost of the asset. Land is not a depreciable asset and its cost shall be excluded from the capital cost while computing 90% of the historical cost of the asset. The historical capital cost of the asset shall include additional capitalization on account of Foreign Exchange Rate Variation up to 31.3.2004 already allowed by the Central Government/Commission.*
- (iii) *On repayment of entire loan, the remaining depreciable value shall be spread over the balance useful life of the asset.*
- (iv) *Depreciation shall be chargeable from the first year of operation. In case of operation of the asset for part of the year, depreciation shall be charged on pro rata basis.*

38. The cost of land in the present case is Rs.276.39 lakh. The gross depreciable value of the asset, excluding land cost, is $0.9 \times (\text{Rs.}33013.76 - \text{Rs.}276.39 \text{ lakh}) = \text{Rs.}29463.63 \text{ lakh}$. Cumulative depreciation and AAD recovered in tariff upto 31.3.2004 is Rs.11581 lakh. Remaining depreciable value as on 1.4.2004 is thus Rs.17883 lakh.

39. The petitioner has calculated the weighted average depreciation rate (including cost of land) of 5.53% based on asset-wise depreciation corresponding to a gross block of Rs.33054.04 lakh as on 31.3.2004, which rate has been allowed in these calculations.

40. Based on the above, the depreciation for the period 1.4.2004 to 31.3.2009, works out as follows:

(Rs in lakh)						
	Up to 31.3.2004	2004-05	2005-06	2006-07	2007-08	2008-09
Capital Cost	33014					
Opening Balance		33014	33033	33037	33037	33037
Increase/ Decrease due to FERV		0	0	0	0	0
Increase/ Decrease due to Additional Capitalisation		19	4	0	0	0
Closing Balance		33033	33037	33037	33037	33037
Average Capital Cost		33023	33035	33037	33037	33037
Depreciation						
Rate of depreciation	5.53%	5.53%	5.53%	5.53%	5.53%	5.53%
Depreciation value 90%	29464	29464	29481	29485	29485	29485
Balance depreciation to be recovered at the beginning of the year		17883	16073	14248	12419	10591
Depreciation recovered in tariff		1828	1828	1829	1829	1829
Cumulative Depreciation/AAD recovered	11581	13408	15237	17065	18894	20722

ADVANCE AGAINST DEPRECIATION

41. As per sub-clause (b) of clause 21 of the 2004 regulations, in addition to allowable depreciation, the generating company shall be entitled to Advance Against Depreciation, computed in the manner given hereunder:

AAD = Loan repayment amount as per regulation 21 (i) subject to a ceiling of 1/10th of loan amount as per regulation 20 minus depreciation as per schedule

42. It is also provided that Advance Against Depreciation shall be permitted only if the cumulative repayment up to a particular year exceeds the cumulative depreciation up to that year. It is further provided that Advance Against Depreciation in a year shall be

restricted to the extent of difference between cumulative repayment and cumulative depreciation up to that year.

43. The petitioner has not claimed Advance Against Depreciation. Therefore, the petitioner's entitlement to Advance Against Depreciation is "nil".

O&M EXPENSES

44. The 2004 regulations have prescribed the following O&M expense norms for small gas turbine power generating stations without warranty spares:

(Rs in lakh)

Year	2004-05	2005-06	2006-07	2007-08	2008-09
O&M expenses / MW	9.46	9.84	10.24	10.65	11.07

45. The petitioner has claimed O&M expenses as detailed below as per the 2004 regulations, for small gas turbine power generating station without warranty spares.

(Rs in lakh)

Year	2004-05	2005-06	2006-07	2007-08	2008-09
O&M expenses	795	824	860	895	930

46. The petitioner by its affidavit dated 18.6.2007 has submitted that the actual O&M expenses should be allowed in view of the high cost involved due to small size of the generating units, remoteness of the project, adverse law and order condition in the region and the higher cost of material and services. The petitioner has also submitted audited cost of actual O&M expenses for the year 2004-05 and 2005-06 as under:

(Rs. in lakh)		
Year	2004-05	2005-06
O&M Expenses	1222	1937
O&M /MW	14.55	23.05

47. The normative O&M expenses of smaller gas turbine units are much higher than the gas turbine / combined cycle stations of other unit sizes. As such, we do not find any justification for allowing the increased O&M expenses. However, the petitioner is at liberty to approach the Commission in accordance with law for recovering such abnormal O&M expenses with proper justification, if so advised furnishing the details of actual expenses incurred. As such, the O&M expenses as claimed by the petitioner at para 45 above, is allowed.

