

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram:

1. **Shri A.K.Basu, Chairperson**
2. **Shri K.N.Sinha, Member**
3. **Shri Bhanu Bhushan, Member**
4. **Shri A. H. Jung, Member**

Petition No.102/2004

In the matter of

Approval of transmission charges for Singrauli Transmission System in Northern Region for the period from 1.4.2004 to 31.3.2009.

And in the matter of

Power Grid Corporation of India Limited

....**Petitioner**

Vs

1. Rajasthan Rajya Vidyut Prasaran Nigam Limited, Jaipur
2. Ajmer Vidyut Vitran Nigam Ltd., Ajmer
3. Jaipur Vidyut Vitran Nigam Ltd., Jaipur
4. Jodhpur Vidyut Vitran Nigam Ltd., Jodhpur
5. Himachal Pradesh State Electricity Board, Shimla
6. Punjab State Electricity Board, Patiala
7. Haryana Vidyut Prasaran Nigam Ltd., Panchkula
8. Power Development Deptt., Govt. of Jammu & Kashmir, Jammu
9. Uttar Pradesh Power Corporation Limited, Lucknow
10. Delhi Transco Limited, New Delhi
11. Chandigarh Administration, Chandigarh
12. Uttaranchal Power Corporation Limited, Dehradun
13. Chief Electrical Distribution Engineer, Northern Railway, New Delhi..**Respondents**

The following were present:

1. Shri P.C.Pankaj, PGCIL
2. Shri U.K. Tyagi, PGCIL
3. Shri C. Kannan, PGCIL
4. Shri B. P. Kundu, PGCIL
5. Shri M.M. Mondal, CM (Fin), PGCIL
6. Shri K.K. Mittal, Addl. SE (ISP), RRVPN
7. Shri S.R.G.Sabal, AVVNL, JPR
8. Shri Yeshpal Singh, Jd JPR
9. Shri A.K. Tandon, EE, UPPCL
10. Shri Jayant Verma, UPPCL
11. Shri T.P.S.Bawa, PSEB
12. Shri V.K. Malhotra, DTL
13. Shri R.K.Arora, HPGCL

ORDER
(DATE OF HEARING: 18.8.2005)

The petition has been filed for approval for transmission charges for Singrauli Transmission System in Northern Region for the period from 1.4.2004 to 31.3.2009, based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004, (hereinafter referred to as “the 2004 regulations”). The petitioner had also prayed that it be permitted to continue the billing of transmission charges on the same basis as charged on 31.3.2004, pending determination of tariff in the present petition. No other specific relief is prayed for.

2. The petitioner has claimed the transmission charges as under:

(Rs. In lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	346.56	346.56	346.56	346.56	346.56
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	1022.39	1022.39	1022.39	1022.39	1022.39
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	122.76	128.12	133.82	139.74	146.10
O & M Expenses	1102.01	1146.01	1193.18	1238.77	1290.32
Total	2593.72	2643.08	2695.95	2747.47	2805.38

3. The details submitted by the petitioner in support of its claim for interest on working capital are given hereunder:

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	673.51	713.93	756.76	802.17	850.30
O & M expenses	91.83	95.50	99.43	103.23	107.53
Receivables	342.29	440.51	449.32	457.91	467.56
Total	1197.64	1249.94	1305.52	1363.31	1425.39
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	122.76	128.12	133.82	139.74	146.10

4. The transmission System associated with Singrauli STPS was approved by the Central Government in Ministry of Power under letter dated 8.1.1987 at a total cost of Rs. 25605 lakh. The annual transmission charges for the period from 1.4.2001 to 31.3.2004 were decided by the Commission in its order dated 31.7.2003 in Petition No 13/2002, and for the period up to 31.3.2001 by the Central Government under its notification dated 16.11.1998 which was revised by notification dated 14.5.1999 at a cost of Rs. 23596.16 lakh. The scope of work included in the transmission system and the date of commercial operation of the respective transmission asset are as stated below:

