

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram:

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

Petition No. 70/2006

In the matter of

Approval of tariff in respect of Kopili Hydro Electric Project Stage-II (25 MW) of North Eastern Electric Power Corporation Limited, Shillong for the period from 26.7.2004 to 31.3.2009.

And in the matter of

North Eastern Electric Power Corporation Limited

.....**Petitioner**

Vs

1. Assam State Electricity Board, Guwahati
2. Meghalaya State Electricity Board, Shillong
3. Tripura State Electricity Corporation Ltd, Agartala
4. Power & Electricity Department, Government of Mizoram, Aizawal
5. Electricity Department, Government of Manipur, Imphal
6. Department of Power, Government of Arunachal Pradesh, Itanagar
7. Department of Power, Government of Nagaland, Kohima
8. North Eastern Regional Power Committee, Shillong
9. North Eastern Regional Load Despatch Centre, Shillong **Respondents**

The following were present

1. Shri. P.K.Borah, NEEPCO
2. Ms. D. Dey, NEEPCO
3. Shri. B.K.Chakraborty, NEEPCO
4. Shri. D.Choudhary, NEEPCO
5. Shri. A.G.West, NEEPCO
6. Shri. P.K.Agrawal, NEEPCO
7. Shri. P.Mazumdar, NEEPCO
8. Shri. P.K.Hazarika, ASEB
9. Shri. K.Goswami, ASEB
10. Shri. L.Priyaokumar, Electricity Department, Manipur,
11. Shri. M.Jaduswami Singh, Electricity Department, Manipur
12. Shri. W.Rehman, Department of Power, Arunachal Pradesh
13. Shri. A.Gian Chaudhuri, TSECL
14. Shri. K.N.War, MESEB
15. Shri. T.Passah, MESEB

16. Shri. L.K.Kanungo, NERLDC
17. Shri. R.Sutradar, NERLDC
18. Shri. H.M.Sharma, Consumer
19. 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 Kopili Hydro Electric Project Stage-II (25 MW) for the period 26.7.2004 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 Tariff Regulations 2004”).

2. Kopili Hydro Electric Project Stage-II, also known as Khandong Phase-II (hereinafter referred to as “the generating station”) has a single generating unit which utilizes the spill-over/excess water from the existing Khandong reservoir. The scope of works of the generating station includes the construction of an additional power house at Khandong and a by-pass tunnel of 275 meters length. The by-pass tunnel bifurcates from the main tunnel just beyond the surge shaft for which boring was done at the time of construction of the Kopili Hydro Electric Project , Stage-I.

3. The generating station was declared under commercial operation on 26.7.2004. Subsequent to the date of commercial operation, the petitioner filed Petition No.79/2004 for approval of provisional tariff based on the provisional capital expenditure incurred up to the date of commercial

operation. The Commission by its order dated 9.11.2005 allowed Annual Fixed Charges of Rs.1057 lakh from the date of commercial operation on provisional basis with a direction to the petitioner to file a fresh petition for approval of final tariff, based on audited expenditure up to the date of commercial operation and the annual design energy to be approved by CEA. Since approval of the design energy by CEA was delayed, the Commission by its order dated 4.7.2007 allowed the petitioner to file the petition for approval of final tariff by 31.7.2006 based on the audited accounts as on the date of commercial operation with the provisional design energy of 86.3 MUs, pending approval by CEA. The petitioner filed the petition on 28.7.2006 which is being disposed of through the present order.

4. The details of the fixed charges claimed by the petitioner in the present petition are given hereunder:

| Period | (Rs in lakh) | | | | |
|------------------------------|------------------------|----------------|----------------|----------------|----------------|
| | 2004 -05 (Pro rata) | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
| Depreciation | 145.21 | 216.87 | 216.87 | 216.87 | 216.87 |
| Interest on loan | 533.86 | 822.27 | 829.55 | 829.55 | 788.07 |
| Return on Equity | 237.27 | 365.45 | 368.69 | 368.69 | 368.69 |
| Advance against Depreciation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Interest on working capital | 32.74 | 37.45 | 38.35 | 39.10 | 39.17 |
| O&M expenses | 88.25 | 134.54 | 139.92 | 145.52 | 151.34 |
| Total | 1037.34 | 1576.58 | 1593.38 | 1599.73 | 1564.14 |

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

(Rs. in lakh)

| Period | 2004 -05 (Pro rata) | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
|------------------------------------|------------------------|--------------|--------------|--------------|--------------|
| Spares | 58.83 | 91.42 | 96.91 | 102.72 | 108.88 |
| O & M expenses | 10.63 | 11.21 | 11.66 | 12.13 | 12.61 |
| Receivables | 249.96 | 262.76 | 265.56 | 266.62 | 260.69 |
| Total Working Capital | 319.42 | 365.39 | 374.13 | 381.47 | 382.18 |
| Rate of Interest | 10.25% | 10.25% | 10.25% | 10.25% | 10.25% |
| Interest on Working Capital | 32.74 | 37.45 | 38.35 | 39.10 | 39.17 |

Capital cost

6. Regulation 33 of the Tariff Regulations 2004 provides 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 initial capital spares subject to a ceiling norm of 1.5% of the original project cost as on the cut off date.

