

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Coram**

1. **Shri Ashok Basu, Chairman**
2. **Shri D.P. Sinha, Member**
3. **Shri G.S. Rajamani, Member**
4. **Shri K.N.Sinha, Member**

**Petition No.70/2000**

**In the matter of**

Approval of Tariff for additional transmission system associated with Vindhyachal Power Project Stage I along with associated bays in the Western Region.

**And in the matter of**

Power Grid Corporation of India Ltd.

.... Petitioner

VS

1. Madya Pradesh Electricity Board
2. Maharashtra State Electricity Board
3. Gujarat Electricity Board
4. Electricity Department, Panaji, Goa
5. Electricity Department, Daman
6. Electricity Department, Silvassa
7. Chattisgarh State Electricity Board

.... Respondents

The following were present:

1. Shri S.S. Sharma, AGM, PGCIL
2. Shri U.K. Tyagi, PGCIL
3. Shri C. Kannan, PGCIL

**ORDER  
(DATE OF HEARING 30-7-2002)**

The petitioner PGCIL, has sought approval of the Commission for transmission tariff in respect of assets forming part of the additional transmission system associated with Vindhyachal Super Thermal Power Project Stage I.

2. The Central Government in Ministry of Power vide its letter 31.5.1989 had accorded its approval for construction of 400 KV additional transmission system associated with Vindhyachal Super Thermal Power Project Stage-I at a cost of Rs.339.69 crores, including IDC of Rs.18.54 crores. However, the administrative approval was revised by the Central Government under its letter dated 23.2.2001 for a total cost of Rs.792.11 crores, including IDC of Rs.146.75 crores, based on 1<sup>st</sup> quarter 1998 price level.

3. In accordance with the approved implementation schedule, the transmission system was to be commissioned within a period of 48-57 months from the date of sanction and finalisation of the funding arrangement. The scope of the transmission system approved by the Central Government includes the following transmission lines :

- (a) 400 KV D/C Vindhyachal-Jabalpur II transmission line along with associated bays.
- (b) 400 KV D/C Jabalpur-Itarsi II transmission line along with associated bays.
- (c) 400 KV D/C Itarsi-Dhuley transmission line along with associated bays.

4. The above assets were declared under commercial operation with effect from 1.2.1998. The tariff for these assets for the period from 1.2.1998 has been claimed in accordance with Ministry of Power notification dated 16.12.1997. The petitioner has sought approval for tariff as under, based on final completion cost of Rs.676.86 crores :

(Rs. In lakhs)	
<b>Period</b>	<b>Annual Transmission Charges</b>
1997-1998 (2 months)	1942.57
1998-1999	11696.62
1999-2000	11577.31
2000-2001	10982.82

### **CAPITAL COST**

5. There exists huge variation between the revised approved cost of Rs.792.11 crores and the completion cost of Rs.676.86 crores. It has been explained on behalf of the petitioner that while processing revised cost estimates, the weighted average interest rate of 16% was considered for calculation of IDC. However, in actual execution of the project, the weighted average interest rate worked out to around 9%. This resulted in reduction of IDC component of cost by Rs.57.73 crores. It is further explained that in the revised cost estimates, IEDC was estimated at Rs.77.37 crores, on normative basis. However, during execution of the project, actual IEDC added up to Rs.34.13 crores, thereby leaving an excess of Rs.43.24 crores in the revised cost estimates. Respondents 1 and 2 have submitted that they are already paying provisional tariff based on estimated cost of Rs.706.44 crores against the actual completion cost of Rs.676.86 crores and, therefore, they have paid transmission charges in excess of the petitioner's entitlement. The petitioner has clarified that the

estimated cost of Rs.706.44 crores included cost of OPGW, which has been omitted while computing the completion cost of Rs.676.86 crores, being taken into consideration for the purpose of tariff. The excess provisional tariff, if any, paid by the beneficiary respondents in excess is to be adjusted.

6. As per the original investment approval dated 31.5.1989, the transmission system was to be commissioned within 48-57 months from the date of sanction and finalisation of the funding arrangement. It has been explained on behalf of the petitioner that funding arrangement was finalised and loans declared effective in March 1993. Therefore, keeping in view the stipulations contained in the letter dated 31.5.1989, the transmission system could be commissioned by December 1997 by computing 57 months from March 1993. The petitioner has placed necessary documents on record. It is stated that construction of the transmission system was in fact completed during December 1997 and it was declared under commercial operation with effect from 1.2.1998. We are satisfied with the explanation furnished on behalf of the petitioner that the commissioning of the transmission is generally in accord with the completion schedule prescribed by the Central Government in letter dated 31.5.1989.

