

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram:

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

Petition No. 65/2001

In the matter of

Approval of Generation Tariff of Bairasiul HE Project

And in the matter of

National Hydroelectric Power Corporation Ltd.

..... **Petitioner**

Vs

1. The Chairman, Punjab State Electricity Board, Patiala
2. The Chairman, Haryana Vidyut Prasaran Nigam Ltd., Panchkula
3. The Chairman, Delhi Vidyut Board, Delhi
4. The Chairman, Uttar Pradesh Power Corporation Ltd., Lucknow
5. The Chairman & Managing Director, Uttaranchal Power Corporation, Dehradun
6. The Chairman, Rajasthan Rajya Vidyut Prasaran Nigam Ltd., Jaipur
7. The Chairman, Himachal Pradesh State Electricity Board, Shimla
8. The Principal Secretary, Power Development Deptt., Jammu (J&K), Srinagar
9. The Chief Engineer & Secretary, Engineering Deptt.,

Chandigarh

...**Respondents**

The following were present:

1. **Shri B. Dutta, Sr. Advocate for NHPC**
2. **Shri Sachin Datta, Advocate, NHPC**
3. **Shri S.K. Agarwal, CE (T), NHPC**
4. **Shri D.S. Ahluwalia, Sr. Manager (F&A), NHPC**
5. **Shri H.D. Khunteta, GM (F&A), NHPC**
6. **Shri N.K. Shekhawat, AO, NHPC**
7. **Shri Rupesh Sood, DM(F&A), NHPC**
8. **Shri Ansuman Ray, TE (Comml.), NHPC**
9. **Shri S.K. Gupta, Engineer, NHPC**
10. **Shri S.K. Meena, TE (Electrical), NHPC**
11. **Er. P. Kumar, NHPC**
12. **Shri R.K. Arora, XEN (T), HVPNL**
13. **Shri V.K. Gupta, SE, RRVNL**

**ORDER
(DATE OF HEARING 2.1.2002)**

National Hydroelectric Power Corporation Ltd. has filed the petition for approval of tariff for Bairasiul Hydroelectric Project Stage-I (Bairasiul HEP) (3 x 66 MW=198 MW) for the period from 1.4.2001 to 31.3.2004 based on terms and conditions of tariff notified by the Commission on 26.3.2001.

2. The revised investment approval for execution of Bairasiul HEP (3 x 66 MW) which has been under commercial operation since 1.4.1982 was accorded by Ministry of Power vide its letter dated 14.5.1999 at a cost of Rs.148.08 crores including IDC of Rs. 13.87 crores. Ministry of Power conveyed further approval for Renovation and Moderanisation of the project at a cost of Rs. 19.96 crores, including IDC of Rs. 2.21 crores vide its letter

dated 20.5.1999. Thus, the approved cost of the project is Rs. 168.04 crores, including IDC.

3. Presently, Bairasiul HEP is on single part tariff of 42 paise/kWh, which is charged on the basis of Bulk Power Supply Agreement, signed between the petitioner and the respondents. The petitioner was permitted to continue billing to the beneficiaries at the provisional tariff, of 42 paise/kWh vide the Commission's order dated 29 11.1999 in Petition No. 18/1999

4. Consequent to notification of terms and conditions of tariff by the Commission on 26.3.2001, applicable with effect from 1.4.2001, the petitioner filed this petition for approval of tariff in respect of Bairasiul HEP for the period from 1.4.2001 to 31.3.2004 based on the terms and conditions of tariff contained in the said notification dated 26.3.2001.

CAPITAL COST

5. The beneficiaries in Northern Region are paying single part tariff @ 42 paise/kWh as per the Bulk Power Supply Agreement. The petitioner has furnished the details in support of the agreed tariff, which is based on capital cost of Rs.155.66 crores as on 31.3.1996. However, as per the details of capital cost furnished in the petition the capital cost of Bairasiul HEP works out to Rs.155.46 crores. Therefore, the capital cost as on 31.3.1996 has been taken as 155.46 crores. The additional capitalisation allowed during

the years 1996-1997 to 2000-2001 has been added to this capital cost of Rs. 155.46 crores to arrive at gross block as on 31.3.2001 for the purpose of computation of tariff.