Provided further 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.

In case of existing generating stations, the project cost admitted by the Commission prior to 1.4.2004 shall form the basis for determination of tariff. ”

7. The petitioner has claimed tariff on the capital expenditure for the tariff period 2004-09 as per the details given hereunder:

(Rs in lakh)

| | 26.7.2004 | 31.3.2005 | 31.3.2006 | 3.1.3.2007 | 31.3.2008 | 31.3.2009 |
|---|-----------|-----------|-----------|------------|-----------|-----------|
| Gross block as certified by the auditor | 7938.20 | 8172.63 | 8326.78 | 8326.78 | 8326.78 | 8326.78 |
| Advances towards land | - | 451.52 | 451.52 | 451.52 | 451.52 | 451.52 |
| Capital cost on which tariff claimed | 7938.20 | 8624.15 | 8778.30 | 8778.30 | 8778.30 | 8778.30 |

8. The original approved cost of the generating station as per Ministry of Power letter dated 27.7.1999 was Rs.7609 lakh, including IDC of Rs.749 lakh at September 1998 price level with the scheduled date of completion as

31.7.2003. The approved project cost was subsequently revised vide Ministry of Power letter dated 2.8.2005 to Rs.9502 lakh, including IDC of Rs.658 lakh.

9. In accordance with the Ministry of Power letter dated 2.8.2005, the generating station was commissioned on 31.12.2003. However, the petitioner has indicated the date of commercial operation as 26.7.2004. In its affidavit dated 30.7.2007, the petitioner has clarified that though the generating station was actually synchronized on 31.12.2003, the trial operation was delayed till 25.5.2004 on account of very low water level in the reservoir during lean season. It is stated that after sufficient water level in the Khandong reservoir was attained, the trial operation was carried out from 26.5.2004 to 29.5.2004. Even after the trial operation, some teething problem was observed in operation of the generating station through MMI/remote control which was rectified by July 2004. Accordingly, the generating station was declared under commercial operation on 26.7.2004. The Commission is satisfied that the delay in declaration of the date of commercial operation of the generating station has occurred due to low reservoir level and the initial teething problems which were beyond the control of the petitioner.

10. There has been time over-run of one year and consequent cost over-run of Rs.1893 lakh for completion of the generating station. The petitioner has explained the reasons for time and cost over-run as under:

(a) **Adverse law and order situation:** - The petitioner has submitted that one engineer was kidnapped during the construction and the employees of

the petitioner as well as the contractor were subjected to frequent threats and physical assault which had adverse effect on the completion of the project.

(b) **Adverse geological formation in the tunnel and tail race:** - The petitioner has submitted that presence of stratum more difficult than anticipated in the tunnel and presence of poor slushy overburden layer sandwiched between relatively good surface clay and rock zone in the tail race area also contributed to delay in completion of the project. In order to overcome the above difficulties, it was decided to use steel structure in place of concrete frames. This decision also led to increase in the quantities of steel and certain additional items of work resulting in cost over-run.

(c) **Factors of variation:** - The petitioner has also placed on record the details of factors of variation which resulted in cost over-run of Rs.1893 lakh which are as under:

| (Rs in lakh) | | | |
|--------------|------------------------|---------|----------------------------------|
| Serial No | Factors of variation | Amount | % variation w.r.t. approved cost |
| 1 | Increase in prices | 673 | 9.81 |
| 2 | Inadequate provision | 1847 | 26.92 |
| 3 | Change in design | 391 | 5.69 |
| 4 | Additional requirement | 717 | 10.45 |
| 5 | Others(excluding IDC) | (-)1646 | (-)23.98 |
| 6 | IDC | (-)0.91 | (-)12.15 |
| 7 | Total | 1893 | 24.86 |

11. Assam State Electricity Board, the first respondent herein, in its reply has submitted that the petitioner should be held fully responsible for the time and cost over-run in completion of the generating station and the original approved cost of Rs.7609 lakh only be allowed for the purpose of tariff.

