

CHAPTER 2

TARIFF PROPOSAL SUBMITTED BY TVNL

The petition filed by TVNL for approval of its electricity generation tariff for FY 2004-05 has been summarized in this section. The Commission holds that the information available is vague and incomplete with insignificant basis and ambiguous assumptions for the proposed tariff.

2.1 Project Cost

The Project cost as indicated by TVNL, is Rs.1541.76 Crores, with financing of the project being done as follows-

Table 1: Financing of Project

Sources	(Rs. In Crores)
Bihar Government – Equity Contribution	100.00
Loan from Bihar Government	608.89
Investment by BSEB	168.39
Loan from PFC	158.00
Total	1035.28

From the Commission's observation, the difference of Rs. 506.48 Crores is a part of IDC. The total project cost was calculated as Rs. 36.71Lakhs/MW (of total capacity of both thermal plants taken together). According to the TVNL, the loan taken from PFC amounting to Rs.158.00 Crores and interest amounting to Rs.259.73 Crores thereon has already been liquidated on 31.03.03.

2.2 Debt-Equity Ratio

From the project cost financing details, it is clear that the Equity contribution of the project is Rs. 100 Crores and the debt component of the project is Rs. 1441.76 Crores. Hence, the proportion of equity in the total project cost is 0.06.

2.3 Plant Performance

The summary of the Plant performance is given below:

2.3.1 Total Generation and Station Plant Load Factor

The table below gives the yearly plant performance for the period from 2000-01, in terms of the Plant Load Factor and Total Generation.

Table 2: Yearly Plant Performance

Year	Total Generation in MU	Station Plant Load Factor %

2000-01	1,330.74	36.11
2001-02	1,155.96	31.42
2002-03	1,366.60	37.14
2003-04	1,347.20	36.62
2004-05 (Estimated)	1,715.00	46.61

In FY 2003-04, the PLF of the two units (420MW) was 36.62% with generation of 1347 MU. According to the petitioner, the Station Plant Load Factor will improve, when both the units operate simultaneously. TVNL has also attributed the low PLF to inadequate evacuation capacity, poor maintenance of the transmission lines and lack of demand from the JSEB.

As given in the petition, if the generating plant at TVNL operates at the given installed capacity, then the PLF for the FY 2004-05, would be 46.61% with a generation of 1715 MU.

The table below, as given by the petitioner, explains the Station PLF, when one of units is not operational during the FY 2004-05:

Table 3: Unit-wise monthly generation for the period April 04 to March 05

Month/ Year	Generation (MU), Unit #1	Generation (MU), Unit #2	Total	Station PLF (%)	Plant Availability Factor
April 2004	50	-	50	16.5	25
May 2004	85	-	85	28.1	40
June 2004	90	-	90	29.76	40
July 2004	95	-	95	31.41	40
August 2004	95	-	95	31.41	40
September 2004	95	80	175	57.87	65
October 2004	95	100	195	64.48	70
November 2004	-	120	120	39.68	50
December 2004	-	120	120	39.68	50
January 2005	100	120	220	72.75	90
February 2005	110	120	230	76.05	90
March 2005	120	120	240	79.36	95
Total	935	780	1715	46.61	

From the above table, it is clear that if both the units of the TVNL plant are operational then by the month of January 2005 itself, station PLF of 72.75% can be achieved.

2.3.2 Auxiliary Consumption

The auxiliary consumption for the period from 2000-01 is summarized in the table below:

Table 4: TVNL Plant Auxiliary Consumption from FY 2001-02 to 2004-05

Year	Auxiliary Consumption (%)
2000-01	16.02
2001-02	15.79
2002-03	15.58
2003-04	16.00
2004-05 (Estimated)	12.50

The auxiliary power consumption of the TVNL plant has been in the range of 15-16%. According to TVNL, the auxiliary consumption of the power plant will substantially reduce, when both the units of the thermal plant are run simultaneously.

2.3.3 Monthly Fuel (Coal & Oil) Consumption

The following table gives the data of monthly fuel consumption (Coal and Oil) for the year 2003-04, as submitted by TVNL.

Table 5: Fuel oil consumption and rate for the period April 03 to March 04

Month and Year 2003-04	Oil Consumption (mL/ KwH)	Coal Rate (Rs./ Tonne)	Oil Rate (Rs./ mL)
April – 03	2.75	1102	19,192
May – 03	7.60	1097	17,271
June – 03	12.82	1096	16,927
July – 03	11.95	1100	17,140
August – 03	9.11	1100	16,829
September– 03	10.24	1103	17,905
October – 03	8.05	1106	17,676
November – 03	9.77	1106	17,083
December – 03	11.97	1106	16,893
January – 04	3.46	1106	18,198
February – 04	3.28	1106	18,198
March – 04	2.47	1106	18,198
Average	8.17	1102	17,625

The coal consumption, for the FY 2003-04 has been given as 0.68 kg/kWh, by the petitioner and the average coal rate has been indicated as Rs.1102 per tonne. However, in the revised petition, submitted by TVNL, the cost of coal (of Grade ‘D’) including transportation to the Tenughat Thermal Power Station has been indicated as Rs.1224/MT, which is to be effective after 16.06.04.