ADDITIONAL CAPITALISATION

6. In the tariff proposal submitted by the petitioner, it has taken into account additional capitalisation since 1983-84. However, since we are taking the gross block as on 31.3.1996 as the base, we have considered the petitioner's claim for additional capitalisation from 1996-1997 to 2000-2001 only. The details regarding additional capitalisation claimed by the petitioner during this period and those allowed and disallowed are given below:

(Rs. in crores)

Year	Additional Capitalisation claimed	Additional Capitalisation allowed	Additional Capitalisation disallowed
1996-1997	0.20	0.20	0.00
1997-98	(-) 0.03	(-)0.03	0.00
1998-99	0.52	0.45	0.07
1999-2000	17.63	17.07	0.56
2000-2001	5.82	5.51	0.31
Total	24.14	23.20	0.94

7. Accordingly, for the purpose of tariff, gross block of Rs 178.66 crores as on 31.3.2001 has been considered.

DEBT-EQUITY RATIO

8. In accordance with the terms and conditions of tariff notified by the Commission on 26.3.2001, the capital expenditure of the project should be financed as per the approved financial package set out in the techno-economic clearance of CEA or as approved by an

appropriate independent agency. As has been noticed above, the respondents are presently paying single part tariff based on capital cost of Rs.155.46 crores as on 31.3.1996. In means of financing of this capital cost, original debt, additions and repayments up to 1995-96 have been considered as furnished by the petitioner in the petition while equity has been taken as the balancing figure. The additional capitalization of Rs 23.20 crores allowed by us for the period from 1996-97 to 2000-2001 has been taken into consideration for the purpose of tariff. Financing of additional capital expenditure during the respective years has been considered from addition of Government of India loan and the remaining amount has been considered as equity for the purpose of determination of tariff. The break up of debt and equity considered each year for tariff is Rs. 25.00 crores (loan taken during the year 2000-2001) and Rs. 77.85 crores respectively.

REPAYMENT OF LOAN AND INTEREST ON LOAN

9. As provided in the Commission's notification dated 26.3.2001, interest on loan capital is to be computed on the outstanding loan, duly taking into account the schedule of repayment as per the financial package approved by CEA or an appropriate independent agency, as the case may be. The interest on loan has been computed based on loan amount, repayment schedule, adjustments, if any, of various loans up to 2003-2004 and actual interest rate indicated by the petitioner in the petition. The entire amount of initial loan got repaid during 1999-2000. During this year, a loan of Rs.25.00 crores, has been shown. The year-wise interest on loan payable by the respondents for various years is as under:-

(Rs. in crores)	
2001-2002	3.12
2002-2003	3.12
2003-2004	3.12

DEPRECIATION

10. As per the terms and conditions of tariff notified by the Commission, the rate base for the purpose of depreciation is the historical cost of the asset. The depreciation is to be calculated as per the straight line method. Further, the total depreciation to be recovered in tariff during the life of the project should not exceed 90% of the approved original cost, which shall include additional capitalisation allowed by the Commission. An amount of Rs.61.60 crores of depreciation recovered in tariff up to the year 2000-2001 has been considered as per information furnished by the petitioner in the petition. The weighted average depreciation rate for the tariff period has been calculated by taking the individual assets of gross block as on 31.3.2001 as given in the petition and by applying the respective depreciation rates as per the Commission notification dated 26.3.2001. The weighted average rate of depreciation considered for the purpose of tariff is 2.47%. Based on the application of above weighted average depreciation rate on the gross-block of Rs.178.66 crores, the depreciation payable for different years has been worked out and is indicated below:

