सत्यमेव जयते

Report of the Comptroller and Auditor General of India on Public Sector Undertakings for the year ended 31 March 2019

भारतीय लेखापरीक्षा और लेखा विभाग + INDIAN AUDIT AND ACCOUNTS DEPARTMENT

लोकहितार्थ सत्यनिष्ठा

Dedicated to Truth in Public Interest

GOVERNMENT OF TAMIL NADU

TRUTH ALONE TRIUMPHS

Government of Tamil Nadu

Report No. 2 of 2021

Report of the
Comptroller and Auditor General of India

on

Public Sector Undertakings

for the year ended March 2019

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Preface

This Report deals with the results of audit of Government Companies and Statutory Corporation, referred to in this report as Public Sector Undertakings (PSUs) and has been prepared for submission to the Government of Tamil Nadu under Section 19A of the Comptroller and Auditor General's (Duties, Powers and Conditions of Services) Act, 1971, as amended from time to time.

2. Audit of the accounts of Government Companies is conducted by the Comptroller and Auditor General of India under the provisions of Section 139 and 143 of the Companies Act, 2013. According to Section 2 (45) of the Act 2013, a Government Company means any company in which not less than fifty one *per cent* of the paid-up share capital is held by the Central Government or by any State Government or Governments or partly by the Central Government and partly by one or more State Governments, and includes a company which is a subsidiary company of such a Government Company. Besides, any other company owned or controlled, directly or indirectly, by the Central Government, or by any State Government or Governments, or partly by the Central Government and partly by one or more State Governments are referred as Government controlled other Companies[1]. The audit arrangements of Statutory Corporation are prescribed under the respective Acts through which the corporation was established.

3. This Report deals with performance of 75 PSUs (74 Government Companies and one Statutory Corporation) in the State of Tamil Nadu, the audit of which has been entrusted to the Comptroller and Auditor General of India. The report has been divided in two parts: **Part I** deals with the analysis of the performance of the Power Sector Companies. The Government of Tamil Nadu (GoTN) has high financial stakes in the Power sector PSUs as the total investment in these companies stood at ₹1,75,436.26 crore (in five PSUs) as on 31 March 2019. The total investment of GoTN in power sector PSUs represented 88.98 *per cent* of its total investment of ₹1,97,153.09 crore in all the PSUs. The Equity contributed by the State Government in power sector was mainly towards capital investment and for construction of various projects. The Power Sector companies incurred a net loss of ₹13,176.20 crore during 2018-19. Keeping in view the significance of the investment in the sector, we have presented the details of the performance of the Power Sector PSUs and results of our audit of these companies (one Performance Audit and three compliance audit paragraphs) in **Part -I** of the Report.

4. **Part-II** of the Report deals with the details of the performance of the 70 other than power sector PSUs (including one statutory corporation). Total investment of GoTN in these PSUs stood at ₹21,716.83 crore at the end of March 2019. Investment of GoTN in these PSUs represented 11.02 *per cent* of its investment in all the PSUs. These PSUs incurred loss of ₹3,789.64 crore during 2018-19. This Part includes six compliance audit paragraphs relating to seven PSUs namely TANCEM, TAMIN, TACTV, TIDEL Park, TIIC, TNCSC and TNPHC.

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1 Ministry of Corporate Affairs- (Removal of Difficulties) Seventh Order 2014 dated 04 September 2014.

5. The audit observations featured in this Report are those which came to notice in the course of audit during the year 2018-19 as well as those which came to notice in earlier years but were not dealt with in the previous Reports. Matters relating to the period after 31 March 2019 have also been included, wherever necessary.

6. The audit has been conducted in accordance with the Auditing Standards issued by the Comptroller and Auditor General of India.

Overview

Functioning of Public Sector Undertakings

Audit of Government Companies is governed by Sections 139 and 143 of the Companies Act, 2013. The financial statements of Government Companies are audited by the Statutory Auditors appointed by the Comptroller and Auditor General of India (CAG). These financial statements are also subject to supplementary audit by the CAG. Audit of Statutory Corporations is governed by their respective legislations.

As on 31 March 2019, Tamil Nadu had 75 State Public Sector Undertakings (PSUs) consisting one Statutory Corporation and 74 Government Companies (including five non-functional Government Companies). These PSUs fall under the audit jurisdiction of CAG. The working PSUs registered a turnover of ₹1,29,350.66 crore during 2018-19 as per their latest finalised accounts. This turnover was equal to 7.77 *per cent* of the Gross State Domestic Product (GSDP) of Tamil Nadu. As on 31 March 2019, the investment (Equity and long term loans) of the State Government in 75 PSUs was ₹1,97,153.09 crore. Out of which, the investment in power sector alone stood at ₹1,75,436.26 crore representing 88.98 *per cent* of total investment of GoTN in all PSUs.

1. Functioning of Power Sector Undertakings

Formation of Power Sector Undertakings

Tamil Nadu Electricity Board (TNEB) was formed on 01 July 1957 under the Electricity Supply Act, 1948 as a successor to the erstwhile Electricity Department of the Government of Madras and was responsible for electricity generation, distribution and transmission, and it regulated the electricity supply in the State. Following the enactment of Electricity Act, 2003 (Act), TNEB was reorganised in terms of the scheme approved (October 2008) by Government of Tamil Nadu (GoTN). Accordingly, a holding company, by the name of TNEB Limited and two subsidiary companies namely, Tamil Nadu Transmission Corporation Limited (TANTRANSCO)[2] and Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO)[3] were formed and the Scheme came into force from 01 November 2010.

Besides these three companies, GoTN had already established (June 1991) Tamil Nadu Power Finance and Infrastructure Development Corporation Limited (TN Powerfin) to mobilise funds from public for financing the developmental works of erstwhile TNEB. In December 2008, GoTN established Udangudi Power Corporation Limited (UPCL)[4] as a joint venture project with equity participation of M/s BHEL Limited, to construct 2x800 MW Super critical thermal power station at Udangudi in Thoothukudi District

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[2] Comprising all the assets, liabilities and proceedings belonging to the TNEB concerning the transmission of electricity in the State

[3] Comprising all the assets, liabilities and proceedings belonging to the TNEB concerning generation and distribution of electricity in the area of supply to all the Circles of Tamil Nadu.

[4] Presently functioning as 100 *per cent* subsidiary of TANGEDCO.

as a subsidiary of erstwhile TNEB. Thus, the State had five Power Sector companies as on 31 March 2019. Audit of these power sector companies is governed by Sections 139 and 143 of the Companies Act, 2013. The financial statements of these companies are audited by the Statutory Auditors appointed by the CAG subject to supplementary audit by the CAG.

The State Government provides financial support in the form of equity, loans and grants/subsidy to these power sector undertakings from time to time. The Ministry of Power (MoP), Government of India (GoI) also launched (20 November 2015) Ujwal DISCOM Assurance Yojana (UDAY Scheme) for operational and financial turnaround of State owned Power Distribution Companies (DISCOMs). GoTN agreed to implement UDAY Scheme and signed tripartite Memorandum of Understanding with GOI and TANGEDCO in January 2017.

The Power Sector Undertakings registered a turnover of ₹61,053.34 crore during 2018-19 as per their latest finalised accounts. This turnover was equal to 3.67 *per cent* of the GSDP of Tamil Nadu indicating an important role played by the Power Sector companies in the economy of the State.

Stake of Government of Tamil Nadu

As on 31 March 2019, the total investment (equity and long term loans) in five power sector undertakings was ₹1,75,436.26 crore. The investment consisted of 28.71 *per cent* towards equity and 71.29 *per cent* in long-term loans. The investment has grown by 55.54 *per cent* from ₹1,12,789.32 crore in 2014-15 to ₹1,75,436.26 crore in 2018-19. The budgetary assistance received by these PSUs during 2014-19 ranged between ₹11,653.34 crore and ₹37,690.57 crore. The budgetary assistance of ₹15,696.33 crore received during the year 2018-19 included ₹1,394.58 crore, and ₹14,301.75 crore in the form of equity and grants/subsidy respectively. The budgetary support to these power sector PSUs were made primarily to meet the revenue gap on account of subsidised tariff.

Performance of Power Sector Undertakings

The overall loss incurred by the five power sector companies was ₹13,176.20 crore in 2018-19 against the loss of ₹12,763.92 crore incurred in 2014-15. According to latest finalised accounts, only one PSU (TN Powerfin) earned profit of ₹83.20 crore and three companies (TNEB Limited, TANGEDCO and TANTRANSCO) incurred a total loss of ₹13,259.40 crore.

During 2014-15, the power sector PSUs reported a total loss of ₹12,763.92 crore. During 2015-16 and 2016-17, the position improved significantly and the loss decreased to ₹5,942.06 crore and ₹4,497.29 crore respectively. The decrease in loss was mainly on account of tariff revision. However, during 2017-18 and 2018-19, the loss increased to ₹12,333.58 crore and ₹13,176.20 crore respectively despite tariff revision in August 2017. During the year 2018-19, the loss of TANGEDCO was increased by ₹4,862.64 crore mainly due to increase in cost of power purchase and generation as well as increase in employee and finance costs which together summed up to additional cost of ₹7,396.54 crore despite increase in revenue by ₹2,533.90 crore in 2018-19.

