



AN ANALYSIS OF FINANCIAL PERFORMANCE OF POWER SECTOR IN TAMILNADU

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ABSTRACT

The researcher has made an attempt to analyze the financial performance of the power industry of Tamil Nadu by using financial variables. There are a number of factors influencing the financial performance of the power sector. In this study the researcher has considered a few variables, like, cost of power supply, tariff, revenue to Tamil Nadu Electricity board and subsidy. And using the same the study has tried to analyse the financial efficiency level of the sector in two periods. The purpose of this analyze is to verify the hypothesis relating to subsidization. For that the researcher has used comparative analysis method with the help of appropriate statistical tools.

INTRODUCTION

The researcher has made an attempt to analyze the financial performance of the power industry of Tamil Nadu by using financial variables. There are a number of factors influencing the financial performance of the power sector. In this study the researcher has considered a few variables, like, cost of power supply, tariff, revenue to Tamil Nadu Electricity board and subsidy. And using the same the study has tried to analyse the financial efficiency level of the sector in two periods. The purpose of this analyze is to verify the hypothesis relating to subsidization. For that the researcher has used comparative analysis method with the help of appropriate statistical tools. To know the real changes in the variables and to incorporate the effects of inflation into the study, the researcher has converted the value to all financial variables into constant value. Wholesale price index has been used and the year 1998-99 is considered as the base year. The arithmetic mean is used to analyze the average change in the variable between the periods. The t-test has been used to confirm the significant difference between the mean values at five percent level.

COST STRUCTURE OF TAMIL NADU ELECTRICITY BOARD

The major components of electricity supply cost are (i) the revenue expenditure, consisting of a expenditure on fuel, power purchase, operation and maintenance (O and M), establishment and administration (E and A), and on other miscellaneous; and (ii) the fixed costs includes interest payable to institutional creditors and to the concerned state governments. The details of the cost structure of TNEB for the first period are presented in Table 1.1.

Table 1.1: Cost Structure Of Tamil Nadu Electricity Board**(in Constant Price, Rs in Crores)**

Year	Fuel Cost	Power Purchased	O&M Exp.	Est. & Admn. Charges	Fixed Cost	Total
1986-87	668.98 (31.92)	578.74 (27.61)	90.86 (4.35)	406.17 (19.38)	350.81 (16.74)	2095.56 (100)
1987-88	763.57 (32.16)	703.41 (29.63)	73.99 (3.14)	441.02 (18.57)	391.68 (16.50)	2373.67 (100)
1988-89	1069.86 (36.06)	737.48 (24.85)	100.67 (3.39)	534.77 (18.05)	523.84 (17.65)	2966.62 (100)
1989-90	1225.70 (35.69)	818.53 (23.83)	110.08 (3.20)	659.5 (19.23)	619.93 (18.05)	3433.74 (100)
1990-91	1370.31 (34.87)	948.13 (24.13)	175.94 (4.47)	755.77 (19.26)	678.66 (17.27)	3928.81 (100)
1991-92	1334.4 (38.65)	997.17 (28.88)	106.82 (3.09)	473.95 (13.76)	539.37 (15.62)	3451.72 (100)
1992-93	1766.24 (44.11)	933.98 (23.34)	117.49 (2.93)	671.92 (16.78)	514.27 (12.84)	4003.90 (100)
1993-94	1856.81 (42.12)	991.77 (22.49)	151.72 (3.46)	753.58 (17.09)	654.36 (14.84)	4408.24 (100)
1994-95	1894.04 (39.22)	1131.99 (23.44)	161.25 (3.35)	934.13 (19.34)	707.45 (14.65)	4828.86 (100)
1995-96	2509.86 (44.25)	1173.56 (20.67)	220.00 (3.87)	960.93 (16.93)	810.56 (14.28)	5674.91 (100)
1996-97	2770.06 (46.06)	1241.06 (20.62)	157.32 (2.61)	913.91 (15.18)	934.68 (15.53)	6017.03 (100)
1997-98	2951.35 (44.44)	1413.65 (21.27)	144.96 (2.18)	1208.25 (18.18)	925.71 (13.93)	6643.92 (100)

Source : Constant price is calculated on the basis of data from the Annual Administrative Report, TNEB (various years).