(Rs. in Crores)	
2001-2002	4.41
2002-2003	4.41
2003-2004	4.41

ADVANCE AGAINST DEPRECIATION

11. The Commission in the norms of tariff notified on 26.3.2001 has made a provision for advance against depreciation, in addition to allowable depreciation. Advance against depreciation is permitted wherever original scheduled loan repayment exceeds the depreciation allowable. The amount of advance against depreciation is to be worked out by applying the ceiling of 1/12th of the original loan amount less depreciation allowed as provided in the notification-dated 26.3.2001. The petitioner has not claimed the advance against depreciation. Accordingly, no advance against depreciation for different years of the tariff period in this case is being allowed.

RETURN ON EQUITY

12. As per the notification issued by the Commission on terms and conditions of tariff, return on equity is to be computed on the paid up and subscribed capital @ 16%. The year-wise return on equity on amount of Rs. 77.85 crores works out as under:

	(Rs. in Crores)
2001-2002	12.46
2002-2003	12.46
2003-2004	12.46

O&M EXPENSES

13. The Commission has prescribed the procedure for arriving at base O&M expenses for the year 1999-2000 in the notification issued on 26.3.2001. It provides that O&M

expenses including insurance for the existing stations belonging to the petitioner, which have been in operation for 5 years or more in the base year of 1999-2000 shall be derived on the basis of actual O&M expenses, excluding abnormal O&M expenses, if any, for the years 1995-96 to 1999-2000, duly certified by the statutory auditors. The average of actual O&M expenses for the years 1995-96 to 1999-2000 are to be considered as O&M expenses for the year 1997-98, which are to be escalated twice @ 10% per annum to arrive at O&M expenses for the base year 1999-2000 in accordance with the given formula. The base O&M expenses for the year 1999-2000 are to be further escalated @ 6% per annum to arrive at permissible O&M expenses for the relevant year. O & M expenses are considered to be abnormal when increase in a particular year is more than 20% over those of the previous year.

14. The details of O&M expenses for the years 1995-96 to 1999-2000 as furnished by the petitioner are as given here under:

Year	O & M expenses (Rs.in crores)	Percentage increase
1995-1996	11.38	-
1996-1997	13.64	19.90%
1997-1998	19.39	42.17%
1998-1999	21.37	10.20%
1999-2000	22.09	3.36%

15. It is observed that increase in O&M expenses during the year 1997-98 is abnormal. It has been explained on behalf of the petitioner that increase in O&M expenses during 1997-1998 was mainly on account of increase in employee cost and

insurance. It is stated by the petitioner that expenditure on account of salaries and wages and staff welfare expenses has increased from Rs.9.3 crores in 1996-1997 to Rs.14.6 crores in 1997-1998. According to the petitioner, the above increases are consequent to implementation of recommendations of the Fifth Pay Commission in respect of its employees governed under Central DA pattern and also revision of wages of staff with effect from 1.1.1997 in respect of employees governed by Industrial DA pattern. The petitioner has further explained that besides wage revision, increase in liabilities on account of liberalised retirement benefits due to upward revision of gratuity limit to Rs.3.5 lakhs and implementation of medical scheme in the post-retirement period etc. also account for increase in expenditure under the head "employee cost". The reason given by the petitioner in support of increase of expenses under the head "insurance" is on account of policy of insurance, insurance coverage of all fixed assets of the project.

