

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram:

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

Petition No. 150/2005

In the matter of

Approval of tariff in respect of sale of power from Assam Gas Based Power Station (291 MW) for the period 1.4.2004 to 31.3.2009.

And in the matter of

North Eastern Electric Power Corporation Ltd. ... **Petitioner**

Vs

1. Assam State Electricity Board, Guwahati
2. Meghalaya State Electricity Board, Shillong
3. Department of Power, Govt. of Tripura, Agartala
4. Power & Electricity Department, Govt. of Mizoram, Aizawl
5. Electricity Department, 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 D. Dey, NEEPCO
2. Shri B. K. Chakraborty, NEEPCO
3. Shri D. Chaudhary, NEEPCO
4. Shri A. G. West, NEEPCO
5. Shri P.K. Hazarika, ASEB
6. Shri K. Goswami, ASEB
7. Shri L. Priyaokumar, Electricity Department, Manipur
8. Shri M. Jaduswami Singh, Electricity Department, Manipur
9. Shri W. Rehman, Department of Power, Arunachal Pradesh
10. Shri A. Gian Chaudhuri, TSECL
11. Shri H. M. Sharma, Consumer
12. Ms. Seema Sharma, Advocate, Consumer

ORDER
(Date of Hearing: 2.8.2007)

The petitioner has made this application seeking approval of tariff in respect of Assam Gas Based Power Station (291 MW) (hereinafter referred to as “the generating station”) for the period 1.4.2004 to 31.3.2009 in terms of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004 (hereinafter referred to as “the 2004 regulations”). The petitioner has also prayed that it be reimbursed the expenditure by the beneficiaries towards publishing of notices in the newspapers and petition filing fee.

2. The petitioner has claimed the following fixed charges:

(Rs. In lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Interest on Loan	4058	4203	4011	3330	2542
Interest on Working Capital	775	793	803	802	799
Depreciation	7054	7205	7293	7293	7293
Advance Against Depreciation	0	0	0	0	0
Return on Equity	10245	10465	10593	10593	10593
O & M Expenses	2753	2855	2980	3099	3221
Total	24885	25521	25680	25117	24448

3. The details of working capital furnished by the petitioner and its claim for interest thereon are summarised hereunder:

(Rs. In lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Fuel Cost for 1 month	783	783	783	783	783
O & M expenses for 1 month	229	238	248	258	268
Spares	1040	1102	1168	1238	1312
Receivables- 2 months	5507	5613	5639	5545	5434
Total working capital	7559	7736	7838	7824	7797
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Total Interest on Working Capital	775	793	803	802	799

4. Tariff of the generating station for the period from 1.4.2003 to 31.3.2004 was initially approved vide the Commission's order dated

22.8.2005 and was subsequently modified as under vide order dated 14.12.2006, in Petition No. 33/2003 based on the capital cost of Rs. 145336 lakh:

(Rs In lakh)

Particulars	2003-04
Interest on Loan	5668
Interest on Working Capital	723
Depreciation	6998
Advance against Depreciation	0
Return on Equity	11627
O&M expenses	4568
Total	29584

CAPITAL COST

5. The Commission had, while determining tariff for the period 1.4.2003 to 31.3.2004 considered the capital cost of Rs. 145163 lakh as on 1.4.2003. Consequent to the review petition filed by the petitioner, the above capital cost was revised vide the Commission's order dated 14.12.2006 to Rs. 145336 lakh as on the above date. Subsequently, during the pendency of this petition the Commission allowed additional capitalisation of Rs. 1025.41 lakh for the period 2003-04 vide order dated 29.1.2007 in Petition No, 65/2006.

6. There is no foreign loan and as such no FERV has been claimed by the petitioner.

7. The petitioner has intimated vide its affidavit dated 8.10.2007 that the gross block of the generating station as on 31.3.2004 includes undischarged liabilities amounting to Rs. 1418 lakh and the gross block as on 31.3.2005 includes undischarged liabilities amounting to Rs. 1412 lakh. The petitioner

has further sworn that there is no undischarged liability as regards the additional capitalisation during 2003-04, 2004-05 and 2005-06.