Note: O & M Exp. – Operation and Maintenance Expenses, Est & Admn. Charges- Establishment and Administrative Charges and miscellaneous, Fixed Cost – Interest on Government loan and other institutions. Figures in parenthesis indicates percentage

It is clear from Table 1.1 fuel cost has accounted for about 31.92 percent (Rs.668.98 crores) in 1986-87. It was gradually increased to 44.44 percent (Rs.2951.35 crores) in 1997-98. In case of power purchase, operational and maintenance cost, establishment and administrative charges and fixed cost, the percentage share to total cost in the year 1986-87 were 27.61 per cent, 4.35 per cent, 19.38 per cent and 16.74 per cent respectively. In the year 1997-98, they were 21.27 per cent, 2.18 per cent, 18.18 per cent and 13.93 per cent respectively in the first period under study.

Table 1.2 gives the details of the cost structure of TNEB for the second period.

Table 1.2: Cost Structure of Tamil Nadu Electricity Board**(in Constant Price, Rs in Crores)**

Year	Fuel Cost	Power Purchased	O & M Exp.	Est. & Admn. Charges	Fixed Cost	Total
1998-99	2160.30 (33.64)	1798.67 (28.00)	154.45 (2.40)	1379.21 (21.47)	931.17 (14.49)	6423.80 (100)
1999-00	2543.08 (32.25)	2583.27 (32.72)	121.52 (1.53)	1519.46 (19.24)	1126.29 (14.26)	7893.62 (100)
2000-01	2335.67 (30.25)	2668.56 (34.54)	107.21 (1.38)	1548.17 (20.04)	1065.47 (13.79)	7725.08 (100)
2001-02	2232.30 (20.85)	3598.54 (33.57)	102.32 (0.95)	3736.77 (34.86)	1047.55 (9.77)	10717.48 (100)
2002-03	2050.00 (23.54)	4278.42 (49.10)	103.63 (1.18)	1081.45 (12.41)	1200.14 (13.77)	8713.64 (100)
2003-04	2035.43 (22.33)	4726.11 (51.78)	105.67 (1.15)	941.69 (10.31)	1317.57 (14.43)	9126.47 (100)
2004-05	2055.96 (21.28)	4929.03 (51.05)	118.27 (1.22)	1145.15 (11.85)	1410.88 (14.60)	9659.29 (100)
2005-06	2174.48 (23.09)	5444.43 (57.84)	127.74 (1.35)	1406.64 (14.93)	263.15 (2.79)	9416.44 (100)
2006-07	2287.32 (20.72)	6210.11 (56.25)	130.47 (1.18)	1398.36 (12.67)	1013.57 (9.18)	11039.83 (100)
2007-08	2378.74 (20.87)	6423.66 (56.35)	138.98 (1.22)	1479.24 (12.98)	978.14 (8.58)	11398.76 (100)
2008-09	2397.15 (19.70)	7014.33 (57.66)	145.54 (1.20)	1569.22 (12.90)	1039.78 (8.54)	12166.02 (100)
2009-10	2463.97 (19.32)	7345.88 (57.60)	139.22 (1.09)	1678.08 (13.16)	1125.99 (8.83)	12753.14 (100)
2010-11	2578.12 (20.66)	7333.78 (58.77)	157.66 (1.26)	1534.22 (12.30)	874.22 (7.01)	12478.00 (100)
2011-12	2630.10 (20.22)	8014.64 (61.61)	160.87 (1.24)	1468.99 (11.29)	735.00 (5.64)	13009.60 (100)
2012-13	2578.99 (18.55)	8496.37 (61.10)	164.22 (1.18)	1678.14 (12.07)	987.00 (7.10)	13904.72 (100)
2013-14	2787.00 (20.68)	7499.40 (55.65)	178.39 (1.32)	1795.66 (13.33)	1214.55 (9.02)	13475.00 (100)

Source: Constant price is calculated on the basis of data from the Annual Administrative Report, TNEB (various years).