2.4 Interest on Loan

The fixed interest rate is indicated as 13% in the petition. However, TVNL has been unable to provide details regarding source-wise interest rate payable and the licensee plans for refinancing of loans that carry a higher rate of interest.

The table below as given by the petitioner gives the Interest on Loan from the FY 2001-2005:

Table 6: Interest on Loan from the FY 2001-02 to 2004-05

	2001-02	2002-03	2003-04	2004-05
Interest on Loan (In Rs. Crores)	113.74	94.39	83.06	83.06

2.5 Return on Equity

The rate of return on equity has been taken at a level of 14% by TVNL.

2.6 Depreciation

The actual depreciation figures as submitted by TVNL are summarized in the table below:

Table 7: Depreciation for the FY 2001-02 to 2004-05

	2001-02	2002-03	2003-04	2004-05
Depreciation (in Rs. Crores)	50.63	50.68	50.68	50.68

However, it is not clear from the petition whether a Straight-line method has been used for the calculation of Depreciation, since the depreciation amount as given in the petition, is the same from FY 2002-05. The petitioner was unable to indicate whether there has been any addition of assets or any write-off during the past five years.

2.7 Operation and Maintenance Expenses

The Operation and Maintenance expenses for the last five years are summarized in the table below:

Table 8: Operation and Maintenance Expenses for the FY 2001-02 to 2004-05

	2001-02	2002-03	2003-04	2004-05
O&M (in Rs. Crores)	82.83	85.56	92.38	96.22

The Operation and Maintenance expenses of the TVNL plant have been given as Rs. 85.56 crores for the FY 02-03 and Rs.92.38 crores for the year 2003-'04 in the petition. The table below gives the break up of O&M expenses from 2001-02 to 2004-05, as submitted by the petitioner:

Table 9: Details of O&M expenses from the FY 2001-02 to 2004-05

Breakup (in Rs. Lakhs)	2001-02	2002-03	2003-04	2004-05
Employee cost	840.06	871.63	1069.66	1337.37
- Pension & Gratuity	189.71	189.71	189.71	189.71
- Labour for O&M	398.00	440.65	649.00	604.00
Repair and Maintenance	30.88	45.95	148.26	163.08
Stores consumed	141.55	261.87	548.31	548.31
Power charges	155.59	155.59	155.59	155.59
Water charges	6116.63	6116.59	6115.20	6115.20
Administrative expenses	366.60	319.81	239.32	263.25
Corporate office expense allocation	44.45	154.37	223.27	245.60
Total	8283.47	8556.17	9238.32	9622.11

According to the petitioner, expenditure on R&M, administration expenses and Labour charges for O&M for the year 2004-05, has been assumed with a 10% increase on the expenditure incurred in the year 2003-04. The Commission observes that one of the main components of the high O&M cost for the past few years has been the high water charge which are to the tune of Rs.61 Crores.

2.8 Interest on Working Capital

The table below gives the absolute value of interest on working capital over the last five years.

Table 10: Interest on Working Capital for the FY 2001-02 to 2004-05

	2001-02	2002-03	2003-04	2004-05
Total Working Capital (in Rs. Crores)	94.39	99.78	105.38	124.58
Weighted Average Interest Rate (Rs. Crores)	13.21	13.97	14.75	17.44

2.9 Summary of Energy Charges

2.9.1 Calorific Value of Coal (kCal/kg)

The weighted average Gross Calorific Value of coal (for Grade 'D') has been indicated as 4500 kCal/ Kg in TVNL's petition.

2.9.2 Station Heat Rate (kCal/kWh)

The data provided on Station Heat Rate by TVNL is inconsistent and ambiguous. In the petition that was submitted by TVNL, the Station Heat Rate had been specified as 1980 kCal/ kWh. However, when this data was used to calculate the actual fuel consumption, the records of Actual fuel consumption did not match with the computed fuel consumption figures. When the Commission questioned TVNL on accuracy of the data provided by them, they responded by submitting a revised Station Heat Rate of 3040.54kCal/ kWh.

2.9.3 Auxiliary Consumption

The auxiliary power consumption of the TVNL plant as indicated in section 2.3.2 of this chapter, has been in the range of 15-16% for the last five years.

2.9.4 Fuel Cost

As discussed in Section 2.3.3 of this chapter, the Price per tonne of coal has been given by TVNL as Rs.1102 per tonne. This data on price per tonne of coal is inclusive of transportation costs. However, in the revised petition, submitted by TVNL, the cost of coal (of Grade 'D') including transportation to the Tenughat Thermal Power Station has been indicated as Rs.1224 per MT, which is to be effective after 16.06.04.