16. The petitioner has furnished the details of staff welfare expenses under the head "employee cost", which includes payments made on account of productivity linked incentive under Section 31A of Payment of Bonus Act, 1965. It was emphasized on behalf of the petitioner that the payments on account of productivity linked incentive accounted for in O & M expenses for the respective year as these are the obligatory statutory expenses. Section 31A of Payment of Bonus Act makes special provision with respect to payment of bonus linked with production or productivity. It applies where the employees have entered into an agreement or settlement with their employer for payment of annual bonus linked with production or productivity. The minimum statutory bonus payable under Section 10 of Payment of Bonus Act is the obligatory expense that

qualifies for inclusion in O&M expenses. Therefore, in our opinion, the payments on account of productivity linked incentive do not qualify to be accounted under O&M expenses. The payment of productivity linked incentive pre-supposes increase in production or productivity. On account of such increases in production or productivity, the petitioner also earns incentive from the beneficiaries, the present respondents. The beneficiaries who pay or are liable to pay incentive on increased production or productivity cannot be saddled with additional burden in the form of O&M expenses. We are of the considered view that payments on account of productivity linked incentive should be made by the petitioner out of the incentive earned by the petitioner company as a result of increase in productivity. On these considerations, we allow O&M expenses for the respective year claimed by the petitioner, except the following payments on account of productivity linked incentive.

(Rs. in Crores)

1995-96	0.23
1996-97	0.25
1997-98	0.30
1998-99	0.42
1999-2000	0.33

17. In addition, the following amounts indicated in O&M expenses but not claimed, have also not been allowed:

(Rs. in Crores)

Year	Siltation	Over-staffing
1995-96	0.14	0.60
1996-97	0.25	0.67
1997-98	0.11	0.75
1998-99	0.11	0.22
1999-2000	1.81	0.00

18. The amounts of Rs.0.07 crores and Rs.0.56 crores not allowed for capitalization during 1998-99 and 1999-2000 respectively in terms of para 6 above, have been added to O&M expenses for the respective year after verifying prudence of such expenditure. In the light of the foregoing O&M expenses for the years 1995-97 to 1999-2000 considered for the purpose of computation of tariff re as under:

(Rs. in Crores)	
1995-96	10.41
1996-97	12.47
1997-98	18.23
1998-99	20.69
1999-2000	20.51
Average O&M expenses from 1995-96 to 1999-2000, representing expenses for 1997-98	16.46
Basic O&M expenses for 1999-2000	19.92

19. Based on the above, O&M expenses for different years of the tariff period allowed by us are given here under:

(Rs. in Crores)	
2001-2002	22.39
2002-2003	23.73
2003-2004	25.15

INTEREST ON WORKING CAPITAL

20. As per the Commission's notification 26.3.2001, interest on working capital covers the following:

- (a) Operation and Maintenance expenses for one month;

- (b) Maintenance spares at actuals but not exceeding one year's requirements less value of one fifth of initial spares already capitalized for the first five years;
- (c) Receivables equivalent to two months of average billing for sale of electricity.

21. The above components have been taken into account for the purpose of calculation of working capital. O&M expenses for one month considered for the purpose are as decided by us in Para 19 above. Spares have been considered as given in the petition and are subject to adjustment, based on actuals, but not exceeding one year's requirement. Receivables for two months have been worked out on the basis of total billing charges calculated based on the different component of tariff decided by us.

22. The details considered in support of calculation of working capital are as under :

(Rs. in crores)

Particulars	2001-02	2002-03	2003-04
O&M expenses for one month	1.87	1.98	2.10
Spares	4.46	4.73	5.01
Receivables for two months	7.33	7.56	7.81
Total	13.66	14.27	14.92

23. The interest rate for the purpose of calculating interest on working capital is the cash-credit rates prevailing at the time of tariff filing. Accordingly, the annual average Prime Lending Rate of State Bank of India of 11.5% as applicable at the beginning of the tariff period, that is, 1.4.2001, has been taken for the purpose of calculating interest on working capital instead of interest @ 16.65% claimed by the petitioner. The interest on working capital to be recovered from the respondents is as per the following details:

(Rs. in crores)	
2001-2002	1.57
2002-2003	1.64
2003-2004	1.72

TOTAL FIXED CHARGES

24. The revised fixed charges payable by the respondents to the petitioner year-wise are as under:

(Rs. in crores)			
Particulars	2001-02	2002-03	2003-04
Interest on Loan	3.12	3.12	3.12
Interest on Working Capital	1.57	1.64	1.72
Depreciation	4.41	4.41	4.41
Advance Against Depreciation	0.00	0.00	0.00
Return on Equity	12.46	12.46	12.46
O&M Expenses	22.39	23.73	25.15
Total	43.95	45.36	46.86