Note: O & M Exp.– Operation and Maintenance Expenses. Est & Admn. Charges - Establishment and Administrative Charges and miscellaneous. Fixed Cost– Interest on Government loan and other institutions. Figures in parenthesis indicates percentage

It is observed from Table 1.2 that the share of fuel cost to the total cost was 33.64 percent (Rs.2130.30 crores) in the year 1998-99. In 2005-06 the fuel cost was 24.45 percent (Rs.2174.48 crores). It was decreased to 20.68 per cent in the year 2013-14. In case of power purchase, operational and maintenance cost, establishment and administrative charges and fixed cost, the percentage share to total cost in the year 1998-99 were 28.00 per cent, 2.40 per cent, 21.47 per cent and 14.49 per cent respectively. In the year 2013-14, they were 55.65 per cent, 1.32 per cent, 13.33 per cent and 9.02 per cent respectively. It is observed from the above table that the share of purchase of power was greater in the second period that is, after the entry of private sector than the first period under study.

FINANCIAL PERFORMANCE OF POWER SECTOR IN TAMIL NADU ELECTRICITY BOARD

Cost of delivering the power and revenue earned by selling the power are the important factors which determine the financial position of the power sector. Here the researcher has analyze the financial performance of Tamil Nadu Electricity Board. Table 1.3 shows the details of the financial performance of TNEB for the first period.

Table 1.3: Financial Performance of Tamil Nadu Electricity Board

(in Constant Price, Rs in Crores)

Year	Total Revenue	Total Cost	Net Profit / loss (including subsidy)
1986-87	2095.58	2095.58	0
1987-88	2522.47	2373.69	148.78
1988-89	3062.98	2966.64	96.34
1989-90	3559.52	3433.75	125.76
1990-91	4081.41	3928.83	152.57
1991-92	3943.75	3451.75	492.00
1992-93	4582.38	4003.91	578.46
1993-94	4746.92	4408.27	338.64
1994-95	5307.22	4828.88	478.33
1995-96	6132.68	5674.93	457.74
1996-97	6434.82	6017.04	417.78
1997-98	6946.97	6643.94	303.03

Source: Constant price is calculated on the basis of data from Annual Administrative Report, TNEB (various years)

Table 1.3 shows the financial performance of Tamil Nadu Electricity Board from 1986-87 to 1997-98. The total revenue from the sale of electricity during the first period was Rs.2095.58 crores in 1986-87 and it had increased to Rs.6946.97 crores in 1998-98. The cost of supply of electricity was Rs.2095.58 crores in 1986-87 and it also increased to Rs.6643.94 crores in 19987-98. The Tamil Nadu Electricity Board was earned as net profit of Rs.148.78 crores in the year 1987-88 and it was increased to Rs.303.3 crores in the year 1997-98.

The details of the financial performance of TNEB for the second period under study are given in Table 1.4.

Table 1.4: Financial Performance Of Tamil Nadu Electricity Board

(in Constant Price, Rs in Crores)

Year	Total Revenue	Total Cost	Net Profit / loss (including subsidy)
1998-99	6758.73	6423.80	334.93
1999-00	8249.87	7893.62	356.25
2000-01	8066.23	7725.10	341.13
2001-02	6835.97	10717.50	-3881.52
2002-03	8798.11	8713.66	84.44
2003-04	8339.15	9126.48	-787.32
2004-05	8840.39	9659.30	-818.90
2005-06	7918.26	9416.44	-1498.18
2006-07	9147.88	11039.83	-1891.95
2007-08	9247.14	11398.76	-2151.62
2008-09	9876.00	12166.02	-2290.02
2009-10	10879.22	12753.14	-1873.92