7. During the final tariff calculation, it was observed that Vindhyachal Additional Transmission System covered provision for Emergency Restoration System (ERS). It was not clear as to whether the ERS sets were used only in Western region or in other regions as well. It was also observed that in the approved RCE, the cost of conventional earth wire had been covered, although, actually OPGW had been used as

ground wire in the transmission line. Vide our order dated 5.7.2002, we directed the petitioner to furnish the following information in respect of ERS. :-

- (a) Number of Emergency Restoration System equipments available with the petitioner and whether these were maintained on regional basis at some central locations,
- (b) Cost of procurement, means of financing, etc., of Emergency Restoration System equipment;
- (c) In case the number of Emergency Restoration System equipment was not large, whether the cost of equipment could be accounted for at corporate level; and
- (d) Whether any charges were being collected from the state utilities when utilised by them in emergent situations. If so, the details of charges recovered during the past three years were directed to be furnished.

8. The petitioner has filed affidavit dated 12.8.2002 to clarify the points raised. The petitioner has stated that the total number of ten sets of ERS equipment had been procured under the following two schemes :-

Project Name	Nos. of Sets	Cost
Vindhyachal Addl. Transmission System	6 sets	Rs.23.93 crs.
Nathpa-Jhakri Transmission System	4 sets	Rs.13.63 crs.

9. The ERS sets are deployed in all the five regions and their locations have been furnished by the petitioner.

10. The petitioner has clarified that the procurement of ERS was funded through foreign loans earmarked for specific projects. According to the petitioner, booking of ERS at corporate level at this juncture was not feasible. It was also stated that CEA vide its letter dated 12.11.2001 had cleared procurement of additional 21 sets in different regions under the specific schemes giving the locations of the ERS sets. The petitioner further stated that each region was a separate profit centre and relocation of part of asset from the region to corporate level would not be prudent.

11. The petitioner clarified that it is collecting the following deployment charges when ERS is used in the system of State Utilities.:-

- (a) Expenses incurred towards mobilization, demobilization, transportation (to and fro), loading & unloading expenses, labour cost, insurance and contingency expenses,
- (b) The employee cost on man-day basis,
- (c) Taxes and levies as per actual, and
- (d) Overhead charges @ 16% on (a+b).

12. The hiring charges of Rs.86 lakhs were collected by the petitioner from Metro Rail for use of ERS sets.

13. We have considered the matter for tariff calculation purposes. ERS covered in a particular scheme would be considered as part of that scheme itself. No separate charges are to be recovered from beneficiaries in case ERS is used in the states' system, as the annual transmission charges for the ERS are payable by them. However, in case ERS under the specific scheme of the region is used in other regions or by other authorities, then the "net" earnings of the petitioner on this account, shall be passed on to the beneficiaries of the region, who are paying the transmission charges on account of ERS.

14. In our order dated 5.7.2002 we also directed the petitioner to place on record the present earning or likely earnings as a result of use of transmission system for other purposes, like communication (by use of OPGW). In this regard petitioner has submitted that :

(a) The Ministry of Surface Transport and State Govts. provide Right of Way (ROW) free of cost for installation of optic fibre to all telecom players. ROW of transmission infrastructure is analogous to the underground ROW provided free of cost by various Govt. agencies.

(b) The total expenditure toward Telecom network is fully borne by the petitioner under its Telecom diversification plan and the constituents are completely insulated from the entire telecom activity. However, wherever OPGW /Optic fibre is to be used both for telecom and Unified load despatch schemes,

suitable apportionment of cost between telecom and ULDC scheme shall be done.

(c) In a meeting held on 1.3.1999 in the Ministry of Power, it was decided that the project cost would cover provision of conventional earthwire instead of actually used OPGW. Therefore, SEBs shall have no consequential benefit accruing on this account, if it is utilised for communication use.

(d) The revenue earned during the initial years would be insufficient to even pay back extra investment for use of transmission facilities for communication.

(e) Sharing of revenue earned in telecom business by the petitioner with beneficiaries is not appropriate and is unjustifiable.