25. In accordance with the Commission's notification dated 26.3.2001, the annual fixed charges are to be divided into capacity charges and primary energy charges. The annual fixed charges are indicated in para 24 of this order. The primary energy charges are to be computed in accordance with clause 3.5.3 of the Commission's notification. The capacity charge shall then be computed as indicated below:

$$\text{Capacity Charges} = (\text{Annual fixed charges} - \text{primary energy charges})$$

PRIMARY ENERGY CHARGES

26. As per the notification dated 26.3.2001, the primary Energy Charges are to be worked out on the basis of paise per kWh rate ex-bus energy scheduled to be sent out from the Generating Station after adjusting for the free power delivered to the home state.

27. Rate of Primary Energy, is to be taken as 90% of the lowest variable charges of the central sector thermal power station of the region concerned. The primary energy charges are computed based on the primary energy rate and saleable energy of the project. This rate is also the rate to be used in merit order dispatch of the plants. Secondary Energy Rate is to be equal to Primary Energy Rate.

28. The lowest variable charge of Central Sector Thermal Stations of Northern Region was found to be varying on a month to month basis. The petitioner has calculated the Primary Energy Rate of the hydro stations for the first year of tariff period namely 2001-02 as 90% of average of preceding 12 months (i.e. the year 2000-01) lowest variable charge of Central Sector Thermal Power Stations of Northern Region. We agree with the methodology adopted by the petitioner for calculation of the rate of primary energy which is reproduced below. The lowest variable charge for the year 2000-01 has been worked out to 60.66 paise per kWh. The primary energy rate applicable during 2001-02 for the energy supplied from Bairasiul HEP shall be 54.59 paise per kWh (90% of 60.66 paise per kWh). The details in support of primary energy rate arrived at are given in the Table below :

TABLE

Barasiul H.E.P Calculation of Primary Energy Rate											
VARIABLE CHARGES OF THE CENTRAL SECTOR THERMAL POWER STATIONS OF NORTHERN REGION (Paise/Kwh)											
STATION	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV	DEC	JAN	FEE
SINGRAULI	63.44	59.31	61.14	62.26	61.01	60.09	61.06	61.76	60.92	63.60	6
RIHAND	65.49	60.15	60.50	62.27	59.39	63.87	59.03	58.67	59.90	58.08	6
FGUPTS	94.56	94.84	92.86	94.82	100.24	100.75	97.22	91.54	96.60	96.52	9
NCTPS	143.66	147.76	140.56	134.90	134.26	134.93	133.23	133.50	128.58	142.64	14
ANTA GPS	93.42	93.87	93.85	93.30	93.30	93.30	92.87	92.87	92.87	93.40	9
AURAIYA GPS	96.51	96.86	97.10	96.15	96.15	96.12	95.62	95.63	95.61	96.26	9
DADRI GAS	95.48	95.94	95.71	95.01	95.01	95.01	94.48	94.48	94.48	94.14	9
FGUPTS-II	217.94	216.36	213.99	215.96	219.73	221.67	218.6	212.92	218.08	219.98	22
Average Lowest Rate for the year (P/ Kwh)= (63.44 + 59.31+ 60.50 + 62.26 + 59.39 + 60.09 + 59.03 + 58.67 + 65.67) = 727.88 / 12 = 60.66 P/ Kwh											
90% of Average lowest rate for the year 2000-01 = 54.59 p/ kwh											

29. The Primary Energy Rate of 54.59 paise per kWh which pertains to the year 2001-02 shall remain constant throughout the tariff period for the purpose of payment of incentive/disincentive relating to the capacity index.