Return on State Government Funds

The total equity funds infused by the State Government in these five PSUs up to March 2010 stood at ₹60.06 crore and a total fund of ₹37,227.37 crore during 2010-19. During 2010-19, State Government had received a total dividend of ₹162.17 crore and converted the interest free loan of ₹9,126 crore as grant. After deducting these amount, the net investment at the end of March 2019 stood at ₹37,125.26 crore.

The aggregate return on investment of five PSUs were negative in all the five years during 2014-19 and it ranged between 9.44 (2016-17) and 71.62 (2014-15) *per cent.* The negative return on investment for the year 2018-19 was at 35.49 *per cent.* The improvement in the position of return on State Government funds was mainly on account of decrease in losses of power sector due to reduction in purchase of costly power and restructuring of loans under UDAY scheme.

The present value (PV) of funds infused by the State Government was computed by compounding the historical value of investment adding interest calculated with the average rate of interest on Government borrowings which is considered as the minimum cost of funds to the Government for the concerned year. The present value of the historical cost of investment of ₹37,125.26 crore worked out to ₹56,799.92 crore. The aggregate return on investment of five PSUs calculated on PV were also negative in all the five years.

The net worth of the five power sector undertakings in 2014-15 was negative at ₹40,588.30 crore. Though there was a marginal improvement in the year 2016-17, the net worth deteriorated further during 2017-18 and the net worth at the end of March 2019 was negative at ₹41,695.50 crore. The negative net worth was mainly on account of losses reported in TANGEDCO. As per the latest audited annual accounts, the overall accumulated losses of the Power Sector Undertakings was ₹92,027.97 crore as against the equity capital of ₹50,376.03 crore. At the end of March 2019, only TN Powerfin had a positive net worth of ₹1,570.99 crore with a paid up capital of ₹1,290 crore.

Financial Turnaround of DISCOMs under Ujwal DISCOM Assurance Yojana (UDAY)

GoTN signed a Memorandum of Understanding (MoU) with MoP on 9 January 2017 under UDAY. As per the Scheme, the State Government was required to takeover 75 *per cent* of the debt (₹30,420 crore) of the DISCOM as on 30 September 2015. Accordingly, upon signing the MoU, GoTN released (February-March 2017) a sum of ₹22,815 crore to TANGEDCO. Further, the Government had converted the interest free loan of ₹9,126 crore into grant during the years 2017-18 and 2018-19 (*i.e.*, ₹4,563 crore each).

Coverage of this Report

This part of the Report contains one performance audit *i.e.* "Performance Audit on Coal Management in Thermal Power Stations of Tamil Nadu Generation and Distribution Corporation Limited" and three compliance audit paragraphs involving financial effect of ₹6,905.54 crore.

2 Performance Audit on Coal Management in Thermal Power Stations of Tamil Nadu Generation and Distribution Corporation Limited

Executive Summary

As on March 2019, Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) owns and operates five coal based Thermal Power Stations (TPS) (two TPSs at Mettur, two TPSs at North Chennai, and one TPS at Tuticorin) with total installed capacity of 4,320 MW. The cost of coal constituted 95.54 to 98.41 per cent of the total cost of generation of TANGEDCO during 2014–19 and has significant impact on power tariff on consumers. The performance audit on coal management was conducted covering the period 2014–2019 to ascertain economy in procurement and transportation, effectiveness of assessment of quality and quantity of coal procured, and efficiency of consumption of coal in TPSs against norms. The audit findings are summarised below:

Planning and procurement of coal

Coal is procured domestically through long term coal linkages from subsidiary companies of Coal India Limited (CIL) at the notified prices. Against linkage of 106.97 Million Metric Tonnes (MMT), TANGEDCO could secure receipt of 71.82 MMT of coal during 2014–19. Even though TANGEDCO resorted to procurement of 22.76 MMT of imported coal to offset the short supply, it did not levy any penalty for short supply from CIL.

Based on the advice of GOI, CIL requested (June 2016) TANGEDCO to stop importing coal and substitute it with high grade indigenous coal available from its sources. However, coal supplied under import substitution scheme was to the extent of 31 per cent of agreed quantity. But, TANGEDCO did not prefer any claim of penalty with the coal companies as per clause 3 of FSA for the short supply.

GOI introduced (June 2016) a scheme of "Flexibility in utilisation of domestic coal for reducing the cost of power generation" which provided for consolidation of Annual Contracted Quantity of coal of all TPS within the State. Due to non-inclusion of coal allotment made for one of the Joint Venture power company i.e., NTECL which is having TPS within the State, TANGEDCO lost the central allocation of coal to the extent of 6.239 MMTPA.

Coal supply management

TANGEDCO allowed its JV partner NTPC Tamil Nadu Energy Company Limited (NTECL) to use its own coal terminal without any commitment for upgradation of unloading facilities. In the meantime, it used a private coal terminal for unloading of coal which resulted in avoidable extra expenditure of ₹41.68 crore.

Even though TANGEDCO suffered excess transit loss over the norm of 1.50 per cent for the coal transported from North Chennai to Mettur by railways in 47 out of 60 months (78 per cent) valuing ₹58.37 crore, it did not fix any accountability on the contractor for the loss.

The coal handling contracts at TPS suffered from deficiencies such as non-adoption of uniform contractual terms, method of contract, etc. In addition, TANGEDCO erroneously fixed lower quantity of Minimum Guaranteed Quantity (MGQ), resulting in avoidable payment of incentive of ₹10.61 crore for handling additional quantity over and above MGQ.

Failure to load the coal up to the permissible carrying capacity of wagons resulted in idle freight charges of ₹101.35 crore.

Assessment of quality and quantity

As against the normative loss of calorific value of 120 kcal/kg, the actual loss of calorific value during transportation from mines to discharge ports ranged between 140 to 2,256 kcal/kg resulting in wasteful expenditure of ₹2,012.65 crore. Even though there were instances of drop in Gross Calorific Value (GCV) during consumption immediately upon its receipt on the same day, TANGEDCO had not analysed the reasons for the same.

The systems adopted by TANGEDCO for assessment of quality of coal was deficient as (i) at coal mines there was no mechanical sampling as prescribed by GOI which was continued to be carried out manually, (ii) TANGEDCO accepted 13.79 lakh MT of coal valuing ₹411.63 crore without testing, (iii) the test results of samples to be received within 30 days were delayed beyond two to three months in case of MCL and more than one year in case of ECL, (iv) TANGEDCO used formula method for determination of calorific value though it was mandatory to use bomb calorimeter for testing, and (v) there was no coal Quality Monitoring Wing at Headquarters of TANGEDCO.

In five TPS studied in audit, the energy charges computed by TANGEDCO for billing were based on 'As Fired GCV' and higher by ₹1,805.35 crore during 2014-19 compared to the energy charges to be billed based on 'As Received GCV' as per CEA/CERC recommendations.

There is no periodical physical verification system in load ports and TANGEDCO has not determined transit loss for the past 18 years citing a pending legal case.

Coal consumption at power stations

Operational efficiency of TPS is regulated through Station Heat Rate (SHR), which depends on the quantity and quality of coal. The actual SHR was in excess of norm stipulated by TNERC in all TPS, which resulted in excess consumption of 56.85 lakh MT of coal valuing ₹2,317.46 crore throughout 2014–19. Moreover, TANGEDCO could not reduce specific coal consumption despite usage of higher proportion of imported coal having high calorific value in all TPS.

TANGEDCO suffered generation loss of 844 MU valued at ₹171.57 crore due to poor quality of coal during 2014–19.

TANGEDCO did not adhere to GOI guidelines for phasing out of accumulation of ash on land and had accumulated 62.15 MMT of ash in ash dykes in three TPS as on March 2019. The continued dumping of ash on land resulted in contamination of ground water, Buckingham canal and Kosasthalaiyar river.

3 Compliance Audit Observations relating to Power Sector Undertakings

Compliance Audit observations included in this Report highlight deficiencies in the management of Power Sector Undertakings, which resulted in serious financial implications. The major irregularities pointed out are:

Non-levy of Parallel Operation Charges and start-up power charges from Captive Generating Plants resulted in loss of revenue ₹22.91 crore and ₹23.85 crore respectively.

(Paragraphs 3.1 and 3.2)

4 Functioning of Public Sector Undertakings (other than Power Sector)

As on 31 March 2019, Tamil Nadu had 70 State Public Sector Undertakings (other than Power Sector) consisting of 64 working Companies, one working Statutory Corporation and five non-functional PSUs (all Companies). The working PSUs registered a turnover of ₹68,297.32 crore during 2018-19 as per their latest finalised accounts. This turnover was equal to 4.10 *per cent* of the Gross State Domestic Product indicating the role played by these State PSUs in the economy of the State.

Stake of Government of Tamil Nadu

As on 31 March 2019, the total investment (equity and long-term loans) in 70 PSUs was ₹21,716.83 crore. The investment consisted of 40.63 *per cent* towards equity and 59.37 *per cent* in long-term loans. The long term loans from the State Government constituted ₹2,836.55 crore (22 *per cent*) and the balance amount of ₹10,055.87 crore (78 *per cent*) from Banks and Financial Institutions. The investment has grown by 142.54 *per cent* from ₹8,953.89 crore in 2014-15 to ₹21,716.83 crore in 2018-19. The increase was mainly due to infusion of equity and loans from GoTN and other financial institutions to eight State Transport Undertakings.