8. Based on the above, the following opening capital cost is considered for the purpose of tariff determination:

		(Rs. In lakh)
S. No.	Particulars	Amount
1	Capital Cost as on 1.4.2003 (as admitted vide order dated. 14.12.2006)	145336.00
2	Additional Capitalisation for 2003-04 (as admitted vide order dated 29.1.2007 in Petition No. 65/2006)	1025.41
3	FERV for 2003-04	0
4	Less: Undischarged liability as on 31.3.2004	1418.00
5	Capital Cost as on 01.04.2004	144943.41

9. During the proceedings, Ms. Seema Sharma, Advocate for the consumer respondent Ms. Mallika Sharma Bezbaruah submitted that the petitioner had not revealed whether pursuant to the transfer of transmission assets to PGCIL with effect from 1.4.1992, the value of all the transmission assets had been de-capitalized from the petitioner's net asset value of the generating station. It was apprehended that there was a likelihood of the consumers being subjected to suffer greater tariff burden by paying tariff to both the petitioner and PGCIL for the same assets.

10. The petitioner vide its affidavit dated 8.10.2007, has submitted a certificate from the chartered accountant which states as follows :

“We have verified the books and accounts of the NEEPCO, and hereby certify that as on 1.4.1992 all the assets in respect of transmission projects have been transferred to and vested into the Power Grid corporation of India Ltd., as per provision of the “National Thermal Power Corporation Ltd., National Hydro Electric Power Corporation Ltd. (Acquisition and Transfer of Power Transmission System) Act, 1993.”

“We also hereby certify that the Gross Block of Assam Gas Based Power Project consists solely of generation assets”

11. In the light of the above certificate, we are satisfied that the tariff is not being charged in respect of the transmission assets transferred to PGCIL and the consumer interests are taken care of.

12. The respondents have also sought reduction of the capital cost of the generating station on pro rata basis on the actual level of maximum generation capacity of the project which is 230 MW against the installed capacity of 291 MW. According to them, since the beneficiaries are paying full capacity charges on the basis of target availability of 80%, below the level of target availability, capacity charges should be on prorata basis. We clarify that the tariff design already takes care of this aspect and therefore, there is no case for review of the capital cost already arrived at.

Additional Capitalisation

13. The petitioner has claimed additional capitalization amounting to Rs. 3137 lakh for the year 2004-05 and Rs. 1827 lakh for the year 2005-06. The details of the additional capitalization claimed by the petitioner are as under:

(Rs. In lakh)			
Details	2004-05	2005-06	Total
a) Balance payments on works	21	30	51
b) Spares : capitalized under approved cost	3106	1772	4878
c) Works/services - Capitalisation under approved cost but under taken after COD	10	34	44
d) Inter – unit Transfer	0	(-)8.99	(-) 8.99
Total additional capitalization claimed	3137	1827	4964

14. It is seen that the petitioner has claimed capital expenditure amounting to Rs. 51 lakh (Rs. 21 lakh in year 2004-05 and Rs. 30 lakh in 2005-06) on account of balance payments including adjustment of Rs. 6.2 lakh towards over-capitalization in the work for Permanent Road and Cooling Tower and of Rs. 21 lakh for difference between weight and sectional measurement of various steel materials used in the Plant Civil Works. The balance payments were made for works in respect of construction of Permanent Roads, Permanent Residential Buildings, Permanent Non-Residential Buildings, Boundary Wall, Water supply and Drainage System, Indoor and Outdoor electrification etc. These expenditures appear to be in order because 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 closing the contract. Further, the petitioner has capitalized certain expenditure for proportionate share of IEDC under these heads. Capitalisation of IEDC is the expenditure other than on tangible capital assets and has been capitalized as per prevailing practice. In view of this, capitalization under these heads is also allowed. Accordingly, the expenditure of Rs. 51 lakh under the head "balance payments" as claimed is allowed to be capitalised.