12. We have considered the matter very carefully and are of the view that the factors influencing escalation in completion cost cited by the petitioner, such as adverse law and order situation, increase in scope of civil works due to bad geological formation in tunnel and tail race are all beyond the control of the petitioner. Moreover, the Govt. of India while approving the completion cost of the generating station had considered these factors and there appears to be no stipulation that the petitioner was responsible for the time and cost over-run of the generating station. Hence, we are allowing tariff on the actual capitalized expenditure incurred by the petitioner till the date of commercial operation of the generating station.

13. The first respondent has submitted that since the maximum output available from the generating station is around 22 MW against the installed capacity of 25 MW, the capital cost of the generating station should be reduced on pro rata basis.

14. The petitioner has explained that as per the results of the studies conducted, it was found that maximum generation of 72 MW was possible from the discharge through the Khandong tunnel, with the existing FRL of Khandong reservoir at EL 719 meter. The petitioner has further submitted that with the installation of 2x 25 MW in Stage-I, there was scope for installation of additional unit of 22 Mw only. However, the petitioner decided to go for an installed capacity of 25 MW of the generating unit to keep parity with the existing units of Stage-I. The petitioner has further submitted that the

generating station would deliver 25 MW when either of the generating units of Stage-I of the generating station is on planned or forced shutdown.

15. In view of the above clarification, we find no justification for pro-rata reduction of capital cost of the generating station as suggested by first respondent. However, we direct that in accordance with the Regulation 45(xviii) of the Tariff regulations, 2004, the maximum available capacity of the generating station for computation of capacity index shall be considered as equivalent to installed capacity of 25 MW and the generating station shall not be entitled to earn incentive without providing peak power of 25 MW.

Initial Spares

16. The petitioner has claimed initial spares amounting to Rs.175 lakh as part of capital expenditure till the date of commercial operation of the generating station. As per Regulation 33 of the Tariff Regulations 2004, the admitted capital expenditure shall include initial spares subject to a ceiling norm of 1.5% of the original project cost as on the cut off date. The claim of the petitioner is beyond the allowable limit of 1.5% of the original project cost as on the cut off date i.e. 31.3.2006. Therefore we have decided to restrict the initial spares to 1.5% of the capital cost as specified in the Tariff Regulations 2004 and accordingly allow an amount of Rs.116.42 lakh towards cost of initial spares.

Infirm power

17. The petitioner has confirmed that no revenue has been generated from the sale of infirm power up to the date of commercial operation of the generating station.

IDC

18. The capital cost claimed by the petitioner as on the date commercial operation of the generating station is Rs.7938.20 lakh, inclusive of IDC amounting to Rs.471 lakh. IDC claimed by the petitioner is found to be in order and has accordingly been allowed to be capitalized.

Other Liabilities

19. The petitioner has also submitted that certain liabilities (not actually paid out) have been included in the gross block of various years of the tariff period. The petitioner by affidavit dated 8.10.2007 has submitted that the liabilities pertaining to capital works in progress (CWIP) as well as other heads like inventory and revenue items were included erroneously in the figures of liabilities which need to be deducted and the reconciled amounts of liabilities be taken into consideration. The details of liabilities (payments not made) after reconciliation considered as a part of capital cost are given in the table below, of the generating station:

(Rs in lakh)

| Date | Liabilities | Liabilities erroneously included in CWIP etc. | Liabilities to be included in the gross block after reconciliation |
|-----------|-------------|---|--|
| 26.7.2004 | 133 | 15 | 118 |
| 31.3.2005 | 199 | 10 | 189 |
| 31.3.2006 | 185 | 3 | 182 |

20. The gross block on the date of commercial operation is allowed for the purpose of tariff for the period 2004-09 as per the details given in the table below:

| (Rs in lakh) | | |
|--------------|---|----------------|
| 1 | Gross block certified by auditor as on date of commercial operation i.e.26.7.2004 | 7938.20 |
| 2 | Liabilities included in the above | 118 |
| 3 | Initial spares included in gross block as on date of commercial operation | 175 |
| 4 | Gross block excluding liabilities and initial spares (1-2-3) | 7645.20 |
| 5 | Permissible Initial spares as on date of commercial operation (limited to 1.5% of the capital cost) | 116.42 |
| 6 | Gross block as on date of commercial operation (4+5) | 7761.62 |

Additional capital expenditure

21. The petitioner has claimed the following additional capital expenditure after the date of commercial operation up to 31.3.2006:

| (Rs in lakh) | |
|--------------|--------------------------------|
| Year | Additional Capital Expenditure |
| 2004-05 | 685.95 |
| 2005-06 | 154.15 |