The budgetary assistance received by these PSUs during the years 2014-19 ranged between ₹6,856.58 crore and ₹12,312.48 crore. The budgetary assistance of ₹12,312.48 crore received during the year 2018-19 included Equity:₹1,513.26 crore, Loans:₹2,167.07 crore and Grants/Subsidy:₹8,632.15 crore. GoTN has converted the loan in respect of TASCO and PSM totalling to ₹308.37 crore into equity. The subsidy/grants given by the State Government was primarily to procure food grains for distribution under Public Distribution System by Tamil Nadu Civil Supplies Corporation (₹6,000 crore) and to State Transport Undertakings (STUs) to compensate increase in price of diesel, reimbursement of loss on issue of concessional tickets to students and others (₹1,233.57 crore) during 2018-19.

Performance of State PSUs (other than Power Sector)

The 65 working PSUs, incurred losses in aggregate in all the five years during 2014-19 and the aggregate losses were in the range of ₹2,112.06 crore to ₹5,096.79 crore. As per the latest finalised accounts, out of 65 working PSUs, 38 PSUs earned a total profit of ₹780.54 crore and 22 PSUs incurred a total loss of ₹4,548.64 crore. Three PSUs neither earned profit nor incurred any loss during 2018-19 to which the entire deficit was compensated by GoTN in the form of subsidy/Grant. The remaining two PSUs are yet to commence their operations.

Return on State Government Funds

As on 31 March 2019, the investment of the State Government in 59 PSUs stood at ₹9,134.66 crore (Equity ₹6,989.14 crore and Interest free loan ₹2,145.52 crore). After deducting the dividend of ₹1,090.54 crore paid by the PSUs, the investment of State Government in these 59 PSUs on the basis of historical cost stood at ₹8,044.12 crore.

During 2014-19, the overall return on investment was negative and the same ranged between 47.11 to 156.73 *per cent.* The PSUs under Social sector reported positive return, however, the PSUs under Competitive Sector reported negative, making the overall results negative.

The present value of the funds infused in these PSUs at the end of March 2019 worked out to ₹10,394.62 crore and the overall return on investments computed on the present value of investments was also negative.

The overall position of net worth of 70 PSUs was negative in all the years and fluctuated between ₹7,026.87 crore and ₹18,354.31 crore during 2014-19.

The losses were mainly on account of poor performance by the State Transport Undertakings. However, as per the latest finalised accounts, 38 PSUs earned an aggregate profit of ₹780.54 crore. Out of which, 19 PSUs (other than Power Sector) proposed a dividend of ₹154.04 crore during 2018-19. The dividend payout ratio of PSUs which earned profit during 2014-19 ranged between 8.61 to 21.98 *per cent* only against the prescribed quantum of 30 *per cent*.

Coverage of this Report

This Part of the Report contains six compliance audit paragraphs involving financial effect of ₹120.19 crore.

5 Compliance Audit Observations relating to State PSUs (other than Power Sector)

Compliance Audit observations included in this part of the Report highlight deficiencies in the management of Public Sector Undertakings, which resulted in serious financial implications. The irregularities pointed out are broadly of the following nature:

Two PSUs *viz.*, **Tamil Nadu Cements Corporation Limited and Tamil Nadu Minerals Limited** working under the administrative control of Industries Department of Government of Tamil Nadu disregarded the directives of Ministry of Environment and Forest, GoI and continued to mine limestone without obtaining Environmental Clearance which resulted in payment of penalty of ₹57.72 crore and additional liability of ₹2.77 crore.

(Paragraph 5.1)

Tamil Nadu Arasu Cable TV Corporation Limited paid Customs Duty to the vendors without obtaining the proof of actual payment and did not levy penalty for delayed supply which resulted in undue favour of ₹37.43 crore.

(Paragraph 5.2)

TIDEL Park Limited extended undue benefit to the co-owners of the park to the extent of ₹5.63 crore due to non-recovery of proportionate cost of replacement of plant and machinery.

(Paragraph 5.3)

Non-adherence to the disbursement procedures of loan by **Tamil Nadu Industrial Investment Corporation Limited** resulted in siphoning of ₹1.07 crore by a loanee.

(Paragraph 5.4)

INTRODUCTION

Public Sector Undertakings of Government of Tamil Nadu

General

1 State Public Sector Undertakings (PSUs) consist of State Government Companies and Statutory Corporations. State PSUs are established to carry out activities of commercial nature keeping in view the welfare of people and occupy an important place in the State economy. As on 31 March 2019, there were 75 PSUs in Tamil Nadu, including 74 Government Companies (including one newly formed company and five non-functional government companies[5]) and one[6] Statutory Corporation under the audit jurisdiction of the Comptroller and Auditor General of India. One[7] Government Company was listed in the stock exchange.

2 The financial performance of the PSUs on the basis of latest finalised accounts up to March 2020 is covered in this report. The nature of PSUs and the position of accounts are indicated in table below:

Table 1: Nature of PSUs covered in the Report

Nature of PSUs	Total Number	Number of PSUs of which accounts are in arrear (total accounts in arrear) as on 31 March 2020			Number of PSUs of which accounts are in arrear (Total accounts in arrear) as on 31 March 2020
		Accounts upto 2018-19	Accounts upto 2017-18	Total	
Working Government Companies[8]	**69**	**65**	**3**	**68**[9]	4 (7)
Statutory Corporation	1	1	-	1	-
Total working PSUs	**70**	**66**	**3**	**69**	4 (7)
Non-Functional Government Companies	**5**	**1**	**1**	**2**	4[10] (39)
Total	**75**	**67**	**4**	**71**	**8 (46)**

The working PSUs registered a turnover of ₹1,29,350.66 crore as per their latest finalised accounts. This turnover was equal to 7.77 *per cent* of Gross State Domestic Product (GSDP) for the year 2018-19 (₹16,64,159 crore). The working PSUs incurred an aggregate loss of ₹16,944.30 crore as per their latest finalised accounts. As on March 2019, the State PSUs had employed 2.74 lakh employees.

5 Non-functional PSUs are those which have not been carrying on any business or operation and defined as 'inactive company' under Section 455 of the Companies Act, 2013, termed as "non-functional companies" in this Report.

6 Tamil Nadu Warehousing Corporation.

7 Tamil Nadu Newsprint and Papers Limited.

8 Government PSUs include other Companies referred to in Section 139(5) and 139(7) of the Companies Act 2013.

9 Tamil Nadu Police Transport Corporation Limited, incorporated in December 2015 has not finalised its first accounts (2015-16).

10 Tamil Nadu Goods Transport Corporation Limited is in the process of winding up since 1989-90 and its accounts are not anticipated.

There were five non-functional PSUs, out of which one PSU *viz.*, Southern Structurals Limited has finalized its accounts up to the year 2018-19. Tamil Nadu Goods Transport Corporation Limited had not submitted accounts since 1990-91 (arrear for 29 years) and the remaining three PSUs had arrears in accounts ranging from one to six years. These five PSUs had an investment of ₹95.47 crore towards capital (₹47.15 crore) and long term loans (₹48.32 crore). Though these PSUs are non-functional, concerted action needs to be taken to safeguard the assets of these PSUs.

Accountability framework

3 The procedure for audit of Government companies are laid down in Sections 139 and 143 of the Companies Act, 2013 (Act 2013). According to Section 2 (45) of the Act 2013, a Government Company means any company in which not less than fifty one *per cent* of the paid-up share capital is held by the Central Government or by any State Government or Governments or partly by the Central Government and partly by one or more State Governments, and includes a company which is a subsidiary company of such a Government Company. Besides, any other company[11] owned or controlled, directly or indirectly, by the Central Government, or by any State Government or Governments, or partly by the Central Government and partly by one or more State Governments is referred to in this Report as Government Controlled other Companies.

Further, as per sub-Section 7 of Section 143 of the Act 2013, the Comptroller and Auditor General of India (CAG) may, in case of any company covered under sub-Section (5) or sub-Section (7) of Section 139, if considered necessary, by an order, cause test audit to be conducted of the accounts of such Company and the provisions of Section 19A of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971 shall apply to the report of such test Audit. Thus, a Government Company or any other Company owned or controlled, directly or indirectly, by the Central Government, or by any State Government or Governments or partly by Central Government and partly by one or more State Governments is subject to audit by the CAG. The audit of the financial statements of a Company in respect of the financial years that commenced on or before 31 March 2014 shall continue to be governed by the provisions of the Companies Act, 1956.

Statutory audit

4 The financial statements of the Government Companies (as defined in Section 2 (45) of the Act 2013) are audited by Statutory Auditors, who are appointed by the CAG as per the provisions of Section 139(5) or (7) of the Act 2013. The Statutory Auditors submit a copy of the Audit Report to the CAG including, among other things, financial statements of the Company under Section 143(5) of the Act 2013. These financial statements are also subject to supplementary audit by the CAG within sixty days from the date of receipt of the audit report under the provisions of Section 143 (6) of the Act 2013.

[11] Ministry of Corporate Affairs- (Removal of Difficulties) Seventh Order 2014 dated 4 September 2014.