15. The petitioner has further claimed capitalization of Rs. 3106 lakh in the year 2004-05 as the balance of recommended spares in respect of gas turbine generator and gas booster station purchased under supply contract included in the original scope of works. Rs. 1772 lakh has been claimed for capitalization in 2005-06 on account of slow moving irregular spares in respect of gas turbine generator, gas booster station, steam turbine generator

and electrical switchgear. The admissibility of the amounts claimed is being examined as under:

Capitalization of spares for Rs. 3106 lakh in the year 2004-05

(a) These are the balance spares of 1423.99 Million Japanese Yen forming part of main plant package and included in the RCE-III of Rs. 151557 lakh, excluding WCM, approved by the Central Government. These spares were purchased at a cost of Rs.5803 lakh during the period from 1997-98 to 2000-01 but kept in inventory. An amount of Rs.2697 lakh has been capitalized from 1999-2000 to 2003-04 as submitted by the petitioner in Review Petition No.115/2005. The petitioner was directed to confirm as to whether the spares of Rs. 3106 lakh capitalized during 2004-05 are the balance spares purchased under the main plant package prior to 2003-04 and kept in the inventory. The petitioner vide its affidavit dated 8.10.2007 has confirmed that the total value of recommended spares purchased under the main plant package was Rs.5803 lakh and the utilization of these spares as on 31.3.2004 was Rs. 2697 lakh, leaving a balance of Rs. 3106 lakh in the inventory which was subsequently capitalized in the year 2004-05.

(b) Sub-clause (i) of clause (1) of Regulation 18 of the 2004 regulations provides as under:

“(1) the following capital expenditure with in the original scope of work Subject to actually incurred after the date of commercial

operation and up to the cut off date may be admitted by the commission, subject to prudence check:

(iii) Procurement of initial capital spares in the original scope of work, subject to ceiling specified in regulation 17;”

(c) It is found that that the capitalization of these spares is within the prescribed norm of 4% of the original project cost approved by the Central Government, which is Rs. 151557 lakh excluding WCM. However, the cut-off date for the tariff purpose is prior to 1.4.2004. The spares of Rs. 3106 lakh have been capitalized in the year 2004-05, which is well after the cut-off date. However, these spares form part of recommended spares purchased under the main plant package for Rs. 5803 lakh and has been kept in the inventory. Besides, the petitioner has brought this to the notice of the Commission in Review Petition No.115/2005. Accordingly, we consider this a fit case for invoking our powers under Regulation 14 of the 2004 regulations and allow capitalization of this expenditure.

Capitalization of spares for Rs. 1772 lakh in the year 2005-06:

(a) The petitioner has claimed Rs. 1772 lakh in 2005-06 on account of slow moving irregular spares in respect of gas turbine generator, gas booster station, steam turbine generator and electrical switchgear. The petitioner was directed to furnish the details of these spares along with

price and justification for capitalization thereof and the need for procuring the spares. The petitioner in its affidavit dated 8.10.2007 has only certified that the spares worth Rs.1772 lakh capitalized in the year 2005-06 are not the replenishment of the recommended spares and are fully paid for as on date. Since these spares are not the consumable spares, as confirmed by the petitioner, these spares are being admitted as spares which can be used only in connection with an item of fixed asset and their use is expected to be irregular subject to benefit/gain to be shared with the beneficiaries after capitalization. Since the petitioner has not given any justification/ benefit or gain to be shared with the beneficiaries for its claim, we do not allow additional capitalization of Rs.1772 lakh in 2005-06 on account of slow moving irregular spares.

16. The petitioner has claimed Rs. 44 lakh as additional capitalization on account of capital expenditure incurred after the date of commercial operation on account of the following:

- (a) Laboratory equipment
- (b) Ordinary Tools & Plant
- (c) Furniture & Fixure such as Desk, Table , Benches, Computer Table, Godrej sliding door, Godrej Storewell, Godrej locker, Godrej Chairs, Godrej Filing Cabinet, Godrej Table etc.
- (d) EDP Hardware such as Laptop, 600VA/1000VA UPS, PCS make computer etc.

- (e) Office equipment viz, Fax machine, Water filter cum purifier, Coppiers, Voltage Stabilizer etc.
- (f) Communication Equipment i.e. Mobile, Beetel Phone, cordless Phone etc.
- (g) Books & Manuals
- (h) Misc. Equipment such as Noise pollution Monitor, Refrigerator, vacuum cleaner, Water Purifier etc.