22. The petitioner has submitted Auditor's certificate certifying the capital cost as on 26.7.2004, 31.3.2005 and 31.3.2006. The capital expenditure incurred at the end of the year of the date of commercial operation (31.3.2005) and during subsequent years, include an amount of Rs. 451.52 lakh as "advance towards land". The petitioner by affidavit dated 8.8.2007 has clarified the reasons for capitalising this amount in the books of account as follows:

"As per the Corporation's accounting policy, amounts spent in connection with the acquisition of land including land compensation and rehabilitation expenses is booked under "advance towards land and has been exhibited under fixed assets under a separate sub-head pending completion of legal formalities . This policy is stated every year in Corporation's annual Report under the "notes on Accounts". The land is already in the possession of the Corporation and for the purpose of tariff, it satisfies the requirement of being an asset in use."

23. The above clarification indicates that the amount spent by the petitioner for acquisition of land has been booked as “advance towards land” and has been kept under a separate sub-head pending completion of all legal formalities. To put it otherwise, the petitioner has not capitalized the advance payment for land pending completion of legal formalities, though the land is under its possession. In our view, the amount of Rs.451.52 lakh towards cost of land cannot be included in the capital cost for the purpose of tariff till the legal formalities are completed. The petitioner is at liberty to claim the said amount as additional capital expenditure as and when the legal formalities are completed and the amount is capitalized.

24. On scrutiny of the works and assets of the petitioner, it is observed that the petitioner’s claim of additional capital expenditure during 2004-05 is on account of advance towards land amounting to Rs.451.52 lakh and balance payments towards power house building and transformer. During the period 2005-06, the claim is on account of balance payments for roads and bridges, power house building, penstock, switch yard equipment, plant & machinery in generating station etc., The petitioner has confirmed that all the assets except Rs.451.52 lakh towards the cost of land have been capitalized. As we have already indicated above that the cost of land can only be capitalized after the legal formalities are completed, we allow the following additional capital expenditure from date of commercial operation except the cost of land till 31.3.2006:

| (Rs in lakh) | |
|--------------|--------------------------------|
| Year | Additional Capital Expenditure |
| 2004-05 | 234.43 |
| 2005-06 | 154.15 |

25. In view of our decision in the preceding paragraphs, we allow the following capital cost during the tariff period 2004-09 for the purpose of tariff:

| (Rs in lakh) | | | | | | |
|--------------|---|----------------|----------------|----------------|----------------|----------------|
| Ser No | Particulars | 2004 -05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
| 1 | Opening gross block | 7761.62 | 7927.54 | 8091.15 | 8091.15 | 8091.15 |
| 2 | Additional capital expenditure | 234.43 | 154.15 | 0.00 | 0.00 | 0.00 |
| 3 | Decapitalisation on account of initial spares and capitalized liabilities | 68.51 | (-) 9.46 | 0.00 | 0.00 | 0.00 |
| 4 | Closing gross block(1+2-3) | 7927.54 | 8091.15 | 8091.15 | 8091.15 | 8091.15 |

Debt-Equity Ratio

26. Clause (2) of Regulation 36 of the Tariff Regulations, 2004, as amended, provides as follows:

“In case of the generating stations for which investment approval was accorded prior to 1.4.2004 and which are likely to be declared under commercial operation during the period 1.4.2004 to 31.3.2009, debt-equity in the ratio of 70:30 shall be considered.”

27. The petitioner has submitted the financial package up to the date of commercial operation, in Form-6 of the tariff petition, as under:

| (Rs in lakh) | | | |
|--------------|--------------------|-----------------------------------|------------------------------|
| Sl.No. | Particulars | Financial package approved by GOI | Financial package as on DOCO |
| 1 | Loan | 3023.00 | 3023.00 |
| 2 | Internal resources | 1893.00 | 329.20 |
| | Total Loan | 4916.00 | 3352.20 |
| 3 | Equity –Domestic | 4586.00 | 4586.00 |
| 4 | Total | 7609.00 | 7938.20 |
| 5 | Debt-Equity ratio | 0.66:1 | 0.66:1 |

28. Ministry of Power, in its letter dated 27.7.1999, while according approval of the completion cost of the generating station has stated that the capital investment will be met by equity and loan in the ratio of 1:1. Ministry of power letter dated 2.8.2005 approving the revised cost of the generating station also refers to the funding of the capital cost in the ratio of 1:1.