Audit of Statutory Corporation is governed by their respective legislations. In respect of the lone Statutory Corporation *viz.,* Tamil Nadu Warehousing Corporation, audit is conducted by Chartered Accountants and supplementary audit is conducted by the CAG, in pursuance of the State Warehousing Corporation Act, 1962.

Submission of Accounts by Public Sector Undertakings

5 ***Need for timely finalisation and submission***

According to Section 394 and 395 of the Companies Act 2013, Annual Report on the working and affairs of a Government Company, is to be prepared within three months of its Annual General Meeting (AGM) and as soon as may be after such preparation laid before the State Legislature together with a copy of the Audit Report and any comments upon or supplement to the Audit Report, made by the CAG. Similar provisions exist in the respective Acts regulating statutory corporations. This mechanism provides the necessary legislative control over the utilisation of public funds invested in the companies from the Consolidated Fund of the State.

Section 96 of the Companies Act, 2013 requires every company to hold AGM of the shareholders once in every calendar year. It is also stated that not more than 15 months shall elapse between the date of one AGM and that of the next. Further, Section 129 of the Companies Act, 2013 stipulates that the audited Financial Statement for the financial year has to be placed in the said AGM for their consideration. Section 129 (7) of the Companies Act, 2013 provides for levy of penalty like fine and imprisonment on the persons including directors of the company responsible for non-compliance with the provisions of Section 129 of the Companies Act, 2013.

Role of Government and Legislature

6 The State Government exercises control over the affairs of these PSUs through its administrative departments. The Chief Executive and Directors to the Board are appointed by the State Government.

The State Legislature also monitors the accounting and utilisation of Government investment in the PSUs. For this, the Annual Reports together with the Statutory Auditors' Reports and comments of the CAG, in respect of State Government Companies and Separate Audit Reports in case of Statutory Corporation are to be placed before the State Legislature under Section 394 of the Act 2013 or as stipulated in the respective Acts. The Audit Reports of the CAG are submitted to the Government under Section 19A of the CAG's (Duties, Powers and Conditions of Services) Act, 1971.

Investment by Government of Tamil Nadu in State Public Sector Undertakings

7 The Government of Tamil Nadu (GoTN) has high financial stakes in the PSUs. This is mainly of three types:

- **Share capital and loans** – In addition to the share capital contribution, GoTN also provides financial assistance by way of loans to the PSUs from time to time.

- **Special financial support** – GoTN provides budgetary support by way of grants and subsidies to the PSUs as and when required.
- **Guarantees** – GoTN also guarantees the repayment of loans with interest availed by the PSUs from Financial Institutions.

8 The sector-wise summary of investment in the PSUs as on 31 March 2019 is given below:

Table 2: Sector-wise investment in PSUs

Name of sector	Government Companies		Statutory Corporations		Total	Investment[12] (₹ in crore)		
	Working	Non-functioning	Working	Non-fun-ctioning		Equity	Long term loans	Total
Power	5	-	-	-	5	50376.03	125060.23	175436.26
Finance	10	-	--	-	10	1402.65	3395.27	4797.92
Service	21	1	1	-	23	6030.31	6419.49	12449.80
Infrastructure	15	1	-	-	16	609.75	1009.90	1619.65
Others	18	3	-	-	21	781.70	2067.76	2849.46
Total	**69**	**5**	**1**	**-**	**75**	**59200.44**	**137952.65**	**197153.09**

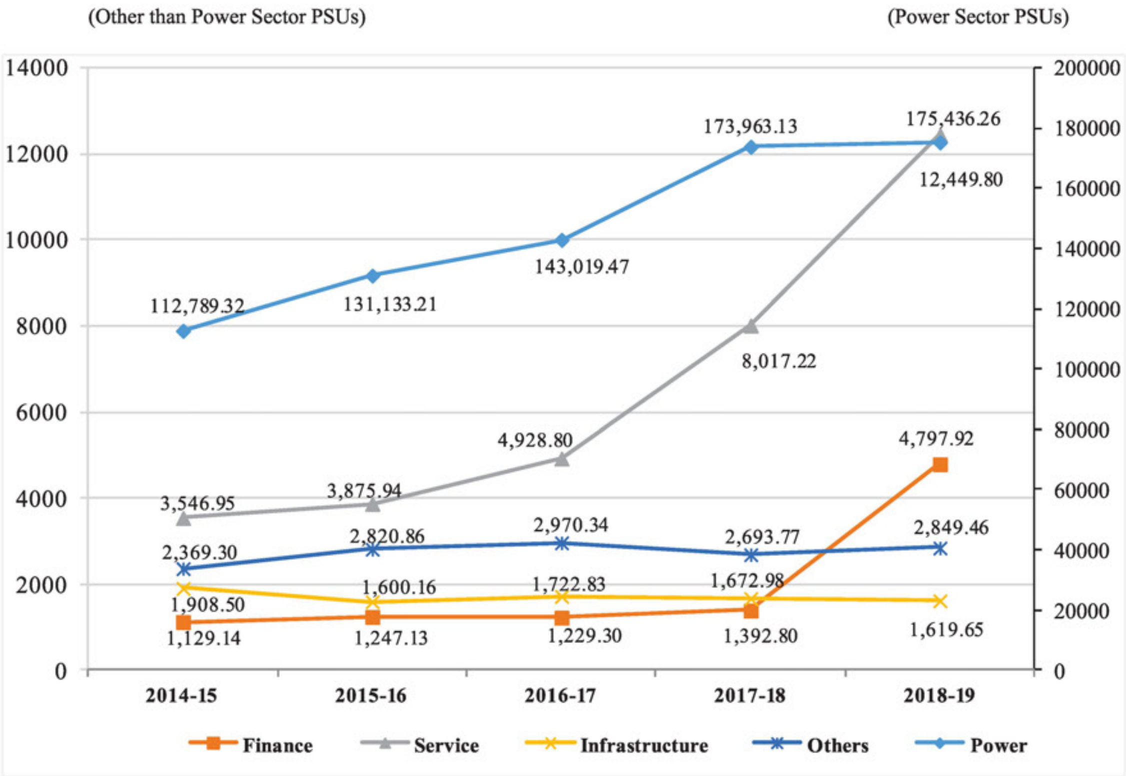
Source: Compiled based on information received from PSUs.

The thrust of PSU investment was mainly on power sector during the last five years. The investment of GoTN in power sector PSUs stood at ₹1,75,436.26 crore (88.98 *per cent*) at the end of March 2019.

9 The investment in various important sectors at the end of 31 March 2015 to 31 March 2019 is indicated in the chart below:

Chart 1: Sector-wise investment in PSUs

(Figures in ₹ crore)



12 Investments include equity and long term loans.

Keeping in view the huge investment in Power Sector, we are presenting the results of audit of five Power Sector PSUs in Part I[13] of this report and of the remaining 70 PSUs (other than power sector) in the Part II[14] of the report.

[13] Part I contains observations relating to Power Sector Companies: Chapter-I - Functioning of Power Sector Undertakings; Chapter-II -Performance Audit observations, and Chapter-III - Compliance Audit Observations.

[14] Part II contains observations relating to PSUs (other than Power Sector): Chapter-IV - Functioning of Public Sector Undertakings (Other than Power Sector), Chapter-V- Compliance Audit Observations.

PART-I

PART-I

Chapter-I

Functioning of Power Sector Undertakings

Introduction

1.1 The Power Sector companies play an important role in the economy of the State. Apart from providing critical infrastructure required for development of the State's economy, the sector also adds significantly to the Gross State Domestic Product (GSDP). A ratio of Power Sector PSUs' turnover to GSDP shows the extent of activities of PSUs in the State economy. The Compounded Annual Growth Rate (CAGR)[15] is a useful method to measure growth rate over multiple time periods. **Table 1.1** provides the details of turnover of power sector PSUs and GSDP of Tamil Nadu for the period of five years ended March 2019.

Table 1.1: Details of turnover of power sector PSUs *vis-a-vis* GSDP of Tamil Nadu

(₹ in crore)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Turnover of Power sector PSUs	38,422.49	45,670.27	48,489.71	48,843.45	61,053.34
GSDP of Tamil Nadu	10,72,678	11,76,500	13,02,639	14,61,841	16,64,159
Percentage of Turnover to GSDP of Tamil Nadu	3.58	3.88	3.72	3.34	3.67
Percentage of growth of turnover	14.31	18.86	6.17	0.73	25.00
Percentage of growth of GSDP	10.75	9.68	10.72	12.22	13.84
CAGR of Turnover					9.70
CAGR of GSDP					9.18

Source: Turnover as per the latest accounts finalised by the Power Sectors Undertakings and GSDP figures as per State Finance Audit Report of CAG of India for the year 2018-19 of GoTN.

The turnover of power sector undertakings has recorded continuous increase over previous years. The annual growth rate of turnover of power PSUs was fluctuating between 0.73 to 25 *per cent* during the five years ended 2018-19, whereas, the growth rate of GSDP decreased from 10.75 in 2014-15 to 9.68 in 2015-16 and thereafter increased year after year to 13.84 *per cent* in 2018-19. The share of turnover of these power sector undertakings to the GSDP was 3.58 *per cent* in 2014-15, then increased to 3.88 *per cent* in 2015-16 and decreased to 3.72 and 3.34 *per cent* in 2016-17 and 2017-18 respectively and increased marginally to 3.67 *per cent* in 2018-19. The CAGR of GSDP and turnover of Power Sector PSUs during five years ended 2018-19 were 9.18 and 9.70 *per cent* respectively.