17. The petitioner has furnished asset-wise justification for incurring the expenditure. It is found that the expenditure claimed on most of these items are of minor assets or are part of O&M expenditure. As per clause (3) of Regulation 18 of the 2004 regulations, minor assets bought after the cut-off date are not allowed to be capitalized. However, expenditure incurred in 2004-05 on Laboratory Equipment (Thermo Reactor) for DM plant laboratory has been allowed to be capitalized, considering its utility for efficient operation of the generating station and this additional expenditure is within the scope of approved cost. Accordingly, additional capital expenditure of Rs. 0.78 lakh only is allowed under this head.

18. The petitioner has indicated an amount of Rs. 8.99 lakh as reduction in the capital cost on account of transfer of assets (transformer with rating 100 kVA and above) to KHEP works/services. This has been allowed.

19. Based on the above, the following additional capitalization is allowed for the years 2004-05 and 2005-06:

(Rs. In lakh)

Works with in the scope of approved cost	2004-05	2005-06	Total
a) Balance payments/ Balance works	21	30	51
b) Spares : capitalized under approved cost	3106	0.00	3106
c) Works/services - Capitalisation under approved cost but under taken after COD	0.78	0.00	0.78
d) Inter – unit Transfer	0	-8.99	-8.99
Total additional capitalization	3128	21	3149

20. After taking into account the additional capitalization as stated above, and the undischarged liability as on 31.3.2005 and 31.3.2006, the capital cost as on 1.4.2005 and 1.4.2006 is worked out as follows:

(Rs. In lakh)

	2004-05	2005-06
Opening Capital cost as on 1 st April of the financial year	144943.41	148077.41
Additional capitalization allowed during the year	3128.00	21.00
Add discharged liability as on 31 st March of the financial year	6.00	2.00
Capital Cost as on 31st March of the financial year	148077.41	148100.41

21. Accordingly, the opening capital cost as on 1.4.2005 and 1.4.2006 shall be 148077.41 lakh and Rs. 148100.41 lakh respectively.

22. The petitioner has vide its affidavit dated 4.6.2007 confirmed as under:

“It is certified that as per available records all assets as reflected in the Assets Schedule as on 31.3.2005 and 31.3.2006 are still in use.”

23. Based on the above, the following capital cost is considered for tariff calculation for the period 2004-09:

(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	144943.41	148077.41	148100.41	148100.41	148100.41
Additional Capitalisation allowed	3128.00	21.00	-	-	-
Discharged liability as on 31 st March of the Financial year	6.00	2.00	-	-	-
Capital Cost as on 31 st March of the Financial year.	148077.41	148100.41	148100.41	148100.41	148100.41

TARGET AVAILABILITY

24. 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

DEBT - EQUITY RATIO

25. Regulation 20 of the 2004 regulations as amended on 1.6.2007 provides as under:

(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) xxx

(3) xxx

(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.”

26. The Commission had considered normative debt equity ratio of 50:50 in its order dated 22.8.2005 in Petition No. 33/2003 for the period 1.4.2003 to 31.3.2004. As such, in keeping with the 2004 regulations, the same debt equity ratio is considered for computation of tariff for the tariff period 2004-09.

27. The additional capital expenditure incurred in the years 2004-05 and 2005-06 has been met through funds received for the generating station, i.e., in the normative debt-equity ratio of 50:50. However, keeping in line with the 2004 regulations, debt- equity ratio of 70:30 is considered for the additional capital expenditure for computation of tariff for the tariff period 2004-09.

28. Based on the above, the equity base considered for tariff determination is as under:

(Rs. In lakh)					
	2004-05	2005-06	2006-07	2007-08	2008-09
Opening Balance	72472	73412	73419	73419	73419
Increase/ Decrease due to FERV	0	0	0	0	0
Increase/ Decrease due to Additional Capitalisation	940	7	0	0	0
Closing Balance	73412	73419	73419	73419	73419
Average	72942	73415	73419	73419	73419

RETURN ON EQUITY

29. Clause (iii) of Regulation 21 of the 2004 regulations provides as under:

Return on equity shall be computed on the equity base determined in accordance with regulation 20 @ 14% per annum.

Provided that equity invested in foreign currency shall be allowed a return up to the prescribed limit in the same currency and the payment on this account shall be made in Indian Rupees based on the exchange rate prevailing on the due date of billing.