29. As against the approved funding pattern, the petitioner has claimed tariff on the gross block and the additional capital expenditure in the debt equity ratio of 70:30. Since the claim of the petitioner is in conformity with the provisions of clause (2) of Regulation 36 of the Tariff Regulations, 2004, the debt-equity ratio of 70:30 is allowed for the purpose of determination tariff for the period from the date of commercial operation till 31.3.2009 and for allocation of additional capital expenditure. Accordingly, the equity portion of the capital cost works out as under:

(Rs in lakh)

| Sl. No | Particulars | 2004 -05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
|--------|---|----------|----------|---------|---------|---------|
| 1 | Opening equity | 2328.49 | 2378.26 | 2427.35 | 2427.35 | 2427.35 |
| 2 | Additional capitalisation | 70.33 | 46.25 | 0.00 | 0.00 | 0.00 |
| 3 | Decapitalisation (Initial spares & capitalized liabilities) | 20.56 | (-) 2.84 | 0.00 | 0.00 | 0.00 |
| 4 | Closing Equity (1+2+3) | 2378.26 | 2427.35 | 2427.35 | 2427.35 | 2427.35 |
| 5 | Average Equity | 2353.37 | 2402.80 | 2427.35 | 2427.35 | 2427.35 |

INTEREST ON LOAN

30. Clause (i) of regulation 38 of the Tariff regulations, 2004 *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 36.

(b) The loan outstanding as on 1.4.2004 shall be worked out as the gross loan as per regulation 36 minus cumulative repayment as admitted by the Commission for the period up to 31.3.2004. The repayment for the period 2004-09 shall be worked out accordingly on normative basis.

(c) The generating company shall make every effort to swap the loan as long as it results in net benefit to the long-term transmission customers. The costs

associated with such swapping shall be borne by the long-term transmission customers.

(d) The changes to the loan terms and conditions shall be reflected from the date of such swapping and benefits passed on to the beneficiaries.

(e) In case any moratorium period is availed of by the transmission licensee, 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.

(f) The generating company shall not make any profit on account of swapping of loan and interest on loan.

31. The petitioner has claimed interest on loan in the following manner:

(a) Gross loan opening has been considered as 70% of the gross block as on closing of the previous financial year or as on the date of commercial operation.

Normative repayment of loan during the year is calculated using formula:

$$\frac{\text{Actual repayment of loan} \times \text{Normative net loan at the beginning of the year}}{\text{Actual net loan at the beginning of the year}}$$

(b) The petitioner has not considered the Syndicated loan in computation of weighted average rate of interest on loan in line with the decision of the Commission in the case of Kopili Hydro Electric Project Stage-I for the tariff period 2001-04. The petitioner has refinanced the GoI loan with syndicated loan prior to the date of commercial operation of the generating station.

(c) On the basis of actual rate of interest on actual average loan, the weighted average rate of interest on loan has been worked out for different years of the tariff period 2004-09.

(d) The weighted average rate of interest on loan for respective years calculated as per above formula has been applied to average notional loan during the year to work out interest on loan.

32. Interest on loan has been calculated out as per details given below:

(a) Details of net outstanding loan as on 26.7.2004, repayment schedule for the period 2004-09, rate of interest as on 26.7.2004, etc. have been taken from loan allocation statement and subsequent submissions of the petitioner for working out weighted average rate of interest.

(b) Gross notional loan has been considered as 70% of the capital cost and cumulative repayment up to the date of commercial operation has been taken as 'nil'.

(c) Tariff has been worked out considering normative loan and normative repayments. Once the normative loan is arrived at, it is considered for all purposes in the tariff. Normative repayment is worked out by the following formula:

$$\frac{\text{Actual repayment of actual loan during the year}}{\text{Opening balance of actual loan during the year}} \times \text{Opening balance of normative loan during the year}$$

(f) Moratorium in repayment of loan is considered with reference to normative loan and if the normative repayment of loan during the year is less than the depreciation including AAD during the year, then depreciation including AAD during the year is deemed as normative repayment of loan during the year.

(g) Weighted average rate of interest on actual loan as worked out as per (a) above has been applied on the notional average loan during the year to arrive at the interest on loan.

(h) The petitioner has refinanced Gol loan with syndicated loan prior to the date of commercial operation. The syndicated loan carries floating rate of interest. The petitioner has considered the Gol loan for calculation of weighted average rate of interest. As the refinancing is beneficial to the beneficiaries in the long run, the syndicated loan has been considered in place of Gol loan.

(i) The syndicated loan carries the floating rate of interest (G-sec+1.20%) and the rate of interest applicable as on 26.7.2004 has been considered in the calculation, subject to mutual settlement between the parties in case of any change/resetting of the interest rates during the tariff period.