15. It is mentioned that although ROW is free in case of underground cable, cost of installation and laying of optic fibre cable, etc., is to be borne by the telecom companies. However, in case of utilisation of transmission infrastructure, the petitioner is avoiding the tower cost, erection cost of tower and erection of OPGW (although project covers cost of conventional earth wire) etc. This cost is being recovered from the beneficiaries as part transmission charges. Therefore, the petitioner's contention that ROW of transmission lines is analogous to the underground ROW provided free of cost by the states is not justified. Also, the investment on tower cost including its erection and erection of earth wire (which is OPGW) on the towers is being recovered by the petitioner as transmission charges from the beneficiaries. Therefore, the petitioner's contention that total expenditure toward telecom network is fully borne by the petitioner under its telecom diversification plan is not correct. As the project cost for the purpose

of claiming transmission charges covers conventional earth wire instead of actually used OPGW, Ministry of Power's decision that SEBs shall have no consequential benefit accruing, if OPGW is utilised for communication use is in order. However, it is not clear as to how the benefits are to be shared for use of common infrastructure of transmission system such as towers which cover the erection cost, cost incurred in erection of earth wire i.e. OPGW etc. for which beneficiaries are paying transmission charges to the petitioner.

16. The issue of OPGW came up earlier in Petition No.46/2000. In this regard, the Commission, in its order in that petition, took a view that the issue of sharing of charges on account of communication facilities, if any to the petitioner shall be dealt with at an appropriate time. In this case also a similar view is taken. We leave the issue to be considered and decided when the infrastructure raised in connection with the transmission system is actually utilised for telecommunication purposes. For this purpose, we grant liberty to the parties to approach the Commission for appropriate directions.

17. For the purpose of computation of tariff in accordance with notification dated 16.12.1997, we allow the actual debt and equity employed by the petitioner, which are in the ratio of 92.13% and 7.87%.

## **INTEREST ON LOAN**

18. The interest on loan has been considered based on the loan amount, the repayment schedule and the interest rates contained in the petition. It is observed that the interest rates considered in different petitions for the same loan are different. It has been explained by the petitioner that these loans are carrying floating rates of interest and the interest prevailing on the date of commercial operation has been considered in the tariff petition. Any resetting of the interest rates during the tariff period shall have to be settled mutually between the parties. However, in the event of their inability to settle the matter, either party may approach the Commission for a decision. Subject to the above observations, actual interest rates as claimed in the petition as per the details given below have been allowed.

<b>Source of Loan</b>	<b>Amount of Loan in the year 1997-98 (Rs. in lakhs)</b>	<b>Rate of interest as on Date of Commercial Operation</b>
LIC	272.00	18.15%
BOND-III	1385.00	10.27%
GRID LOAN- III (2 <sup>nd</sup> series)	3869.00	16.30%
BOND-IV	4132.00	17.07%
BOND-VI	777.00	13.13%
IBRD	50369.00	7.54%
SBI	1554.00	13.77%
<b>TOTAL</b>	<b>62358.00</b>	-

## **O&M EXPENSES**

19. As provided in Ministry of Power notification dated 16.12.1997, operation and maintenance expenses, including expenses on insurance, if any, for the first full year after commissioning of the transmission utility are to be calculated as percentage of actual expenditure @ 1.5% of actual expenditure at the time of commissioning of the transmission system in the plain area and @ 2% of such expenditure in the hilly area. The expenditure on O&M in each subsequent year is to be revised as per weighted price index taking into account 60 percentage of weightage for wholesale price index and 40 percentage of weightage of consumer price index.

20. The completion cost of additional transmission system associated with Vindhyachal Power Project Stage I is 676.86 crores. The O&M expenses have been calculated @ 1.5% in accordance with the formula prescribed under Ministry of Power notification dated 16.12.1997 by taking the actual expenditure incurred in each year subject to the limit of completion cost of Rs.676.86 crores.

## **INTEREST ON WORKING CAPITAL**

21. It has been provided in the Ministry of Power notification dated 16.12.1997 that interest on working capital shall cover :

- (a) Operation and maintenance expenses (cash) for one month;

- (b) Maintenance spares at a normative rate of 1% of the capital cost. Cost of maintenance spares for each subsequent year shall be revised at the rate applicable for revision of expenditure on O&M of transmission system; and
- (c) Receivables equivalent to two months' average billing calculated on normative availability level.