30. Accordingly, return on equity has been worked out as under:

	(Rs. In lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Equity Base	72942	73415	73419	73419	73419
Rate of Return on Equity	14%	14%	14%	14%	14%
Return on Equity	10212	10278	10279	10279	10279

INTEREST ON LOAN

31. Clause (i) of Regulation 21 of the 2004 regulations provides as under:

(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.

32. Salient features of the computation of interest on loan in this case are as under:

(a) Interest on loan capital has been computed loan-wise on the loans arrived at in the manner indicated in Regulation 20.

(b) 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.

(c) The normative repayment for the period 2004-09 has been worked out as per the following formula:

actual repayment during the year x normative net loan at the beginning of the/year actual net loan at the beginning of the year.

(d) Depreciation admitted for the period has been considered as the annual repayment for the period 2004-09.

(e) Annual trusteeship fees @0.03% and service tax thereon @10.2% against PSU 8th & 9th series bonds have been allowed. Annual trusteeship fees have been added to the yearly interest rate.

(f) 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.

(g) In the present case, some of the GOI loans having higher rate of interest were pre-paid during 2002-03 by taking loans from HUDCO, United Bank of India (UBI) and PSU Bonds of 8th and 9th series. Subsequently, HUDCO loan and the balance GOI loan were repaid by syndicated loan having floating rate of interest on 19.3.2004. Refinancing of HUDCO loan and balance GOI loan by syndicated loan having floating rate of interest has been considered in the calculation.

(h) Besides, one time Arrangers fees amounting to Rs.98.13 lakh has been allowed and is added to the tariff under 'interest on loan' in the year 2004-05 in accordance with the direction of the Appellate Tribunal for Electricity dated 31.10.2007 in Appeal No. 159 of 2005.

33. Details of interest on loan computed for the tariff period is as under:

	(Rs. In lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Gross loan-Opening	72472	74666	74682	74682	74682
Cumulative repayments of Loans upto previous year	20750	27801	34928	42055	49183
Net loan-Opening	51722	46865	39754	32626	25499
Increase/ Decrease due to Addcap	0	0	0	0	0
Increase/ Decrease due to FERV	2194	16	0	0	0
Total	53916	46881	39754	32626	25499
Repayments of Loans during the year	7051	7127	7128	7128	7128
Net loan-Closing	46865	39754	32626	25499	18371
Average Net Loan	49293	43309	36190	29062	21935
Rate of Interest on Loan	7.74%	8.37%	8.80%	8.79%	8.78%
Interest on loan	3817	3623	3184	2555	1927
One -time Financial Charges	98.13	0.00	0.00	0.00	0.00
Interest on loan	3915	3623	3184	2555	1927

DEPRECIATION

34. Sub-clause (a) of clause (ii) of Regulation 21 of the 2004 regulations provides as under:

(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.

35. Cost of land in the present case is Rs. 150 lakh. The gross depreciable value of the asset, excluding the cost of land is $0.9 \times (\text{Rs. } 148100 \text{ lakh} - \text{Rs. } 150 \text{ lakh}) = \text{Rs. } 133155 \text{ lakh}$. Cumulative depreciation and Advance Against

Depreciation recovered in tariff up to 31.3.2004 is Rs. 64271 lakh. The remaining depreciable value as on 1.4.2004 is thus Rs.68884 lakh.

36. The petitioner has furnished the calculation showing the asset-wise depreciation rate of the generating station as 4.82% which is based on gross block value of Rs.146325.00 lakh as on 31.3.2004 (excluding cost of free hold land). The depreciation rates considered in the calculation are as per the depreciation rates specified by the Commission, except in case of 'Water Supply and Drains-plant', which should be 1.8% instead of 3.6% considered by the petitioner. After this modification, the depreciation rate for tariff works out to 4.81% and the same has been considered in the calculation.