INTEREST ON WORKING CAPITAL

48. In accordance with clause (v) of Regulation 21 of the 2004 regulations, working capital in case of gas based generating stations shall cover:

- (a) Fuel cost for one month, corresponding to target availability duly taking into account the mode of operation of the generating station on gas fuel or liquid fuel
- (b) Liquid fuel stock for 1/2 month
- (c) Operation and maintenance expenses for one month
- (d) Maintenance spares @ 1% of the historical cost escalated @ 6% per annum from the date of commercial operation; and
- (e) Receivables equivalent to two months fixed and variable charges for sale of electricity calculated on target availability.

49. Under the 2004 regulations, the rate of interest on working capital shall be on a normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on 1.4.2004 or on 1st April of the year in which the generating station or a unit thereof is declared under commercial operation, whichever is later. Interest on working capital shall be payable on normative basis notwithstanding that the generating company has not taken working capital loan from any outside agency.

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

(a) **Fuel Cost:** The petitioner has claimed following cost for fuel in working capital:

Particulars	(Rs. in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Cost of Fuel for 1 month (Gas)	427	427	427	427	427

The petitioner has not submitted the revised figures of the fuel cost in its affidavit dated 8.10.2007, in accordance with the revised base energy charge. However, based on the weighted average GCV and price of fuels adopted, the fuel component in working capital works out as follows, for different years during tariff period:

Particulars	(Rs. in lakh)				
	2004-05	2005-06	2006-07	2007-08 (leap year)	2008-09
Cost of Fuel for 1 month (Gas)	433.20	433.20	433.20	434.39	433.20

(b) **Liquid fuel stock for 1/2 month:** The petitioner's claim on this account is "nil" as no liquid fuel is used.

(c) **O&M expenses:** O&M expenses for working capital have been worked out for 1 month of O&M expenses approved above and are considered in working capital of the respective year.

(d) **Maintenance Spares:** The petitioner has claimed maintenance spares for the purpose of working capital as given below:

(Rs in lakh)					
Period	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance spares	423	448	475	504	534

51. As per methodology specified in the 2004 regulations, the petitioner has computed maintenance spares @ 1% of historical cost of Rs.29810 lakh (as closing block in the year of actual COD i.e.1.8.1998) and escalated @ 6% per annum from the date of commercial operation. Allowing 6% annual escalation with pro-rata escalation for the year 1998-99, the cost of maintenance spares computed for the tariff period 2004-09 is as under:

(Rs in lakh)					
Period	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance spares	414.88	439.77	466.18	494.13	523.78

(c) **Receivables:** The receivables have been worked out on the basis of two months of fixed and variable charges. The supporting calculations in respect of receivables are tabulated hereunder:

(Rs in lakh)

Receivables	2004-05	2005-06	2006-07	2007-08	2008-09
Variable Charges					
Gas(Rs/kwh)	0.8920	0.8920	0.8920	0.8920	0.8920
Variable Charges - full year	520	520	520	521	520
Variable Charges -2 months	86.64	86.64	86.64	86.88	86.64
Fixed Charges - 2 months	905	898	897	885	878
Receivables - 2 months	991	984	983	972	965

52. The average SBI Prime Lending rate of 10.25% as applicable on 1.4.2004 has been considered as the rate of interest on working capital during the tariff period 2004-09.

53. The necessary details in support of calculation of interest on working capital are appended below:

Calculation of interest on Working Capital

(Rs in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Fuel Cost	433	433	433	434	433
O & M expenses	66	69	72	75	78
Maintenance Spares	415	440	466	494	524
Receivables- 2 months	991	984	983	972	965
Total Working Capital	1906	1926	1955	1975	2000
Interest Rate-SBI PLR	10.25%	10.25%	10.25%	10.25%	10.25%
Total Interest on Working Capital	195	197	200	202	205

ANNUAL FIXED CHARGES

54. The annual fixed charges for the period 1.4.2004 to 31.3.2009 allowed in this order are summed up as below:

(Rs in lakh)