2010-11	9473.10	12478.00	-3004.90
2011-12	9789.47	13009.60	-3220.13
2012-13	12678.00	13904.72	-1226.72
2013-14	10167.33	13475.00	-3307.67

Source: Constant price is calculated on the basis of data from Annual Administrative Report, TNEB (various years)

It is understood from Table 1.4 shows the financial performance of Tamil Nadu Electricity Board from 1998-99 to 2013-14. The total revenue from the sale of electricity was Rs.6758.73 crores in 1998-99 and it had increased to Rs.10167.33 crores in 2013-14. The cost of supply of electricity was Rs.6423.80 crores in the year 1998-99 and it also increased to Rs.13475.00 crores in the year 2013-14. It is evident from the above table that the revenue from the sale of electricity was more than the cost of supply of electricity till 2000-01. But from 2001-02 the cost of supply of electricity was more than revenue. The net profit (including subsidy) was Rs.334.936 crores in 1997-98. It has increased to Rs.341 crores in 2000-01. After that Tamil Nadu Electricity Board incurred loss. In 2005-06 net loss including subsidy was Rs.971.9 crores it was Rs. 3307.67 in the year 2013-14.

TREND AND GROWTH OF COST OF AND REVENUES FROM POWER SUPPLY IN TAMIL NADU

The financial position of the power sector is determined by cost of supply of power and revenue earned from selling the power. The researcher has attempted to analyse the trend and growth of financial position of Tamil Nadu Electricity Board in two periods an overall period.

Table 1.5 presents the trend and growth of total revenue of TNEB for the two periods and the overall period.

Table 1.5: Trend and Growth of Total Revenue of TNEB

S. No.	Periods	Linear Trend Coefficients		R ²	Compound Growth Rate (%)
		a	b		
1.	First Period (1986-87 to 1997-98)	1691.43	424.60* (24.428)	0.98	10.70
2.	Second Period (1998-99 to 2013-14)	6865.47	258.95* (5.632)	0.69	2.89
3.	Overall Period (1986-87 to 1997-98)	2391.66	323.92* (19.269)	0.93	5.46

Figures in brackets represent t-values. * Indicates the trend coefficients are statistically significant at 5 per cent level.

It is depicted from Table 1.5 that the trend co-efficients for the total revenue of TNEB under the three periods are positive and statistically significant at five per cent level. It implies that on an average total revenue of TNEB have been increasing at the rate of Rs.424.60 crores in first period, Rs.258.95 crores in second period and Rs. 323.92 crores in the overall period. The compound growth rate of total revenue was 10.70 percent during the first period which was greater than the compound growth rate of total revenue in second period, which was 2.89 per cent.

In order to test the following hypotheses, t-test has been applied.

H₀: There is no significant difference in the total revenue of TNEB between two periods.

H_a : There is a significant difference in the total revenue of TNEB between two periods.

Table 1.6 gives the computed mean values and t-value in respect of the total revenue of TNEB during the study period.

Table 1.6: Performance of Total Revenue of TNEB

S. No.	Periods	Mean (in MW)	S.D.	t-value
1.	First Period (1986-87 to 1997-98)	4451.39	1543.72	7.97*
2.	Second Period (1998-99 to 2013-14)	9066.55	1480.14	
3.	Overall Period (1986-87 to 2013-14)	7088.63	2756.35	

Source: Computed data. * Significant at 5 per cent level.

It is shown from Table 1.6 that the average total revenue of TNEB during the first period (1986-87 to 1996-97) was Rs.4451.39 crores and it was Rs. 9066.55 crores the second period (1998-99 to 2013-14). The difference between two periods the average of the total revenue of TNEB was Rs.4615.16 crores and the difference was significant at five percent level. Hence the average total revenue of TNEB during the second period was comparatively better than the average of total revenue of TNEB during the first period. The t-value was 7.97 which was indicating that there is a significant difference in the total revenue of TNEB between two periods. Hence, it is concluded that the null hypothesis is rejected and the alternative hypothesis is accepted.