37. Based on the above, depreciation during the tariff period has been calculated as under:

		(Rs. In lakh)				
		2004-05	2005-06	2006-07	2007-08	2008-09
Capital cost		146510	148089	148100	148100	148100
Rate of Depreciation		4.81%	4.81%	4.81%	4.81%	4.81%
Depreciation value 90%		133155	135976	135997	135997	135997
Balance depreciation to be recovered in tariff at the beginning of the year		68884	61833	57527	50420	43292
Depreciation recovered in tariff		7051	7127	7128	7128	7128
AAD recovered in tariff		0	0	0	0	0
Depreciation/AAD recovered in Tariff		7051	7127	7128	7128	7128
Cumulative Depreciation/AAD recovered	64271	71322	78449	85577	92704	99832

ADVANCE AGAINST DEPRECIATION

38. Sub- clause (b) of clause (ii) of Regulation 21 of the 2004 regulations provides the methodology for computation of Advance Against Depreciation:

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

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;

Provided further 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.

39. The petitioner has not claimed Advance Against Depreciation. Accordingly, no amount is allowed against this component of the fixed charges of tariff.

O&M EXPENSES

40. The petitioner has claimed the following O&M charges

		(Rs. In lakh)				
Year		2004-05	2005-06	2006-07	2007-08	2008-09
O&M expenses claimed		2753	2855	2980	3099	3221

41. The petitioner's claim is based on the norms specified under the 2004 regulations in respect of small gas turbine stations (without warranty spares) and is in order. The petitioner in its affidavit dated 4.6.2007 has requested for allowing the actual O&M expenses in view of high cost incurred due to small size of units, different type of machines requiring additional inventory, maintenance of gas booster station, remoteness of the project, adverse law

and order in the region and higher cost of material & services. The petitioner has submitted audited cost of actual O&M expenses for the years 2004-05 and 2005-06 as under:

(Rs. In lakh)		
Item	2004-05	2005-06
O&M Expenses	4747.27	3939.68
O&M /MW	16.31	13.54

42. 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 reason to allow the increased O&M expenses right now. However, the petitioner has the liberty to approach the Commission for allowing such abnormal O&M expenses on merits of the case. Meanwhile, the following normative O&M expenses as claimed by the petitioner on the basis the 2004 regulations is considered for the purpose of tariff determination :

(Rs. In lakh)					
Year	2004-05	2005-06	2006-07	2007-08	2008-09
O&M expenses allowed	2753	2855	2980	3099	3221

INTEREST ON WORKING CAPITAL

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

- (i) Fuel cost for one month corresponding to the target availability duly taking into account the mode of operation of the generating station on gas fuel and liquid fuel;

- (ii) Liquid fuel stock for ½ month;
- (iii) Operation and maintenance expenses for one month;
- (iv) Maintenance spares at 1% of the historical cost escalated @ 6% per annum from the date of commercial operation ; and
- (v) Receivables equivalent to two months of fixed and variable charges for sale of electricity calculated on target availability.

44. 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.

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

(a) **Fuel cost**

The petitioner has claimed the following cost for the fuel component in working capital:

(Rs. In lakh)					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Cost of Fuel for 1 months (Gas)	783	783	783	783	783

It is observed that the petitioner has not given the revised figures of fuel cost in its affidavit dated 8.10.2007 according to the revised calculation of base energy charge. However, based on the weighted average GCV and price of fuels as adopted, the fuel component in working capital has been worked out as under:

(Rs. In lakh)					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Fuel Cost for 1 Month (Gas)	794	794	794	797	794

(b) **Liquid Fuel stock**

The petitioner's claim on this account is Nil as no liquid fuel is being used. Accordingly, the amount allowed in this regard is Nil

(c) **O & M Expenses**

O&M expenses for working capital have been worked out for 1 month of O&M expenses approved above for the respective year:

(d) **Maintenance spares**

The petitioner has claimed the following amount towards the cost of maintenance spares for calculating interest on working capital:

(Rs. In lakh)					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Cost of maintenance spares claimed	1040	1102	1168	1238	1312

The petitioner has furnished details for computation of maintenance spares in working capital. It is seen that the petitioner has computed

maintenance spares @ 1% of historical cost of Rs.77696 lakh as on the date of commercial operation (1.4.1999) and escalated @ 6% from COD which have been found in order. Accordingly, the above claim of the petitioner is allowed.