Formation of Power Sector Undertakings

1.2 Tamil Nadu Electricity Board (TNEB) was formed on 1 July 1957 under the Electricity Supply Act of 1948 as a successor to the erstwhile Electricity Department of the Government of Madras and was responsible for

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[15] The compounded annual growth rate calculated as per the formula: ((Final Value/Beginning Value)^1/number of years)-1.

electricity generation, distribution and transmission, and it regulated the electricity supply in the State. Government of India (GOI) enacted Electricity Act, 2003 (Act) to consolidate the laws relating to generation, transmission, distribution, trading and use of electricity and promoting competition therein, protecting interest of consumers. Section 131 of the Act envisaged reorganisation of the State Electricity Boards (SEBs).

In pursuance of the above, Government of Tamil Nadu (GoTN) accorded approval (October 2008) for reorganisation of TNEB by establishing a holding company, by the name of TNEB Limited and two subsidiary companies namely, Tamil Nadu Transmission Corporation Limited (TANTRANSCO)[16] and Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO)[17] with the stipulation that these companies shall be fully owned by GoTN. TANTRANSCO (the transmission utility) was incorporated in June 2009 with an initial capital of ₹five crore; the holding company *viz.*, TNEB Limited and TANGEDCO (Generation and Distribution utility) were incorporated in December 2009 with an initial capital of ₹five crore each. GoTN notified (October 2010) Tamil Nadu Electricity (Reorganisation and Reforms) Transfer Scheme, 2010 (Scheme) for the purpose of transfer and vesting of property, interest in property, rights and liabilities of the TNEB in the State Government and re-vesting thereof by the State Government in corporate entities and also for the transfer of personnel of TNEB to corporate entities. As per the Scheme, assets and liabilities of transmission facilities were vested in TANTRANSCO and assets and liabilities of generation and distribution activities were vested in TANGEDCO and the Scheme came into force from 01 November 2010. Equity infusion in TANGEDCO and TANTRANSCO were made through its holding company *viz.,* TNEB Limited and there was no direct infusion of equity by State Government.

Besides these three companies, GoTN had already established (June 1991) Tamil Nadu Power Finance and Infrastructure Development Corporation Limited (TN PowerFin) to mobilise funds from public for financing the developmental works of erstwhile TNEB. In December 2008, GoTN established Udangudi Power Corporation Limited (UPCL)[18] as a joint venture project with equity participation of M/s BHEL Limited, to construct 2x800 MW Super critical thermal power station at Udangudi in Thoothukudi District as a subsidiary of erstwhile TNEB. Thus, the State had five Power Sector undertakings as on 31 March 2019. Audit of these power sector undertakings is governed by Sections 139 and 143 of the Companies Act, 2013. The financial statements of these companies are audited by the Statutory Auditors appointed by the CAG subject to supplementary audit by the CAG.

16 Comprises all the Assets, Liabilities and proceedings belonging to the Tamil Nadu State Electricity Board concerning the transmission of electricity in the State

17 Comprises all the Assets, Liabilities and proceedings belonging to the Tamil Nadu Electricity Board concerning Generation and distribution of electricity in the area of supply to all the Circles of Tamil Nadu.

18 Presently functioning as 100 *per cent* subsidiary of TANGEDCO.

Disinvestment, restructuring and privatisation of Power Sector Undertakings

1.3 On reorganisation of TNEB, the stake in UPCL was transferred to TANGEDCO. The shares of BHEL were acquired by TANGEDCO in March 2013 and at present UPCL is a fully owned subsidiary of TANGEDCO. UPCL decided (June 2013) to merge with TANGEDCO and accordingly, the amalgamation petition was filed before the High Court of Madras. However, the orders are awaited. No disinvestment has taken place in power sector undertakings during the period 2014-19.

Investment in Power Sector Undertakings

1.4 The activity-wise summary of investment in the power sector undertakings as on 31 March 2019 is given in **Table 1.2**.

Table 1.2: Activity-wise investment in power sector undertakings

Activity	Number of undertakings	Investment (₹ in crore)		
		Equity	Long term loans	Total
Generation and Distribution of Power[19]	2	19,843.89	106,100.32	125,944.21
Transmission of Power	1	4,824.37	16,942.81	21,767.18
Others[20]	2	25,707.77	2,017.10	27,724.87
Total	**5**	**50,376.03**	**125,060.23**	**175,436.26**

Source: Compiled based on information received from PSUs/ Annual accounts.

As on 31 March 2019, the total investment (equity and long term loans) of the State Government in five power sector undertakings was ₹175,436.26 crore. The investment consisted of 28.71 *per cent* towards equity and 71.29 *per cent* in long-term loans.

The long term loans advanced by the State Government constituted ₹17,101.17 crore (13.67 *per cent*) and balance ₹1,07,959.06 crore (86.33 *per cent*) were availed from Banks and Financial Institutions. The loan from State Government comprised ₹1,000 crore each during 2014-15 and 2015-16; ₹2,000 crore during 2016-17 under Financial Restructuring Plan of DISCOM, a Scheme introduced in October 2012 by GOI to ensure turnaround of DISCOMs. Further during 2016-17, under Ujwal DISCOM Assurance Yojana (UDAY Scheme), GoTN sanctioned an interest-free loan of ₹22,815 crore (75 *per cent* of the outstanding debts of ₹30,420 crore) to TANGEDCO. Out of the above interest-free loan, a sum of ₹9,126 crore was converted as grant during the years 2017-18 and 2018-19.

Budgetary Support to Power Sector Undertakings

1.5 GoTN provides financial support to power sector undertakings in various forms through annual budget. The summarised details of budgetary

19 Includes Udangudi Power Corporation Limited, which is yet to commence the operation.

20 Holding company TNEB Limited and Tamil Nadu Power Finance and Infrastructure Development Corporation Limited

outgo towards equity, loans and grants/subsidies during the last three years ended March 2019 to the power sector undertakings are given in **Table 1.3**.

Table 1.3: Details of budgetary support to power sector undertakings

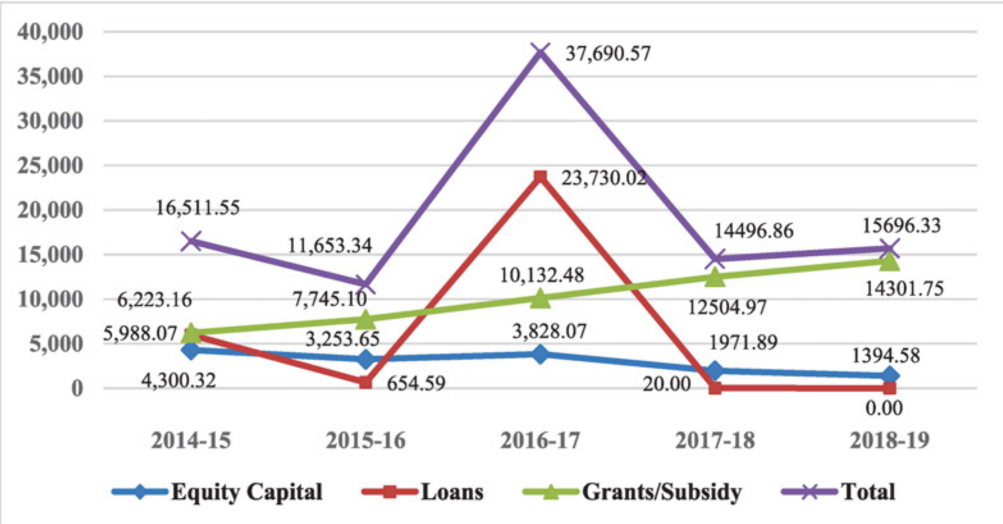
(₹ in crore)

Sl. No.	Particulars[21]	2016-17		2017-18		2018-19	
		Number of PSUs	Amount	Number of PSUs	Amount	Number of PSUs	Amount
1	Equity Capital	1	3,828.07	1	1,971.89	2	1,394.58
2	Loans	2	23,730.02	1	20.00	--	--
3	Grants/Subsidy	1	10,132.48	1	12,504.97	1	14,301.75
4	Total budgetary support(1+2+3)	2	37,690.57	2	14,496.86	3	15,696.33
5	Loan repayment/written off	--	--	--	--	--	--
6	Loan converted into equity	--	--	--	--	--	--
7	Loan converted into grants	--	--	1	4,563	1	4,563.00
8	Guarantees issued	---	---	1	500.00	2	17,439.42
9	Guarantee Commitment	2	21,703.36	2	27,194.85	2	35,052.95

Source: Compiled based on information received from PSUs

The details of budgetary outgo towards equity, loans and grants/ subsidies for the last five years ended March 2019 are given in **Chart 1.1**.