30. The Primary Energy Rates for the years 2002-03 and 2003-04 shall be determined based on 90% of average of the 12 months' lowest variable charges of Central Sector Thermal Stations of Northern Region for the years 2001-02 and 2002-03 respectively by the petitioner in consultation with the respondents. No petition for this purpose is required to be filed. However, in case the parties are unable to agree to primary energy rates for these years, any one of them may approach the Commission for a decision by filing an appropriate petition.

Secondary Energy

31. Secondary energy relates to the quantum of energy generated in excess of the design energy on an annual basis in the station. For the computation of monthly secondary energy and secondary energy charge, month wise details of design energy furnished, are indicated in the table given below:

MONTHWISE DESIGN ENERGY	
Month	Design Energy (Gwh)
April	97.85
May	106.00
June	92.80
July	109.24
August	115.08
September	59.86
October	35.39
November	25.22
December	22.21
January	23.81
February	29.43
March	62.39
Total	779.28

32. The annual design energy of the project has been given as 749.28 Gwh. Under directions from the Commission, the petitioner submitted month-wise details of additional energy accruing from the project on account of uprating of its capacity from 60 MW to 66 MW for each of the three units. The petitioner has submitted that the additional design energy of 30 Gwh would be available during the months of April to August from the project consequent to uprating of machines at 66 MW. Accordingly, the total annual design energy would, as a result of revision be 779.28 Gwh.

33. The respondents are paying the extra amount on account of up-rating of three units of Bairasiul HEP through the tariff. Therefore, the additional design energy accruing should be accounted for tariff purposes, even though the additional design energy of 30 Gwh has not been approved by CEA so far. Therefore, the annual design energy of 779.28 Gwh in respect of Bairasiul HEP shall be considered.

34. The rate of secondary energy shall be the same as rate of primary energy in the respective years.

FILING FEE

35. The petitioner has remitted a sum of Rs.10 lakhs on account filing fee for the present tariff petition. The petitioner has prayed that the filing fee be made a “pass through” in the tariff. HVPNL has submitted that the filing fee should not be made a “pass through” in tariff but should be borne by the petitioner itself. On the contrary, UPPCL has submitted that filing fee should be charged on O&M expenses. We have considered the submissions made on behalf of the parties. We are satisfied that the

filing fee is an obligatory statutory expense on the petitioner and is to be made “pass through” in the tariff, like other taxes, duties, cess and levies. We have also considered the implications of allowing filing fee in O&M expenses. We feel that filing fee should be allowed to be reimbursed as a separate item and not made a part of O&M expenses since by including the filing fee in O&M expenses will put additional burden on the consumers for a longer term. We, therefore, direct that filing fee of the main tariff petition only shall be recovered by the petitioner in 10 monthly installments in the tariff. We make it clear that all other charges including advocate's fee or filing fee for interlocutory applications before the Commission or any other court shall not be allowed as “pass through” and these expenses shall be borne by the petitioner itself.

36. In addition to the above charges, the petitioner shall be entitled to tax on income etc. as prescribed in the Commission's notification dated 26.3.2001.

37. Incentive and disincentive and other parameters of the notification dated 26.3.2001 which could not be implemented as such may be brought before the Commission through appropriate petition to enable the Commission to take an appropriate view on the matter.

38. The petitioner is already charging provisional tariff of 42 paise/kWh. The provisional tariff shall be adjusted against the tariff for the period 2001-2002 to 2003-2004 approved by us in this order.

39. The tariff approved by us shall be borne by the respondents in proportion of primary energy supplied to the beneficiaries from Bairasiul HEP till ABT is implemented in Northern Region. After implementation of ABT, the capacity charges shall be paid in proportion of capacity allocated.

40. This order disposes of petition No.65/2001.

Sd/-
(K.N. SINHA)
MEMBER

Sd/-
(G.S. RAJAMANI)
MEMBER

Sd/-
(D.P. SINHA)
MEMBER

New Delhi dated 1st November, 2002