Table 1.7 presents the trend and growth of total cost incurred by TNEB for the two periods and the overall period.

Table 1.7: Trend and Growth of Total Cost of TNEB

S. No.	Periods	Linear Trend Coefficients		R ²	Compound Growth Rate (%)
		a	B		
1.	First Period (1986-87 to 1997-98)	1635.30	387.20* (14.916)	0.96	10.21
2.	Second Period (1998-99 to 2013-14)	6766.28	453.23* (11.307)	0.90	4.56
3.	Overall Period (1986-87 to 1997-98)	1258.05	454.44* (32.419)	0.98	6.93

Figures in brackets represent t-values. * Indicates the trend coefficients are statistically significant at 5 per cent level.

It is inferred from Table 1.7 that the trend co-efficients for the total cost incurred by the TNEB under the three periods are positive and statistically significant at five per cent level. It implies that on an average total cost incurred by the TNEB have been increasing at the rate of Rs.387.20 crores in first period, Rs.453.23 crores in second period and Rs.454.44 crores in overall period. The compound growth rate of total cost incurred by the TNEB was 10.21 percent during the first period which was greater than the compound growth rate of total cost uncured by the TNEB in second period, which was 4.56 per cent.

In order to test the following hypotheses, t-test has been applied.

H₀: There is no significant difference in the total cost incurred by the TNEB between two periods.

H_a: There is a significant difference in the total cost incurred by the TNEB between two periods.

Table 1.8 furnishes the computed mean values and t-value in respect of the total cost incurred by the TNEB during the study period.

Table 1.8: Performance of Total Cost Incurred by the TNEB

S. No.	Periods	Mean (in MW)	S.D.	t-value
1.	First Period (1986-87 to 1997-98)	4152.27	1427.19	9.21*
2.	Second Period (1998-99 to 2013-14)	10618.81	2272.93	
3.	Overall Period (1986-87 to 2013-14)	7847.44	3784.17	

Source: Computed data. * Significant at 5 per cent level.

It is found from Table 1.8 that the average total cost incurred by the TNEB during the first period (1986-87 to 1996-97) was Rs.4152.27 crores and it was Rs.10618.81 crores during the second period (1998-99 to 2013-14). The difference between the averages of the two periods was 6466.54 crores and the difference was significant at five percent level. Hence the average of total cost incurred by the TNEB during the second period was greater than the average of total cost incurred by the TNEB during the first period. The t-value was 9.21 which was indicating that there is a significant difference in total cost incurred by the TNEB between two periods. Hence, it is concluded that the null hypothesis is rejected and the alternative hypothesis is accepted.

Table 1.9 shows the trend and growth of net profit/loss of TNEB for the two periods and the overall period.

Table 1.9: Trend and Growth of Net Profit / Loss Total of TNEB

S. No.	Periods	Linear Trend Coefficients		R ²	Compound Growth Rate (%)
		a	b		
1.	First Period (1986-87 to 1997-98)	100.33	32.28* (2.39)	0.39	14.83
2.	Second Period (1998-99 to 2013-14)	99.19	-194.28* (-3.311)	0.44	--
3.	Overall Period (1986-87 to 1997-98)	1299.35	-139.08* (-6.166)	0.60	--

Figures in brackets represent t-values. * Indicates the trend coefficients are statistically significant at 5 per cent level.

It is observed from Table 1.9 that the trend co-efficients for the net profit/loss incurred by the TNEB under the first period is positive and statistically significant at five per cent level. In case of second and whole periods the trend coefficients are negative and statistically significant at 5 per cent level. It implies that on an average net profit incurred by the TNEB have been increasing at the rate of Rs.32.28 crores in first period. But in case of second and whole periods, the average net profit have been decreasing at the rate of Rs.194.28 crores

and Rs.139.08 crores that is, TNEB have been incurred a loss in after the entry of private sector in Tamil Nadu.

Table 1.10 shows the computed mean values in respect of the net profit / loss incurred by the TNEB during the study period.