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

(Rs in lakh)

| Details of loan | 1.4.2004 to 25.7.2004 | 26.7.2004 to 31.3.2005 | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
|---------------------------|--|---------------------------|---------------|---------------|---------------|---------------|
| Days | (116) | (249) | | | | |
| Syndicated loan | | | | | | |
| Net loan opening | 3023.00 | 3023.00 | 2720.70 | 2418.40 | 2116.10 | 1813.80 |
| Repayment during the year | 0.00 | 302.30 | 302.30 | 302.30 | 302.30 | 302.30 |
| Net loan closing | 3023.30 | 2720.70 | 2418.40 | 2116.10 | 1813.80 | 1511.50 |
| Average loan | 3023.30 | 2871.85 | 2569.55 | 2267.25 | 1964.95 | 1662.65 |
| Rate of Interest | 0.00% | 7.0500% | 7.0500% | 7.0500% | 7.0500% | 7.0500% |
| Interest | 0.00 | 138.12 | 181.15 | 159.84 | 138.53 | 117.22 |
| Repayment schedule | 20 Half yearly installments from 20.9.2004 | | | | | |
| Total Loan | | | | | | |
| Net loan opening | 3023.30 | 3023.30 | 2720.70 | 2418.40 | 2116.10 | 1813.80 |
| Repayment during the year | 0.00 | 302.30 | 302.30 | 302.30 | 302.30 | 302.30 |
| Net loan closing | 3023.30 | 2720.70 | 2418.40 | 2116.10 | 1813.80 | 1511.50 |
| Average loan | 3023.30 | 2871.85 | 2569.55 | 2267.25 | 1964.95 | 1662.65 |
| Rate of Interest | 0.00% | 7.0500% | 7.0500% | 7.0500% | 7.0500% | 7.0500% |
| Interest | 0.00 | 138.12 | 181.15 | 159.84 | 138.53 | 117.22 |

34. The interest on notional loan by applying weighted average rate of interest has been computed as under:

COMPUTATION OF INTEREST ON LOAN

(Rs in lakh)

| | 2004 -05 (Pro rata) | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
|---|--------------------------------|----------------|----------------|----------------|----------------|
| Gross opening loan | 5433.13 | 5549.28 | 5663.81 | 5663.81 | 5663.81 |
| Cumulative repayments up to previous year | 0.00 | 543.31 | 1099.53 | 1670.07 | 2240.60 |
| Net opening loan | 5433.13 | 5005.96 | 4564.27 | 3993.74 | 3423.20 |
| Addition due to capitalisation | 164.10 | 107.91 | 0.00 | 0.00 | 0.00 |
| Decapitalisation on account of initial spares and capitalized liabilities | 47.96 | (-) 6.62 | 0.00 | 0.00 | 0.00 |
| Repayments during the year | 543.31 | 556.22 | 570.53 | 570.53 | 570.53 |
| Net loan closing | 5005.96 | 4564.27 | 3993.74 | 3423.20 | 2852.67 |
| Average loan | 5219.55 | 4785.12 | 4279.01 | 3708.47 | 3137.94 |
| Weighted average Rate of Interest on loan | 7.0500% | 7.0500% | 7.0500% | 7.0500% | 7.0500% |
| Interest on loan | 251.03 | 337.35 | 301.67 | 261.45 | 221.22 |

DEPRECIATION

35. Sub-clause (a) of clause (ii) of Regulation 38 of the Tariff regulations, 2004 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 value 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 capitalisation 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.

36. The petitioner has claimed depreciation at the weighted average rate of depreciation on the capital expenditure claimed by it. The weighted average depreciation rate of 1.77% for the first year has been derived on pro rata basis for 249 days i.e from the date of commercial operation to 31.3.2005 and thereafter it has claimed depreciation at the rate of 2.6045% up to 2008-09.

37. It is observed that the admitted capital cost as on 26.7.2004 and thereafter differs from the capital cost considered by the petitioner for working out the weighted average rate of depreciation. Also, the head-wise details of the undischarged liabilities are not available in order to arrive at the weighted average rate of depreciation. Hence, the depreciation rate arrived at on the capital cost considered by the petitioner as on the date of commercial operation has been taken for determining the weighted average rate of depreciation.

38. Accordingly, depreciation of the generating station has been worked out as under:

(Rs in lakh)

| | | 2004 -05 (Pro rata) | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
|----------------------------------|---------|------------------------|---------------|---------------|---------------|---------------|
| Rate of depreciation | 2.6045% | | | | | |
| Depreciable value | 90% | 7060.12 | 7208.41 | 7282.04 | 7282.04 | 7282.04 |
| Balance useful life of the asset | | - | - | - | - | - |
| Remaining depreciable value | | 7060.12 | 6516.81 | 6110.17 | 5617.41 | 5051.03 |
| Depreciation | | 139.38 | 208.60 | 210.73 | 210.73 | 210.73 |

ADVANCE AGAINST DEPRECIATION

39. Sub-clause (b) of clause (ii) of Regulation 38 of the Tariff regulations, 2004 provides as under:

“..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 38 (i) subject to a ceiling of 1/10th of loan amount as per regulation 36 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”.