Chart 1.1: Budgetary Outgo towards Equity, Loans and Grants/Subsidies



Source: Data received from the Company

The budgetary assistance received by these PSUs during 2014-19 ranged between ₹11,653.34 crore (2015-16) and ₹37,690.57 crore (2016-17). The budgetary assistance of ₹15,696.33 crore received during the year 2018-19 included ₹1,394.58 crore as equity, and ₹14,301.75 crore as grants/subsidy. The budgetary support to these power sector PSUs were made primarily to meet the revenue gap on account of subsidised tariff. GOI introduced (November 2015) UDAY Scheme with an objective to improve the financial

21 Amount represents outgo from State Budget only.

and operational efficiency and financial turnaround of State-owned Power Distribution Companies (DISCOMs). GoTN agreed to implement the UDAY Scheme in January 2017. In pursuance of the Scheme, GoTN sanctioned a sum of ₹22,815 crore (75 *per cent* of ₹30,420 crore of outstanding debt as on 30 September 2015) as interest-free loan during 2016-17 to TANGEDCO to repay its interest-bearing loans. Out of this interest-free loan, a sum of ₹4,563 crore each was converted as grant during 2017-18 and 2018-19. The details of the physical and financial targets under UDAY Scheme and the status of its implementation are discussed in paragraph 1.21 to 1.25 of this Chapter.

Besides the budgetary support, GoTN also provides guarantee for PSUs to seek financial assistance from Banks and Financial Institutions. PSUs are liable to pay guarantee fee to the State Government upto 0.5 *per cent* of guarantee amount utilised for raising cash credit from banks and loans from other sources including Letters of Credit. The guarantee commitment given by GoTN stood at ₹21,703.36 crore at the end of March 2017 and increased to ₹35,052.95[22] crore at the end of March 2019.

The guarantee fee payable for the year 2018-19 was ₹172.14 crore by three PSUs, *viz*. TANGEDCO, TANTRANSCO and TN Power Finance. During the year 2018-19, TANGEDCO and TN Power Finance paid guarantee fee of ₹ 112.41 crore to the government. The accumulated guarantee fee payable[23] stood at ₹1,270.93 crore at the end of March 2019.

Reconciliation with Finance Accounts of GoTN

1.6 The figures in respect of equity, loans and guarantees outstanding as per records of State PSUs should agree with that of the figures appearing in the Finance Accounts of GoTN. In case the figures do not agree, the concerned PSUs and the Finance Department should carry out reconciliation of the differences. Differences were noticed in three power sector PSUs and the position as on 31 March 2019 is given in **Table 1.4**.

Table 1.4: Equity/Guarantee outstanding as per Finance Accounts *vis-à-vis* records of power sector undertakings

(₹ in crore)

Name of power sector PSUs	Equity			Outstanding guarantee		Difference
	As per Finance Accounts of GoTN	As per records of power sector PSUs	Difference	As per Finance Accounts	As per records of power sector PSUs	
TNEB Limited	24,417.77	24,417.77	-	--	--	--
TANTRANSCO	0.00	0.05	0.05	1,838.94	1,838.94	--
TANGEDCO	0.00	0.05	0.05	36,967.47	33,214.01	3,753.46
TN Power Fin	1,290.00	1,290.00	-	1,964.20	-	1,964.20
Total	**25,707.77**	**25,707.87**	**0.10**	**40,770.61**	**35,052.95**	**5,717.66**

Source: Compiled based on information received from PSUs and Finance Accounts.

[22] As per information furnished by the Companies
[23] TANGEDCO and TANTRANSCO

The reconciliation of difference (₹five lakh) under Equity was persisting since June 2009, in respect of TANTRANSCO and TANGEDCO. The issue of reconciliation of differences was also taken up with the PSUs/Finance Department from time to time. We, therefore, recommend that the State Government and PSUs should reconcile the differences in a time-bound manner.

Submission of accounts by Power Sector Undertakings

1.7 Timeliness in preparation of accounts by Power Sector Undertakings

Out of five power sector undertakings under the audit purview of CAG as on 31 March 2019, accounts for the year 2018-19 were submitted only by two PSUs by 30 September 2019 as per statutory requirement[24]. The details of arrears in submission of accounts of power sector undertakings for the last five years ended 31 March 2019 are given in **Table 1.5**.

Table 1.5: Position relating to submission of accounts by Power Sector Undertakings

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1.	Number of PSUs	5	5	5	5	5
2.	Number of accounts submitted during current year	6	5	4	5	6
3.	Number of PSUs which finalised accounts for the current year	2	2	2	4	4
4.	Number of previous year accounts finalised during current year	4	3	2	1	2
5.	Number of PSUs with arrears in accounts	3	3	3	1	1
6.	Number of accounts in arrears	3	3	4	2	1[25]
7.	Extent of arrears	One year	One Year	Two years	Two years	One year

Source: Compiled based on accounts of working PSUs received during the period October 2018 to December 2019.

TNEB Limited is yet to submit its accounts for the year 2018-19 (May 2020).

Comments on Accounts of Power Sector Undertakings

1.8 Five power sector Companies forwarded their six audited accounts to the Accountant General during the period from 1 October 2018 to 30 December 2019. All the six accounts were selected for supplementary audit. The Audit Reports of Statutory Auditors and supplementary audit conducted by the CAG indicated that the quality of accounts needs to be improved substantially. The details of aggregate money value of the comments of

[24] Udangudi Power Corporation Limited and Tamil Nadu Power Finance and Infrastructure Development Corporation Limited

[25] The TNEB Limited is yet to submit the accounts for the year 2018-19. The figures for the year 2017-18 has been considered in this Report for the purpose of arriving at working results.

Statutory Auditors and the CAG on the accounts of 2016-19 are as given in **Table 1.6**.

Table 1.6: Impact of audit comments on Power Sector Companies

(₹ in crore)

Sl. No.	Particulars	2016-17		2017-18		2018-19	
		No. of accounts	Amount	No. of accounts	Amount	No. of Accounts	Amount
1.	Decrease in profit	--	--	--	--	--	--
2.	Increase in profit	--	--	--	--	--	--
3.	Increase in loss	2	12,355.38	2	12,668.57	2	7,242.70
4.	Decrease in loss	1	15.73	--	--	--	--
5.	Non-disclosure of material facts	--	--	--	--	--	--
6.	Errors of classification	1	86.34	--	--	1	91.89

Source: Compiled from comments of the Statutory Auditors/ CAG in respect of Government Companies

In respect of the annual accounts of the year 2018-19, the Statutory Auditors had issued un-qualified certificate in respect of two PSUs[26] and issued adverse certificate in respect of other two PSUs *viz.*, TANGEDCO and TANTRANSCO.

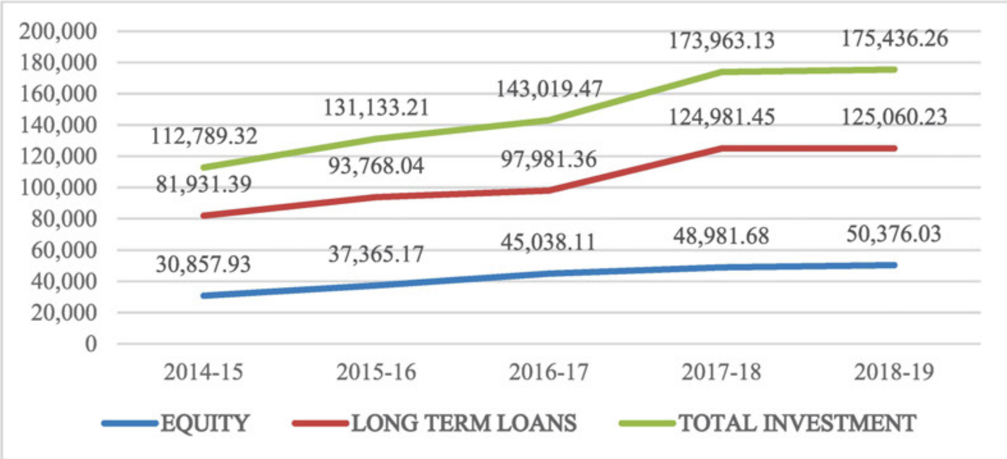
Performance of Power Sector Undertakings

1.9 The financial position and working results of power sector Companies are detailed in **Annexure-1** as per their latest finalised accounts as of December 2019. The Public Sector Undertakings are expected to yield reasonable return on investment made by Government in the undertakings. The total investment in power sector PSUs as on 31 March 2019 was ₹1,75,436.26 crore consisting of ₹50,376.03 crore as equity and ₹1,25,060.23 crore as long term loans. The year wise status of total investment, equity and long term loans relating to five years' period 2014-19 is shown in **Chart 1.2**

[26] Udangudi Power Corporation Limited and Tamil Nadu Power Finance and Infrastructure Development Corporation Limited

Chart 1.2: Total investment in power sector undertakings

(₹ in crore)



Source: Data received from the Companies in the respective years

The investment has grown by 55.54 *per cent* from ₹1,12,789.32 crore in 2014-15 to ₹1,75,436.26 crore in 2018-19. The investment increased due to addition of ₹19,518.10 crore and ₹43,128.84 crore towards equity and long term loans respectively during 2014-19. The profitability of a company is traditionally assessed through return on investment, return on equity and return on capital employed. Return on investment measures the profit or loss made in a fixed year relating to the amount of money invested in the form of equity and long term loans and is expressed as a percentage of profit to the total investment. Return on capital employed is a financial ratio that measures the company's profitability and the efficiency with which its capital is used and is calculated by dividing company's earnings before interest and taxes by capital employed. Return on Equity is a measure of performance calculated by dividing net profit after tax by shareholders' funds.