Table 1.10: Performance of Net Profit /Loss Inucrrd by The TNEB

S. No.	Periods	Mean (in MW)	S.D.
1.	First Period (1986-87 to 1997-98)	326.31	171.84
2.	Second Period (1998-99 to 2013-14)	-1552.26	1395.72
3.	Overall Period (1986-87 to 2013-14)	-786.91	1421.27

Source: Computed data. * Significant at 5 per cent level.

It is seen from Table 1.10 that the average net profit /loss total cost incurred by the TNEB during the first period (1986-87 to 1996-97) was Rs.326.31 crores and it was Rs.-1552.26 crores during the second period (1998-99 to 2013-14). The difference between the average of the two periods was Rs.-1225.95 crores. It implies that the TNEB incurred a loss of Rs.1225.95 crores in the second period.

POWER SECTOR REFORMS IN INDIA

Indian power industry was facing chronic problem like, inadequate and unreliable power supply in the early 90's. According to Rajan Thillai, "The performance of the State Electricity Boards (SEBs), which were the mean organisations responsible for electricity supply and distribution steadily deteriorating over the years". Most of SEBs had large commercial and technical losses. The tariff structure was highly irrational. Tariffs were determined politically than on the basis of economic principles. Due to the poor financial performance of the SEBs, they were not in a position to mobilise the resources and invest for the augmentation of installed capacity and increase the generation in accordance to the growing demand for power. Therefore, it become necessary to find alternative sources to augment the installed capacity and increase the generation to meet the growing demand.

In this background, the Government of India (GOI) opened up power generation for private sector investors. But there was poor response from the private sector. To identify the reasons for such poor response World Bank's India Region Energy Operations Division organised a workshop in October 1992. In the workshop it was noted that private investors require a transparent process of regulating the sector and rules of the game clearly. In April 1993, the National Development Council constituted a Committee on power to suggest measures to reform the sector. The Committee reported that the SEBs should operate on the commercial principles. Subsequently, in November 1993, a National Conference was organised to find and formulate appropriate models to reform and restructure the power sector. After these initial steps GOI constituted the Shankar Committee to study the restructuring of power sector. The Committee proposed six different models for restructuring the SEBs.

Model I

The state electricity board would be converted into a corporate body with the government shareholding brought down to less than 50 percent gradually over time. The primary purpose of this is to enable it to function on commercial lines under private management. An independent regulatory commission would also be set up to regulate the tariffs.

Model II

In this model the SEB would be corporatised and divided into several zonal companies, with an independent transmission corporation for the entire state. Each regional company will have its own generation systems in its respective area. An independent regulatory commission would also be set up to regulate the power sector.

Model III

SEB would be unbundled into separate generation, transmission and distribution companies. There will be multiple players in generation and distribution but only a single player in transmission. An independent regulatory commission would be set up to govern the sector. Generating company could directly enter into an agreement with the distribution company to supply power.

Model IV

As in Model III, the SEB would be unbundled into generation, transmission and distribution, but transmission will still be with the SEB. There will be multiple players in generation and distribution. Remaining features are similar as in Model III.

Model V

SEB would be corporatized and would retain the existing generating and transmission responsibilities. Distribution would be undertaken by a number of small distribution companies. An independent regulatory commission would be set up. New additions in generation and transmission capacity would be through private investment.

Model VI

This is similar to Model I except that new generation stations would be set up by private investors. An independent regulatory commission would be established to regulate the investments and tariff in the sector. Along models Shankar Committee has suggested many measures to reform the sector.