22. The above methodology has been considered while computing working capital. The details of computation of working capital are given here under:

(Rs. in lakhs)

	<b>1997-98</b>	<b>1998-99</b>	<b>1999-2000</b>	<b>2000-01</b>
O&M expenses	84.18	85.52	90.55	95.99
Maintenance spares	673.46	684.13	724.43	767.90
Receivables	1934.09	1936.27	1911.62	1810.59
<b>TOTAL</b>	<b>2691.73</b>	<b>2705.92</b>	<b>2726.60</b>	<b>2674.48</b>

23. In the petitioner's tariff calculations, interest on working capital is based on interest rate of 15.84%. We have, however, allowed the annual average SBI PLR applicable during the financial year. For the years 1997-98, 1998-1999, 1999-2000 and 2000-2001 interest has been allowed based on annual average PLR of SBI of 14%, 13%, 12% and 11.5% respectively instead of the interest rate claimed by the petitioner in the petition.

## **DEPRECIATION**

24. It has been contended by the respondents that depreciation should be adjusted towards the loan repayment. According to the petitioner, depreciation is a recognised cost element and it does not have any bearing on repayment of loan. In this context, the petitioner has relied upon the accounting principle of the Institute of Chartered Accounts of India. It is contended on behalf of the petitioner that depreciation is charged for the purpose of replacement of assets at the end of useful life of the assets and, therefore, cannot be linked with loan repayment. As the 16.12.1997 notification issued by Ministry of Power provides for charging of depreciation in the tariff, the same is being allowed in this petition. While allowing depreciation component of tariff, the weighted average depreciation rate of 5.61% has been applied, which has been worked out on the basis of actual capital expenditure as per CA's certificate dated 15.6.2000 annexed to the petition.

25. In the light of above discussion, we approve the transmission charges as per table given below :

**TABLE**

(Rs. in Lakhs)

	1997-98 (Part year)	1998-99	1999-2000	2000-01
Interest on Loan	940.24	5594.59	5406.32	4754.59
Depreciation	629.68	3795.99	3797.16	3797.16
Operation & Maintenance Expenses	168.36	1026.18	1086.63	1151.83
Return on Equity	133.00	849.08	852.40	852.40
Interest on Working Capital	62.81	351.77	327.19	307.57
<b>Total</b>	1934.09	11617.61	11469.70	10863.55

26. In addition to the transmission charges, the petitioner shall be entitled to other charges like foreign exchange rate variation, income tax, incentive, surcharge and other cess and taxes in accordance with the notification dated 16.12.1997 issued by Ministry of Power.

27. The petitioner is already charging provisional tariff in respect of the assets covered by this petition. The provisional tariff being presently charged shall be subject to adjustment in the light of final tariff now approved by us.

28. The transmission tariff approved by us shall be included in the regional transmission tariff for Western Region and shall be shared by the regional beneficiaries in accordance with para 7 of notification dated 16.12.1997.

29. We find that the auditors' certificate furnished along with the petition certifies the transmission tariff calculations but does not disclose whether the capital expenditure, equity, loan, rate of interest, repayment schedule, O&M charges, etc. are as per the audited accounts of the petitioner company. **The petitioner is directed to file an affidavit within four weeks of the date of this order that all the tariff calculations and auditors' certificates are based on audited accounts of the petitioner company or in the alternative, the petitioner may file a revised auditor's certificate, in the format given below, failing which the transmission charges approved above shall not take effect and this order will automatically lapse without any further reference to the Commission.**

## AUDITOR'S CERTIFICATE

We have verified the books of accounts, records and other documents of Power Grid Corporation of India Ltd and certify that the data used for transmission tariff calculations for \_\_\_\_\_ [name of the transmission system/line (s)] are in accordance with the audited books of accounts up to \_\_\_\_\_ (date) of the company. We have obtained all information and explanations which to the best of our knowledge and belief were necessary for the purpose of our examination and necessary approvals of the competent authority in respect of capital cost, foreign exchange, time and cost over-run, etc. as prescribed under law, have been obtained.

Signature with Auditor's seal and date

30. This order disposes of Petition No. 70/2000.

**Sd/-**  
**(K.N. SINHA)**  
**MEMBER**

**Sd/-**  
**(G.S. RAJAMANI)**  
**MEMBER**

**Sd/-**  
**(D.P. SINHA)**  
**MEMBER**

**Sd/-**  
**(ASHOK BASU)**  
**CHAIRMAN**

New Delhi dated the 19<sup>th</sup> September 2002