(e) **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)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Variable Charges - full year	9532	9532	9532	9558	9532
Variable Charges -2 months	1589	1589	1589	1593	1589
Fixed Charges - 2 months	4121	4114	4063	3978	3893
Receivables - 2 months	5710	5703	5651	5571	5482

46. 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 2004-05 to 2008-09.

47. Based on the above, interest on working capital has been calculated as under:

	(Rs. In lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Fuel Cost	794	794	794	797	794
O & M expenses	229	238	248	258	268
Spares	1040	1102	1168	1238	1313
Receivables- 2 months	5710	5703	5651	5571	5482
Total Working Capital	7774	7838	7862	7864	7857
Interest Rate-SBI PLR	10.25%	10.25%	10.25%	10.25%	10.25%
Total Interest on Working Capital	797	803	806	806	805

ANNUAL FIXED CHARGES

48. 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
Depreciation	7051	7127	7128	7128	7128
Interest on Loan	3915	3623	3184	2555	1927
Return on Equity	10212	10278	10279	10279	10279
Advance Against Depreciation	0	0	0	0	0
Interest on Working Capital	797	803	806	806	805
O&M Expenses	2753	2855	2980	3099	3221
TOTAL	24728	24687	24376	23866	23359

ENERGY/VARIABLE CHARGES

49. The petitioner claimed the base energy charge of 40.53 paise/kWh in its original tariff petition No.150/2005. However, based on the GCV and price of gas indicated by the petitioner the energy charge worked out to 48.19 paise/kWh. The petitioner was, therefore, directed vide order dated 7.8.2007 to reconcile the figures and submit detailed calculation of the energy charges. In reply, the petitioner vide its affidavit dated 8.10.2007 has submitted the recalculation of base energy charge which works out to 48.18 paise/kWh.

50. The petitioner has considered the under mentioned operational norms and parameters for computation of energy charge are:

<i>Combined Cycle</i> Gross Station Heat Rate(Kcal/kWh)	2250.00
Auxiliary Consumption (%)	3.00
Weighted Average GCV of Gas (Kcal/SCM)	8473.17
Weighted Average Price of Gas (Rs./1000 SCM)	1760.00

51. The petitioner vide affidavit dated 4.6.2007 has submitted the auditor's certificate regarding the landed cost, GCV and actual consumption of Gas from November 2003 to March 2006. However, the values as applicable during the preceding three months viz. January, February and March 2004 have been adopted in these calculations in accordance with the 2004 regulations.

52. Accordingly, the operational norms and parameters considered by the petitioner and as adopted by us for computation of energy charge are as under:

Norms /parameters	
Gross Station Heat Rate(Kcal/kWh)	2250.00
Auxiliary Consumption (%)	3.00
Weighted Average GCV of Gas (Kcal/SCM)	8473.17
Wt. Avg. Price of Gas (Rs./1000 SCM)	1760.20

53. The base rate of energy charge computed for the combined cycle operation based on the data adopted by us are summarized (computation sheet is placed below) below:

Rate of Energy Charge ex-bus per kWh Sent on Gas	Paise/kWh	48.19
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54. The base rate of energy charges have been calculated on base value of GCV, base price of fuel and normative operating parameters as indicated above and are subject to fuel price adjustment. The 2004 regulations provide for fuel price adjustment for variation in fuel price and GCV of fuels as per the following formula:

$$\mathbf{FPA} = \frac{10 \times (\text{SHR}_n) \times (P_m/K_m) - (P_s/K_s)}{(100 - \text{AC}_n)}$$

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

55. FPA shall further be subjected to adjustment for monthly operating pattern adjustment (MOPA) for percentage open cycle operation as certified by REB/SLDC and corresponding to Gross Station Heat Rate of 3225 kCal/kWh and auxiliary energy consumption of 1%, as per formula given below:

$$\mathbf{MOPA} = (\text{BEC} + \text{FPA}) \times \left[\frac{\{(\text{SHR}_{no})/(100 - \text{AC}_{no})\}}{\{(\text{SHR}_{nc})/(100 - \text{AC}_{nc})\}} - 1 \right] \times \text{POCM}/100$$