S.No.	Name of the transmission line	Date of commercial operation	Actual line length (Ckt-km) for O &M
(i)	400 kV S/C Singrauli-Anpara-Obra transmission line	5.4.1982	25.06
(ii)	400 kV S/C Singrauli-Kanpur-I transmission line	27.5.83	447.00
(iii)	400 kV S/C Kanpur-Panki-I transmission line	27.5.1983	5.62
(iv)	400 kV S/C Singrauli-Kanpur-II transmission line	14.3.1987	424.15
(v)	400 kV S/C Kanpur-Panki-II transmission line	14.3.1987	5.70
(vi)	400 kV S/C Singrauli-Lucknow transmission line	1.6.1986	408.60
(vii)	400 kV S/C Lucknow-Moradabad transmission line	1.6.1986	331.17
(viii)	400 kV S/C Moradabad-Muradnagar transmission line	1.6.1986	133.00
(ix)	400 kV S/C Muradnagar-Dadri transmission line	16.10.1984	33.10
(x)	400 kV S/C Dadri-Panipat transmission line	16.10.1984	112.32
(xi)	400 kV S/C Kanpur-Agra transmission line	26.11.1986	240.00
(xii)	400 kV S/C Agra-Bassi-Hirapura transmission line	30.11.1986	211.43
	Total		2377.15

5. The replies to the petition have been filed by Jaipur Vidyut Vitran Nigam Ltd, Jodhpur Vidyut Vitran Nigam Ltd, Ajmer Vidyut Vitran Nigam Ltd. and Punjab State

Electricity Board. No objections have been received in response to the notices published by the petitioner in the newspapers.

CAPITAL COST

6. As per clause (2) of Regulation 52 of the 2004 regulations in case of the projects existing up to 31.3.2004, the project cost admitted by the Commission for determination of tariff prior to 1.4.2004 shall form the basis for determination of tariff.

7. The petitioner has considered the capital expenditure of Rs.23596.16 lakh as admitted by the Commission in its order dated 31.7.2003 *ibid*. The petitioner has not claimed additional capitalisation on works. The petitioner has also not considered additional capitalisation on account of FERV, as there are no foreign loans. Accordingly, gross block of Rs. 23596.16 lakh as claimed has been considered for the purpose of tariff.

DEBT- EQUITY RATIO

8. Regulation 54 of the 2004 regulations *inter alia* provides that in case of the existing project, debt–equity ratio considered by the Commission for fixation of tariff for the period ending 31.3.2004 shall be considered for determination of tariff. It further provides that the debt and equity amount arrived at in the above manner shall be used for calculation of interest on loan, return on equity, advance against depreciation and foreign exchange rate variation.

9. The petitioner has claimed tariff based on debt-equity of 50:50 in the Net Fixed Asset of Rs. 14605.60 lakh as on 1.4.1997, which was considered by the Commission in its order dated 31.7.2003 *ibid*, and is in accordance with the 2004 regulations.

Accordingly, the equity of Rs. 7302.80 as on 1.4.1997, as claimed has been considered in the present petition for the purpose of determination of tariff.

RETURN ON EQUITY

10. As per clause (iii) of Regulation 56 of the 2004 regulations, return on equity shall be computed on the equity base determined in accordance with regulation 54 @ 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.

11. The petitioner has claimed return on equity of Rs. 7302.80 lakh, which has been found to be admissible. Accordingly, the petitioner shall be entitled to return on equity @ Rs. 1022.39 lakh each year during the tariff period.

INTEREST ON LOAN

12. As per clause (i) of Regulation 56 of the 2004 regulations, interest on loan capital is to be computed loan wise on the loans arrived at in the manner indicated in regulation 54. Further, the loan outstanding as on 1.4.2004 is worked out as the gross loan as per regulation 54 minus cumulative repayment as admitted by the Commission up to 31.3.2004. The repayment for the period 2004-09 needs to be worked out on normative basis.

13. The petitioner has not claimed any interest on loan, as the loan repayment was over in 2001-02. Accordingly, the petitioner is not entitled to interest on loan.

DEPRECIATION

14. Sub-clause (a) of clause (ii) of Regulation 56 of the 2004 regulations provides for computation of depreciation in the following manner, namely:

- (i) The value base for the purpose of depreciation shall be the historical cost of the asset.
- (ii) Depreciation shall be calculated annually based on straight line method over the useful life of the asset and at the rates prescribed in Appendix II to these regulations. The residual 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.