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Interest on Loan	322	249	204	95	19
Depreciation	1828	1828	1829	1829	1829
Advance Against Depreciation	0	0	0	0	0
Return on Equity	2287	2288	2288	2288	2288
O & M Expenses	795	824	860	895	930
Interest on Working Capital	195	197	200	202	205
Total	5427	5386	5381	5309	5271

ENERGY / VARIABLE CHARGES

55. The petitioner has claimed the base energy charge of 83.52 paise/kWh in its petition. Based on the GCV and price of gas indicated by the petitioner, the energy charge works out to 89.20 paise/kWh. The petitioner was directed vide order dated 7.8.2007 to reconcile the figures and submit detailed calculation of the energy charges and the petitioner vide its affidavit dated 8.10.2007 submitted the revised calculation of base energy charge, which works out to 89.07 paise/kWh.

56. The operational norms and parameters considered by the petitioner and adopted by the Commission for calculation of base energy charges are as under:

DESCRIPTION	Unit	Open Cycle operation
Gross Station Heat Rate	kCal/kWh	3580.00
Auxillary Energy Consumption	%	1.00
Wt. Avg. GCV of Gas	(Kcal/SCM)	8241.54
Wt. Avg. Price of Gas	(Rs./1000 SCM)	2032.94

57. The petitioner in its affidavit dated 7.5.2007 has submitted the statutory auditor's certificate regarding landed cost, GCV and actual consumption of Gas from November, 2003 to March 2006. However, as per 2004 regulations the values of preceding three months i.e. January, February and March 2004 has been considered, for calculating base energy charges.

58. The base rate of energy charges computed in combined cycle operation based on the data adopted by us is summarized below:

Rate of energy charge ex-bus per kWh sent on Gas	Paise/kWh	89.20
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59. Hence, the base energy charge of 89.20 paisa/kWh as computed above is allowed.

60. The Base rate of energy Charges (BREC) have been calculated on base value of GCV, base price of fuel and normative operating parameters as indicated in the above table and are subject to fuel price adjustment. The 2004 regulations provide for fuel price adjustment for variation in fuel price and GCV of fuels. The fuel price adjustment for fuel price and GCV variation shall be as per following formula:

$$\text{FPA} = \frac{10 \times (\text{SHR}_n) \times (\text{P}_m/\text{K}_m) - (\text{P}_s/\text{K}_s)}{(100 - \text{AC}_n)}$$

Where,

- FPA** = Fuel price Adjustment for a month in Paise/kWh Sent out
- SHR_n** = Normative Gross Station Heat Rate expressed in kCal/kWh
- AC_n** = Normative Auxiliary Consumption in percentage
- P_m** = Weighted average price of Gas or Liquid fuel as per PSL for the month in Rs. / 1000 SCM of Rs./ KL or Rs./MT
- K_m** = Weighted average gross calorific value of Gas or Liquid fuel for the month in Kcal/ SCM or kCal/ Litre or kCal/ Kg
- P_s** = Base price of Gas or Liquid fuel as taken for determination of base energy charge in tariff order in Rs. / 1000 SCM of Rs./ KL or Rs./MT
- K_s** = Base value of gross calorific value of Gas or Liquid fuel as taken determination of base energy charge in tariff order in Kcal/ SCM or kCal/ Litre or kCal/ Kg

61. The petitioner has also sought reimbursement of filing fee of Rs.25 lakh paid. A final view on reimbursement of filing fee is yet to be taken by the Commission for which views of the stakeholder have been called for. The view taken on consideration of the comments received shall apply in the present case as regards reimbursement of filing fee.

62. In addition to the charges approved above, the petitioner is entitled to recover other charges also like claim for reimbursement of income-tax, other taxes, cess levied by statutory authority and other charges in accordance with the 2004 regulations.

63. The petitioner is already billing the respondents on provisional basis in accordance with the order dated 9.9.2005 in Petition No. 32/2003. The provisional billing of tariff shall be adjusted in the light of the final tariff now approved by us.

64. This order disposes of Petition No. 135/2005.

Sd/-
(R.KRISHNAMOORTHY)
MEMBER

Sd/-
(BHANU BHUSHAN)
MEMBER

New Delhi dated the 20th day of February, 2008.