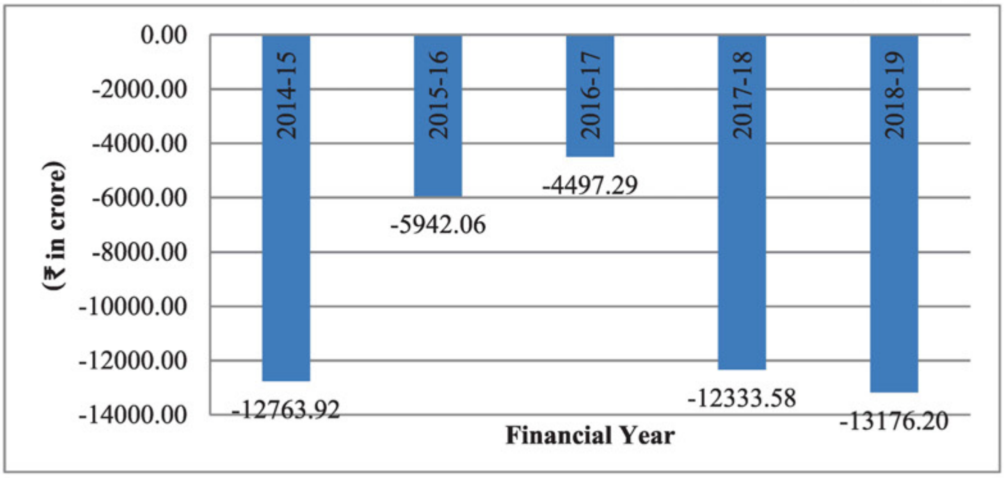
Return on Investment

1.10 Return on investment (ROI) is the percentage of profit or loss to the total investment. The overall position of profit/losses[27] earned/incurred by these power sector undertakings during 2014-19 is depicted below in **Chart 1.3.**

[27] Figures are as per the latest finalised accounts during the respective years.

Chart 1.3: Overall Profit/Losses earned/incurred by Power Sector PSUs

(₹ in crore)



The power sector PSUs incurred aggregate loss in all the five years ended 2018-19. The aggregate loss during 2018-19 stood at ₹13,176.20 crore **(Annexure-1)** against the losses of ₹12,763.92 crore incurred in 2014-15. Position of Power Sector Undertakings which earned profit/incurred loss during 2014-15 to 2018-19 is given in **Table 1.7.**

Table 1.7: Power Sector Undertakings which earned /incurred profit/loss

Financial year	Total PSUs[28] in Power sector	Number of PSUs which earned profits during the year	Number of PSUs which incurred loss during the year	Number of PSUs which had marginal profit/loss[29] during the year
2014-15	5	1	2	2
2015-16	5	1	3	1
2016-17	5	1	3	1
2017-18	5	1	3	1
2018-19[30]	5	1	3	1

Source: As per the annual accounts.

As per the latest finalised accounts of these five PSUs, only one PSU (Tamil Nadu Power Finance and Infrastructure Development Corporation Limited) earned a profit of ₹83.20 crore, three PSUs incurred loss of ₹13,259.40 crore and one PSU (Udangudi Power Corporation Limited) did not commence the operation and its entire expenditure incurred was being treated as capital work in progress.

(a) Return on the basis of historical cost of investment

1.11 In three power sector undertakings, the State Government infused funds (including the funds to erstwhile TNEB) in form of equity, interest free loans and grants/subsidies. In respect of TANTRANSCO and TANGEDCO, the State Government did not infuse equity directly as these two PSUs are 100 *per cent* subsidiaries of TNEB Limited.

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28 Including Udangudi Power Corporation Limited, which is yet to commence its operations.

29 Profit/loss equal to or less than ₹ 20 lakh.

30 For the year 2018-19, one PSU *viz*., TNEB Limited has not finalised the accounts

The Return on Investment from three PSUs has been calculated on the investment made by the Government in the form of equity and loans. In the case of loans, only the interest-free loans are considered as investment since the Government does not receive any interest on such loans and are therefore of the nature of equity investment except to the extent that the loans are liable to be repaid as per terms and conditions of repayment. Further, the funds made available in the forms of grants/subsidy have not been reckoned as investment since they do not qualify to be considered as investments.

The investment of the State Government in these PSUs has been arrived at by considering the equity (initial equity net of accumulated losses upto 2009-10 plus the equity infused during the later years), adding interest free loan. The dividend paid by the PSUs has been deducted from the total investment in the respective years. The total equity funds infused by the State Government in these three PSUs (TNEB Ltd, TN PowerFin and UPCL) up to March 2010 stood at ₹60.06[31] crore. During 2010-19, GoTN infused a total fund of ₹37,227.37 crore (Equity: ₹23,396.75 crore and Interest free loan: ₹13,830.62 crore). During 2010-19, State Government had received a total dividend of ₹ 162.17 crore which has been deducted from the investment and thus, the net investment at the end of March 2019 stood at ₹37,125.26 crore.

Since the profit earned or losses incurred by the subsidiary companies would have ultimate bearing on the holding company (TNEB Limited), the profit/loss of its subsidiaries *viz*., TANGEDCO and TANTRANSCO have been added to the net earnings (loss). Accordingly, the total earnings were worked out by summing up the profit/loss of all the five PSUs. The ROI was worked out on investment on historical cost basis on the net earning worked out as above for the years 2014-19 are given in **Table 1.8.**

Table 1.8: Return on State Government investment on historical cost basis

(₹ in crore)

Year	Funds infused by GoTN in the form of equity and interest free loan	Total Earnings Profit/(loss)	Return on Investment (in *per cent)*
(1)	(2)	(3)	(4)=(3/2x100)
2014-15	17,822.23	(-)12,763.92	(-)71.62
2015-16	20,348.21	(-)5,942.06	(-)29.20
2016-17	47,647.39	(-)4,497.29	(-)9.44
2017-18	45,027.06	(-)12,333.58	(-)27.39
2018-19	37,125.26[32]	(-)13,176.20	(-)35.49

Source: Latest finalised accounts in the respective years

The aggregate return on investment of five PSUs were negative in all the five years during 2014-19 and it ranged between 9.44 (2016-17) and 71.62 (2014-15) *per cent* of the investment. During 2014-15, the power sector PSUs reported a total loss of ₹12,763.92 crore and the position improved

31 Net of capital invested and accumulated loss of ₹ 27,708.60 crore of erstwhile Tamil Nadu Electricity Board plus equity infused by State Government in UPCL, TN Powerfin and initial equity invested in TANGEDCO and TANTRANSCO.

32 As per the finance accounts of the Government of Tamil Nadu for the year 2018-19 and consolidation of various loans sanctioned till 31 March 2018 as per GO No. 72 dated 25.02.2019

significantly during 2015-16 and 2016-17, the loss decreased to ₹5,942.06 crore and ₹4,497.29 crore respectively. The decrease in loss was mainly on account of tariff revision implemented with effect from December 2014. However, during 2017-18 and 2018-19, the loss increased to ₹12,333.58 crore and to ₹13,176.20 crore respectively. Audit noticed that in spite of receipt of grant of ₹9,126 crore under UDAY Scheme (during the year 2017-18 and 2018-19), power sector PSUs witnessed huge loss during the above years. In spite of tariff revision in August 2017, the loss continued. During the year 2018-19, the loss of the TANGEDCO was increased by ₹4,862.64 crore mainly due to increase in cost of power purchase and generation as well as increase in employee and finance costs which together summed up to additional cost of ₹7,396.54 crore despite increase in revenue by ₹2,533.90 crore in 2018-19.

Return on investment on the basis of historical cost of investment with UDAY Grant

1.11.1 A portion of interest-free loan given to power sector PSUs under UDAY Scheme during 2016-17 was converted as grant during 2017-18 and 2018-19. Since this interest-free loan was given by GoTN to take over the debts of DISCOM due to banks and financial institutions, this amounted to substitution of loan in another form. On account of conversion of interest-free loan into grant to the tune of ₹9,126 crore under UDAY Scheme, the total investment worked out to ₹ 46,251.26 crore at the end of March 2019. After considering this grant as investment, the return on investment during 2018-19 was still negative.

(b) On the basis of present value of the investment

1.12 In view of the significant investment by Government in five Power Sector PSUs, return on such investment is essential from the perspective of the State Government. Traditional calculation of return based only on historical cost of investment may not be a correct indicator of the adequacy of the return on the investment since such calculations ignore the present value of money. The present value of the Government investments has been computed to assess the rate of return on the present value of investments of GoTN in the State PSUs as compared to historical value of investments. In order to bring the historical cost of investments to its present value at the end of each year upto 31 March 2019, the past investments/year-wise funds infused by the GoTN in the State PSUs have been compounded at the year-wise average rate of interest on Government borrowings which is considered as the minimum cost of funds to the Government for the concerned year. Audit noticed that since 2010-11 these PSUs in aggregate did not generate positive return on investments. The quantum of loss and its percentage to its present value has been calculated and depicted as negative figures in **Table 1.9.**

The Present value (PV) of the State Government investment in power sector undertakings was computed on the basis of following assumptions:

- In addition to equity infused, interest-free loans (IFL) have been considered as investment infusion by the State Government as no amount of interest free loans have been repaid by the power sector PSUs. Further, in those cases where interest free loan given to the PSUs were converted into grant have been deducted from the amount of interest free loans and added to the Grants of that year.