15. The gross depreciable value of the asset, as per (ii) above, is $0.9 \times (\text{Rs. } 23596.16 \text{ lakh} - 92.00 \text{ lakh}) = \text{Rs. } 21153.74 \text{ lakh}$. Cumulative depreciation and AAD recovered in tariff up to 31.3.2004 is Rs. 15608.77 lakh. Remaining depreciable value as on 1.4.2004 is thus Rs. 5544.98 lakh.

16. As the entire loan for the transmission lines covered in the present petition has already been repaid, the depreciation has been worked out by spreading the balance depreciable value over the remaining useful life of the asset (16 years) as on 1.4.2004, and it comes to Rs.346.56 lakh per year.

ADVANCE AGAINST DEPRECIATION

17. As per sub-clause (b) of clause (ii) of Regulation 56 of the 2004 regulations, in addition to allowable depreciation, the transmission licensee is entitled to Advance Against Depreciation, computed in the manner given hereunder:

AAD = Loan repayment amount as per regulation 56 (i) subject to a ceiling of 1/10th of loan amount as per regulation 54 minus depreciation as per schedule

18. It is provided that Advance Against Depreciation shall be permitted only if the cumulative repayment up to a particular year exceeds the cumulative depreciation up to that year. It is further provided that Advance Against Depreciation in a year shall be restricted to the extent of difference between cumulative repayment and cumulative depreciation up to that year.

19. The petitioner has not claimed Advance Against Depreciation, as there is no loan repayment. The petitioner's entitlement to Advance Against Depreciation is, therefore, zero.

OPERATION & MAINTENANCE EXPENSES

20. In accordance with clause (iv) of Regulation 56 the 2004 regulations, the following norms are prescribed for O & M expenses :

	Year				
	2004-05	2005-06	2006-07	2007-08	2008-09
O&M expenses per ckt-km (Rs in lakh)	0.227	0.236	0.246	0.255	0.266
O&M expenses per bay (Rs in lakh)	28.12	29.25	30.42	31.63	32.90

21. The petitioner has claimed O & M expenses for 2377.15 ckt-kms and 20 bays (Anpara-1, Kanpur-5, Panki-2, Agra-2, Bassi-2, Lucknow-3, Moradabad-2, Muradnagar-3), which have been allowed. Accordingly, the petitioner's entitlement to O & M expenses has been worked out as given hereunder:

(Rs. in lakh)

	Year				
	2004-05	2005-06	2006-07	2007-08	2008-09
O&M expenses for transmission lines	539.61	561.01	584.78	606.17	632.32
O&M expenses for 20 bays	562.40	585.00	608.40	632.60	658.00
Total	1102.01	1146.01	1193.18	1238.77	1290.32

22. The petitioner has submitted that the wage revision of its employees is due with effect from 1.1.2007. Therefore, O & M expenses should be subject to revision on account of revision of employee cost from that date. In the alternative, it has been prayed that the increase in employee cost due to wage revision be allowed as per actuals for extra cost to be incurred consequent to wage revision. We are not expressing any view, as this issue does not arise for consideration at this stage. The petitioner may approach for a relief in this regard at an appropriate stage in accordance with law.

INTEREST ON WORKING CAPITAL

23. The components of the working capital and the interest thereon are discussed hereunder:

(i) Maintenance spares

Regulation 56(v)(1)(b) of the 2004 regulations provides for maintenance spares @ 1% of the historical cost escalated @ 6% per annum from the date of

commercial operation. In the present case, element-wise capital expenditure on the date of commercial operation of each element has not been made available by the petitioner. The earliest available capital expenditure of Rs. 22716.00 lakh as on 1.4.1992 has been considered as the historical cost for the purpose of the present petition and maintenance spares have been worked out accordingly by escalating 1% of the historical cost @ 6% per annum.

(ii) O & M expenses

Regulation 56(v)(1)(a) of the 2004 regulations provides for operation and maintenance expenses for one month as a component of working capital. The petitioner has claimed O&M expenses for 1 month of O&M expenses of the respective year as claimed in the petition. This has been considered in the working capital.

(iii) Receivables

As per Regulation 56(v)(1)(c) of the 2004 regulations, receivables will be equivalent to two months average billing calculated on target availability level. The petitioner has claimed the receivables on the basis 2 months' transmission charges claimed in the petition. In the tariff being allowed, receivables have been worked out on the basis 2 months' transmission charges.