After the implementation of the recommendations of the Committee, plenty of changes have taken place in Indian power industry. Central Electricity Regulatory Commission was set up in 1998. States were also urged to set up State Electricity Regulatory Commissions (SERCs). Power being a concurrent subject, it was necessary for the Government of India to take the States into confidence to initiate the reform process. The Ministry of Power therefore took a number of steps in this direction by impressing upon the State Governments to undertake time-bound reforms through signing of Memorandum of Understanding (MOUs). Most of the States signed MOUs with the Ministry of Power. GOI took a series of important decisions during the year 2000, subsequently renamed as Accelerated Power (APDRP). This

programme permitted the Ministry of Power for six levels of intervention-formulated legal framework: State level intervention to set up SERCs, remove cross subsidies and tariff anomalies, provide budgetary support to SEBs towards subsidies, introduce privatization, etc., SEB level intervention to carry out distribution reform leading to increased accountability, introduction of commercial accounting, reduction in Transmission and Distribution losses etc., distribution circle level intervention envisages operation of circles, as independent profit centres, feeders level intervention aims at operating 11 KV feeders as business units accountable for quality of power and reliability, metering, billing, collection, etc., and consumer level intervention to ensure mandatory metering with digital interface for all consumers.

Under the Accelerated Power Development and Reform Programme Scheme, 25 per cent of the project cost will be met by Central grant and 25 per cent by loan whereas remaining 50 per cent will have to be met by the utilities through their internal resources or institutional loans or suppliers' credits. As on 15th January 2004, Rs.2451.24 crores were utilized under this programme, which was 15 per cent of the estimated project amount.

It is a known fact that increasing population, better living standard and industrial growth needs more and more electricity, although both energy and financial resources are rather limited. The Electricity Act, 2003 was passed in Parliament of India in May 2003. It includes the subjects like generation, acceleration and action like, privatisation, strengthening of transmission and distribution, privatisation of distribution, trading of power, distribution and supply in rural areas, pollution control and renewable energy, captive generation, power tariff and power theft. After prolonged discussions and debates this act was passed with the long-term aim of power sector development.

The Ministry of Power has signed MOU with States reflecting the joint commitments of the Centre and States to undertake reforms in a time bound manner. The MOU now being fleshed out into Memorandum of Agreements with clear and more specific milestones as the reform programme in the States is acquiring concrete shape. Twenty-five states have been covered by this exercise till now.

FINDINGS AND CONCLUSION

It is found that the fuel cost has accounted for about 31.92 percent (Rs.668.98 crores) in 1986-87. It was gradually increased to 44.44 percent (Rs.2951.35 crores) in 1997-98. In case of power purchase, operational and maintenance cost, establishment and administrative charges and fixed cost, the percentage share to total cost in the year 1986-87 were 27.61 per cent, 4.35 per cent, 19.38 per cent and 16.74 per cent respectively. In the year 1997-98, they were 21.27 per cent, 2.18 per cent, 18.18 per cent and 13.93 per cent respectively in the first period under study.

It is observed that the share of fuel cost to the total cost was 33.64 percent (Rs.2130.30 crores) in the year 1998-99. In 2005-06 the fuel cost was 24.45 percent (Rs.2174.48 crores). It was decreased to 20.68 per cent in the year 2013-14. In case of power purchase, operational and maintenance cost, establishment and administrative charges and fixed cost, the percentage share to total cost in the year 1998-99 were 28.00 per cent, 2.40 per cent,

21.47 per cent and 14.49 per cent respectively. In the year 2013-14, they were 55.65 per cent, 1.32 per cent, 13.33 per cent and 9.02 per cent respectively.

The total revenue from the sale of electricity during the first period was Rs.2095.58 crores in 1986-87 and it had increased to Rs.6946.97 crores in 1998-98. The cost of supply of electricity was Rs.2095.58 crores in 1986-87 and it also increased to Rs.6643.94 crores in 1998-98. The Tamil Nadu Electricity Board was earned as net profit of Rs.148.78 crores in the year 1987-88 and it was increased to Rs.303.3 crores in the year 1997-98.

The total revenue from the sale of electricity was Rs.6758.73 crores in 1998-99 and it had increased to Rs.10167.33 crores in 2013-14. The cost of supply of electricity was Rs.6423.80 crores in the year 1998-99 and it also increased to Rs.13475.00 crores in the year 2013-14.