40. The petitioner has considered Gol loan for the purpose of Advance Against Depreciation. Since repayment of this loan becomes due from 2008-09, the petitioner’s claim for Advance Against Depreciation is considered as ‘nil’. However, the petitioner has refinanced the Gol loan with syndicated loan which is due for repayment from 20.9.2004. Accordingly, Advance Against Depreciation has been worked out on the basis of the refinanced syndicated loan from the date of commercial operation of the generating station till 31.3.2009 as per the details given below:

(Rs in lakh)

| | 2004 -05 (Pro rata) | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
|--|------------------------|---------------|---------------|---------------|---------------|
| 1/10th of Gross loan | 543.31 | 554.93 | 556.38 | 556.38 | 556.38 |
| Repayment of loan | 543.31 | 556.22 | 570.53 | 570.53 | 570.53 |
| Minimum of above | 543.31 | 554.93 | 566.38 | 566.38 | 566.38 |
| Depreciation during the year | 139.38 | 208.60 | 210.73 | 210.73 | 210.73 |
| Difference(A) | 403.93 | 346.32 | 355.65 | 355.65 | 355.65 |
| Cumulative repayment of the loan | 543.31 | 1099.53 | 1670.07 | 2240.60 | 2811.13 |
| Cumulative Depreciation/AAD | 139.38 | 751.92 | 1308.98 | 1875.36 | 2441.74 |
| Difference(B) | 403.93 | 347.61 | 361.09 | 365.24 | 369.40 |
| Advance Against Depreciation Minimum of (A) and (B) | 403.93 | 346.32 | 355.65 | 355.65 | 355.65 |

RETURN ON EQUITY

41. Clause (iii) of Regulation 38 of the Tariff Regulations, 2004, provides that return on equity shall be computed on the equity base determined in accordance with regulation 36 @ 14% per annum. Equity invested in foreign currency is to be allowed a return 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.

42. The petitioner has claimed return on equity @ 14% on 30% equity of the capital cost, for the period from 26.7.2004 to 31.3.2009.

43. In accordance with the provisions of the Tariff Regulations, 2004, the return on equity has been calculated as under:

(Rs in lakh)

| Particulars | 2004 -05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
|----------------------|----------|---------|---------|---------|---------|
| Return on Equity@14% | 224.76 | 336.39 | 339.83 | 339.83 | 339.83 |

O&M EXPENSES

44. Clause (iv) (c) of Regulation 38 of the Tariff regulations, 2004 pertaining to O & M expenses of hydro stations states as under:

“ In case of hydro electric generating stations declared under commercial operation on or after 1.4.2004, the base operation and maintenance expenses shall be fixed at 1.5% of the actual capital cost as admitted by the Commission, in the year of commissioning and shall be subject to an annual escalation of 4% per annum for the subsequent years.”

45. The petitioner has claimed the following O&M expenses for the period 2004-09:

| Period | (Rs in lakh) | | | | |
|--------------|--------------|---------|---------|---------|---------|
| | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
| O&M Expenses | 88.25 | 134.54 | 139.92 | 145.52 | 151.34 |

46. Based on the methodology, specified by the Commission, O&M expenses @ 1.5% of the admitted capital cost as on the date of commercial operation works out to Rs.116.42 lakh. O&M expenses for 249 days of operation during 2004-05 works out to Rs.79.42 lakh. Further, escalation for the year 2005-06 has been worked out on pro rata basis for the days of operation during the previous year. For the period 2006-07 to 2008-09, the O&M expenses have been calculated by allowing escalation of 4% per annum. Accordingly, O&M expenses allowed for calculation of tariff for the period 2004-09 is as under:

| Period | (Rs in lakh) | | | | |
|--------------|-----------------------|---------|---------|---------|---------|
| | 2004-05 (Pro rata) | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
| O&M Expenses | 79.42 | 119.60 | 124.39 | 129.36 | 134.54 |

INTEREST ON WORKING CAPITAL

47. In accordance with clause (v) of Regulation 38 of the Tariff Regulations 2004, working capital in case of hydro generating stations shall cover:

- (i) Operation and Maintenance expenses for one month;
- (ii) Maintenance spares @ 1% of the historical cost escalated @ 6% per annum from the date of commercial operation; and
- (iii) Receivables equivalent to two months of fixed charges for sale of electricity, calculated on normative capacity index.