(iv) Rate of interest on working capital

As per Regulation 56(v)(2) of the 2004 regulations, rate of interest on working capital shall be on 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 project or part thereof (as the case may be) is declared under commercial operation, whichever is later. The interest on working capital is payable on normative basis notwithstanding that the transmission licensee has

not taken working capital loan from any outside agency. The petitioner has claimed interest on working capital @ 10.25% based on SBI PLR as on 1.4.2004, which is in accordance with the 2004 regulations and has been allowed.

24. The necessary computations in support of interest on working capital are appended hereinbelow.

	(Rs. in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	457.09	484.52	513.59	544.40	577.07
O & M expenses	91.83	95.50	99.43	103.23	107.53
Receivables	428.53	436.53	445.10	453.43	462.81
Total	977.45	1016.54	1058.12	1101.06	1147.41
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	100.19	104.20	108.46	112.86	117.61

TRANSMISSION CHARGES

25. A summary sheet on computation of transmission charges is attached to this order. The transmission charges being allowed for Singrauli Transmission System are summarised below.

	(Rs. In lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	346.56	346.56	346.56	346.56	346.56
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	1022.39	1022.39	1022.39	1022.39	1022.39
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	100.19	104.20	108.46	112.86	117.61
O & M Expenses	1102.01	1146.01	1193.18	1238.77	1290.32
Total	2571.15	2619.16	2670.59	2720.58	2776.88

26. In addition to the transmission 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. These transmission charges shall be included in the regional transmission tariff for Northern Region and shall be shared by the regional beneficiaries in accordance with the 2004 regulations.

27. 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.

28. This order disposes of Petition No.102/2004.

sd/-
(A.H. JUNG)
MEMBER

sd/-
(BHANU BHUSHAN)
MEMBER

sd/-
(K.N.SINHA)
MEMBER

sd/-
(ASHOK BASU)
CHAIRPERSON

New Delhi dated the 30th November 2005

Summary Sheet

Name of the Company		PGCIL					
Name of the Scheme		Singrauli Transmission System in Northern Region					
Date of Commercial Operation		February, 1982 to March, 1987					
Tariff setting Period		2004-09					
Petition No.		102/2004					
							Rs.in lakh
1	Capital Cost of the Project						23596.16
2	Admitted Capital Cost as on 01.04.2004 for Calculation of Debt and Equity						14605.60
3	Additional Capitalisation (works)						0.00
		For the year 2001-02				0.00	
		For the year 2002-03				0.00	
		For the year 2003-04				0.00	
		Total				0.00	
4	Additional Capitalisation (FERV)						0.00
		For the year 2001-02				0.00	
		For the year 2002-03				0.00	Not applicable
		For the year 2003-04				0.00	
		Total				0.00	
5	Total Capital Cost as on 01.04.2004(2+3+4)						14605.60
6	Means of Finance¹:						
		Debt	50.00%		7302.80		
		Equity	50.00%		7302.80		
		Total			14605.60		
7	Debt details-Entire notional debt stands paid as on 01.04.2004						-
8	Weighted Av. Rate of interest-Not applicable						
9	Depreciation recovered up to 31.03.09:						17341.57
				Dep	AAD	Total	
		Recovered up to 31.03.2001		14265.19	0.00	14265.19	
		From 01.04.01 to 31.04.2004		1343.58	0.00	1343.58	
		From 01.04.2004 to 31.03.2009		1732.80	0.00	1732.80	
		Total				17341.57	
10	Balance Depreciation to be recovered beyond 31.03.2009:						3812.17
		Capital cost for the purpose of Depreciation²				23596.16	
		Land Cost				92.00	
		Capital cost excluding land cost				23504.16	
		90% of Capital Cost as above				21153.74	
		Cum. Depreciation to be recovered up to 31.03.09				17341.57	
		Balance				3812.17	
<p>1 Debt and Equity are notional and not actual as per division of debt & equity taken by Government of India as 50:50 and the same has been accepted by the Commission.</p> <p>2 Previous tariff was set by the Commission for the period from 01.04.2001 to 31.03.2004. The Gross Block as on 01.04.2001 as per Commission's order in petition 13/2002 was Rs. 23596.16 lakh.</p>							