It is depicted that the trend co-efficients for the total revenue of TNEB under the three periods are positive and statistically significant at five per cent level. It implies that on an average total revenue of TNEB have been increasing at the rate of Rs.424.60 crores in first period, Rs.258.95 crores in second period and Rs. 323.92 crores in the overall period.

The compound growth rate of total revenue was 10.70 percent during the first period which was greater than the compound growth rate of total revenue in second period, which was 2.89 per cent.

It is shown that the average total revenue of TNEB during the first period (1986-87 to 1996-97) was Rs.4451.39 crores and it was Rs. 9066.55 crores the second period (1998-99 to 2013-14). The difference between two periods the average of the total revenue of TNEB was Rs.4615.16 crores and the difference was significant at five percent level. The t-value was 7.97 which was indicating that there is a significant difference in the total revenue of TNEB between two periods.

It is inferred that the trend co-efficients for the total cost incurred by the TNEB under the three periods are positive and statistically significant at five per cent level. It implies that on an average total cost incurred by the TNEB have been increasing at the rate of Rs.387.20 crores in first period, Rs.453.23 crores in second period and Rs.454.44 crores in overall period.

The compound growth rate of total cost incurred by the TNEB was 10.21 percent during the first period which was greater than the compound growth rate of total cost incurred by the TNEB in second period, which was 4.56 per cent.

It is found that the average total cost incurred by the TNEB during the first period (1986-87 to 1996-97) was Rs.4152.27 crores and it was Rs.10618.81 crores during the second period (1998-99 to 2013-14). The difference between the average of the two periods was 6466.54 crores and the difference was significant at five percent level. The t-value was 9.21 which was indicating that there is a significant difference in total cost incurred by the TNEB between two periods.

It is observed that the trend co-efficients for the net profit/loss incurred by the TNEB under the first period is positive and statistically significant at five per cent level. In case of second and whole periods the trend coefficients are negative and statistically significant at 5 per cent

level. It implies that on an average net profit incurred by the TNEB have been increasing at the rate of Rs.32.28 crores in first period. But in case of second and whole periods, the average net profit have been decreasing at the rate of Rs.194.28 crores and Rs.139.08 crores that is, TNEB have been incurred a loss in after the entry of private sector in Tamil Nadu.

It is seen that the average net profit /loss total cost incurred by the TNEB during the first period (1986-87 to 1996-97) was Rs.326.31 crores and it was Rs.-1552.26 crores during the second period (1998-99 to 2013-14). The difference between the average of the two periods was Rs.-1225.95 crores. It implies that the TNEB incurred a loss of Rs.1225.95 crores in the second period.

REFERENCES

- [1] Grewal PS, Numerical Methods of Statistical Analysis, Sterling Publishers Pvt. Ltd., New Delhi, 1987; 555.
- [2] Statistics at a Glance, TNEB, Various years.
- [3] Prasad P. Electricity Tariff in a Developing Economy with Special Reference to India. Economic and Political Weekly 1990; 5(2).
- [4] Jha R, Murty MN, Satrix BS. Technical Efficiency in the Public Sector: An Analysis of the State Electricity Boards in India. Indian Economic Review 1992; 11
- [5] Banerjee P, Srivastava AK. Demand for Electricity in Uttar Pradesh during the year 2000-01. Indian Journal of Economics 1994; 75: 297.
- [6] Lee B-J. Seperability Test for the Electricity Supply Industry. Journal of Applied Economics 1995; 10(1).
- [7] Poongodi, Ravichandran M. Economics of Power Consumption: A Scenario at the District level. Southern Economist 1996; 35(12).
- [8] Turvey R, Dennis. Electricity Economics Essays and Case Studies, World Bank Johns Hopkins University press, Baltimore and London 1997.
- [9] Audinet P, Fages E. Energy Policy of India : Cost Differences of Two Scenarios. Energy Policy 1998; 26(9).
- [10] Pati BB, Patra KC. Energy Conservation: Its Planning and Management, Kurukshehra 1998; 46(10).