48. The Tariff Regulations, 2004 further provides that 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.

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

- (a) **Maintenance Spares:** The petitioner has claimed maintenance spares for calculation of Interest on Working Capital as under:

| (Rs in lakh) | | | | | |
|--------------------|---------|---------|---------|---------|---------|
| Period | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
| Maintenance spares | 58.85 | 91.42 | 96.91 | 102.72 | 108.88 |

As per the methodology specified in the Tariff Regulations, 2004, maintenance spares @ 1% of admitted capital cost on date of commercial operation works out to Rs.77.62 lakh. The cost of maintenance spares for 249

days of operation during 2004-05 works out to Rs.52.95 lakh. Further, escalation for the year 2005-06 has been worked out on pro rata basis for 249 days operation during the previous year. The cost of maintenance spares for the period 2006-07 to 2008-09 have been calculated by allowing escalation of 6% per annum. Accordingly, the cost of maintenance spares allowed for the tariff period 2004-09 is as under:

| Period | (Rs in lakh) | | | | |
|--------------------|--------------|---------|---------|---------|---------|
| | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
| Maintenance spares | 52.95 | 80.79 | 85.64 | 90.78 | 96.23 |

(b) **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.

(c) **Receivables:** The receivables have been worked out on the basis of two months of the annual fixed charges.

50. The average SBI PLR of 10.25% as on 26.7.2004 has been considered as the rate of interest on working capital during the tariff period.

51. The necessary details in support of calculation of interest on working capital are given below:

Calculation of interest on Working Capital

| | (Rs in lakh) | | | | |
|--------------------|-----------------------|--------------|--------------|--------------|--------------|
| | 2004-05 (Pro rata) | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
| Maintenance spares | 52.95 | 80.79 | 85.64 | 90.78 | 96.23 |
| O&M expenses | 9.70 | 9.97 | 10.37 | 10.78 | 11.21 |
| Receivables | 274.14 | 230.19 | 227.57 | 221.69 | 215.85 |
| Total | 336.79 | 320.95 | 323.58 | 323.25 | 323.29 |
| Interest @ 10.25% | 23.55 | 32.90 | 33.17 | 33.13 | 33.14 |

ANNUAL FIXED CHARGES

52. The annual fixed charges from the date of commercial operation to 31.3.2009 allowed in this order are summed up in the table below:

| | | Rs in lakh) | | | |
|------------------------------|-----------------------------------|----------------|----------------|----------------|----------------|
| | 26.7.2004 to 31.3.2005 | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
| Depreciation | 139.38 | 208.60 | 210.73 | 210.73 | 210.73 |
| Interest on Loan | 251.03 | 337.35 | 301.67 | 261.45 | 221.22 |
| Return on Equity | 224.76 | 336.39 | 339.83 | 339.83 | 339.83 |
| Advance Against Depreciation | 403.93 | 346.32 | 355.65 | 355.65 | 355.65 |
| Interest on Working Capital | 23.55 | 32.90 | 33.17 | 33.13 | 33.14 |
| O&M Expenses | 79.42 | 119.60 | 124.39 | 129.36 | 134.54 |
| Total | 1122.08 | 1381.17 | 1365.44 | 1330.15 | 1295.11 |

Design Energy

53. The petitioner has submitted that the annual design energy of the Stage I and II of the generating station shall increase from the existing level of 277.65 MUs to 363.95 MUs after commissioning of the generating station, thereby adding 86.30 MUs to the annual energy generation. It has also been submitted that the existing annual design energy of Kopili HEP shall increase from 969.88 MUs to 1186.1 MUs with combined tail water discharge of the Stage I and Stage II generating stations, thereby adding 216.26 MUs. Thus, the cumulative benefits on account of commissioning of the generating station work out to 302.56 MUs annually. However, it has been submitted that the proposal for approval of design energy of the generating station is still under the consideration of the Central Electricity Authority.

54. Pending approval of the design energy by the CEA, we are inclined to allow the petitioner to claim tariff considering the annual design energy of 86.30 MUs. The petitioner is, however, advised to make all out efforts to obtain the necessary approval of the CEA at the earliest possible.

55. 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 Tariff Regulations, 2004.

56. The petitioner is already billing the respondents on provisional basis in accordance with the order dated 9.11.2005 in Petition No. 79/2004. The provisional billing of tariff shall be adjusted in the light of the final tariff now approved by us.

57. This order disposes of Petition No. 70/2006.

Sd/-
(R.KRISHNAMOORTHY)
MEMBER

Sd/-
(BHANU BHUSHAN)
MEMBER

New Delhi dated this 1st day of January, 2008.