Where,

- MOPA** - Monthly Operating Pattern Adjustment in Paise/kWh Sent Out
- BEC** - Base Energy Charge as per tariff order in Paise/kWh sent out
- FPA** - Fuel price Adjustment for a month in Paise/kWh Sent out
- SHR_{no}** - Normative Gross Station Heat Rate for Open cycle operation expressed in kCal/kWh (3225 kCal/kWh)
- SHR_{nc}** - Normative Gross Station Heat Rate for Combined cycle operation expressed in kCal/kWh (2250 kCal/kWh)
- AC_{no}** - Normative Auxiliary Consumption for Open cycle operation in percentage (1%)
- AC_{nc}** - Normative Auxiliary Consumption for Combined cycle operation in percentage (3%)
- POCM** - Open cycle generation during the month in percentage

56. Since there is provision for monthly operating pattern adjustment to take care of open cycle operation, there is no need for specifying base energy charges for open cycle operation.

57. The petitioner has sought approval for the reimbursement of the expenditure incurred on publication of notices in the newspapers. The petitioner shall claim reimbursement of the said expenditure directly from the respondents in one installment in the ratio applicable for sharing of annual fixed charges. The petitioner has also sought reimbursement of filing fee paid. A final view regarding 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.

58. In addition to the capacity charges, the petitioner shall be entitled to other charges like income-tax, incentive, surcharge and other cess and taxes in accordance with the 2004 regulations.

59. The petitioner is already billing the respondents on provisional basis in accordance with the Commission's interim directions. The provisional billing of tariff shall be adjusted in the light of final tariff now approved by us.

60. This order disposes of Petition No.150 /2005

Sd/-
(R KRISHNAMOORTHY)
MEMBER

Sd/-
(BHANU BHUSHAN)
MEMBER

New Delhi dated 22nd February, 2008

SUMMARY SHEET				
Name of the Company : NEEPCO				
Name of the Power Station : AGBPP				
Petition No.: 150/2005				
				(Rs. In lakh)
1	Capital Cost of the Project as on 31.3.2003			145336
2	Additional Capitalisation(works)			1025
	For the year 2001-02		0	
	For the year 2002-03		0	
	For the year 2003-04 (Order dated.29.1.07 in Petition N0.65/2006)		1025	
	Total		1025	
3	Additional Capitalisation(FERV)			0
	For the year 2001-02		0	
	For the year 2002-03		0	
	For the year 2003-04		0	
	Total		0	
4	Liabilities provision in Capital Cost		1418	1418
5	Total Capital Cost as on 1.4.2004(1+2+3-4)			144943
6	Means of Finance¹ :			
	Debt	50.00%	72472	
	Equity	50.00%	72472	
	Total	100.00%	144943	
7	Normative Loan as on 1.4.2004			72472
	Normative Loan as on 31.3.2003		72668	
	Normative Loan due to ACE in 2001-04		513	
	Normative Loan due to FERV in 2001-04		0	
	Reduction due to liabilities provision		-709	
	Total Normative Loan as on 1.4.2004		72472	
8	Cumulative Repayment upto 31.3.2009 :			56311
	Repaid upto 31.3.2004 (as per Order dated 7.1.2008 in Petition No.33/2006)		20750	
	From 1.4.2001 to 31.3.2004 (ACE & FERV)		0.00	
	From 1.4.2004 to 31.3.2009		35561	
	Total		56311	
9	Balance Normative Loan to be repaid beyond 31.3.2009 :			16161
10	Depreciation/AAD recovered upto 31.3.09 :			99832
		Dep	AAD	Total
	Recovered upto 31.3.2004	64271	0	64271
	From 1.4.2001 to 31.3.2004 (ACE & FERV)	0	0	0
	From 1.4.2004 to 31.3.2009	35561	0	35561
	Adj.of Cum.Dep.due to decapitalisation	0	0	0
	Total			99832
11	Balance Depreciation to be recovered beyond 31.3.2009 :			33323
	Capital cost for the purpose of Depreciation			145336
	ACE + FERV			4174
	Liabilities provision			1410
	Capital cost as 1.4.2004			148100
	Less: Land Cost			150
				147950
	90% of Capital Cost as above			133155
	Cum. Depreciation to be recovered upto 31.3.2009			99832
	Balance Depreciation to be recovered beyond 31.3.2009			33323