- The dividend paid by the PSUs has been deducted from the total investment in the respective years.
- The average rate of interest on government borrowings for the concerned financial year[33] was adopted as compounded rate for arriving at PV since they represent the cost incurred by the Government towards investment of funds for the year and therefore as the minimum expected rate of return on investments made by the Government.

1.13 The consolidated position of the PV of the State Government investment and the total earnings relating to the five[34] power sector undertakings since inception of these companies till 31 March 2019 is indicated in **Table 1.9**.

Table 1.9: Year wise details of investment by the State Government and PV of Government funds since inception to 2018-19

(₹ in crore)

Financial year	Present value of total investment at the beginning of the year	Equity infused by the State Government during the year	IFL given by the State Government during the year	IFL converted as grant during the year	Dividend paid by the PSUs	Total investment at the end of the year after adjusting dividend	Average rate of interest on government borrowings (in %)	Present value of total investment at the end of the year	Minimum expected return to recover cost of funds for the year	Total Earnings for the year
(1)	(2)	(3)	(4)	(5)	(6)	(7)= (2+3+4-6)	(8)	(9)=(7+ (7x8/100))	(10)= (7x8/100)	(11)
Upto 2009-10	--	60.06	---	---	5.00	55.06	7.29	59.07	4.01	---
2010-11	59.07	2085.70	---	---	10.00	2134.77	7.53	2295.52	160.75	(-)10230.19
2011-12	2295.52	2409.87	2000.00	---	5.00	6700.39	7.43	7198.23	497.84	(-)12612.18
2012-13	7198.23	2000.00	913.00	---	5.00	10106.23	7.43	10857.12	750.89	(-)13225.57
2013-14	10857.12	2153.00	962.00	---	5.00	13967.12	7.90	15070.53	1103.40	(-)11569.52
2014-15	15070.53	4300.33	1000.00	---	31.73	20339.13	8.12	21990.66	1651.54	(-)12763.92
2015-16	21990.66	2558.50	---	---	32.52	24516.64	8.38	26571.14	2054.49	(-)5942.06
2016-17	26571.14	4523.10	22815.00	---	38.92	53870.32	8.11	58239.20	4368.88	(-)4497.29
2017-18	58239.20	1971.67	-4563.00	4563.00	29.00	55618.87	8.53	60363.16	4744.29	(-)12333.58
2018-19	60363.16	1394.58	-9296.38	4563.00	--	52461.36	8.27	56799.92	4338.55	(-)13176.20
Total		**23456.81**	**13830.62**[35]	**9126.00**	**162.17**					

As discussed in sub-para (a) above, the total historical cost of funds infused by the State Government in three power sector undertakings stood at ₹37,125.26 crore. The PV of funds infused by the State Government upto 31 March 2019, computed as per the assumptions stated above worked out to ₹56,799.92 crore.

33 The average rate of interest on government borrowings was adopted from the Reports of the CAG of India on State Finance Audit Report (GoTN) for the concerned year wherein the calculation for the average rate for interest paid = Interest Payment/ [(Amount of previous year's Fiscal Liabilities + Current year's Fiscal Liabilities)/2]*100.

34 The aggregate of the profit/loss of all the power sector undertakings including the subsidiary companies are considered to assess the overall results on the total funds invested.

35 As per the finance accounts of the Government of Tamil Nadu for the year 2018-19 and consolidation of various loans sanctioned till 31 March 2018 as per GO No. 72 dated 25.02.2019

As the return on investment worked out on historical cost of investment was negative in all the years under review, the return on investment was not computed on the present value.

Out of the total loss of ₹13,176.20 crore at the end of 2018-19, the loss reported by TANGEDCO alone was ₹12,623.41 crore (95.80 *per cent*). The overall losses and the accumulated losses resulting in erosion of net worth is discussed in paragraph 1.14.

Return on investment on the present value of investment with UDAY Grant

1.13.1 Further, the Government had converted the interest free loan of ₹9,126 crore into grant during the years 2017-18 and 2018-19 to TANGEDCO which was sanctioned (during 2016-17) under UDAY Scheme (of ₹22,815 crore) for taking over of interest bearing debts due to Banks and Financial Institutions. After considering the above grant as investment, the PV at the end of 2018-19 worked out to ₹67,102.05 crore and the return on investment was still in negative.

Erosion of net worth

1.14 Net worth means the sum total of the paid up capital and free reserves and surplus minus accumulated losses and deferred revenue expenditure. Essentially, it is a measure of what equity is worth to the owners. A negative net worth indicates that the entire investment by the owners has been wiped out by accumulated losses and deferred revenue expenditure. The details of paid up capital, accumulated losses and deferred revenue expenditure and the resultant net worth in five PSUs during 2014-19 are given in **Table 1.10.**

Table 1.10: Details showing the net worth of Power Sector PSUs

(₹ in crore)

Year	Paid up capital at the end of the year	Accumulated Profit(+)/Loss (-) at the end of the year	Deferred revenue expenditure	Net worth
(1)	(2)	(3)	(4)	(5)=(2+3-4)
2014-15	26,557.62	(-) 67,118.24	27.68	(-) 40,588.30
2015-16	34,283.10	(-) 49,214.73	67.73	(-) 14,999.36
2016-17	40,514.91	(-) 55,374.53	65.24	(-) 14,924.86
2017-18	47,009.77	(-) 73,907.27	67.62	(-) 26,965.12
2018-19	50,376.03	(-) 92,027.97	43.56	(-) 41,695.50

The State Government continued to provide financial support to these PSUs by infusing substantial equity during 2014-19. Despite infusion of substantial funds to the tune of ₹33,829.80 crore (Equity: ₹14,748.18 crore; interest- free loans: ₹9,955.62 crore and UDAY grant ₹9,126.00 crore) during 2014-15 to 2018-19, the aggregate net worth of Power Sector PSUs was negative in all the five years. Though there was a marginal improvement in the year 2016-17, the net worth deteriorated further during 2018-19 and the net worth of all the five PSUs stood at ₹41,695.50 crore at the end of March 2019. At the end of March 2019, erosion of net worth in TANGEDCO was at ₹ 68,160.02 crore. As per the latest audited annual accounts, the overall accumulated losses of the Power Sector Undertakings was ₹ 92,027.97 crore as against the equity capital of ₹50,376.03 crore. At the end of March 2019, only TN Powerfin was with a positive net worth of ₹ 1,570.99 crore with a paid up capital of ₹1,290 crore.

Dividend Payout

1.15 The State Government had formulated (May 2014) a dividend policy, under which all PSUs were required to pay a minimum return of 30 *per cent* of net profit after tax or 30 *per cent* of the paid-up share capital, whichever was higher, subject to availability of disposable profits. Out of the five power sector PSUs, State Government had invested funds directly only in two PSUs (TNEB Limited and TN Powerfin). The details of total equity infused by the Government, equity infused in the PSUs which earned profit and the dividend paid by the PSUs are given in **Table 1.11.**

Table 1.11: Dividend payout ratio in Power Sector PSUs during 2014-19

(₹ in crore)

Year	Total PSUs where equity infused by GoTN		PSUs which earned profit during the year		PSUs which declared/paid dividend during the year		Dividend payout ratio
	Number of PSUs	Equity infused by GoTN	Number of PSUs	Equity infused by GoTN	Number of PSUs	Dividend declared/ paid by PSUs	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)= 7/5x100
2014-15	2	12,943.90	1	90.00	1	31.73	35.26
2015-16	2	15,502.40	1	90.00	1	32.52	36.13
2016-17	2	20,025.50	1	90.00	1	38.92	43.24
2017-18	2	21,997.17	1	90.00	1	29.00	32.22
2018-19	2	25,707.77	1	1,290.00	---	---	---

Source: Latest finalised accounts in the respective years

Out of the five PSUs, only one State Power Sector PSU (TN Powerfin) had been earning profit continuously and declaring dividend every year. The Dividend Payout ratio was in the range of 32.22 to 43.24 *per cent* during 2014-18. During 2018-19, no power sector PSU declared dividend.

Return on Equity

1.16 Return on Equity (ROE) is a measure of financial performance to assess how effectively management is using company's assets to create profits and is calculated by dividing net income (*i.e.*, net profit after taxes) by shareholders' funds. It is expressed as a percentage and can be calculated for any company if both the net income and shareholders' funds are in positive numbers.

Shareholders' fund of a company is calculated by adding paid up capital and free reserves net of accumulated losses and deferred revenue expenditure. It reveals how much would be left for a company's stakeholders if all assets were sold and all debts paid. A positive shareholders' fund reveals that the company has enough assets to cover its liabilities while negative figures means that liabilities exceed the assets. ROE has been computed in respect of five power sector undertakings (including the two subsidiary companies) where funds have been infused by the State Government. The details of shareholders' funds and ROE relating to five PSUs during 2014-19 are given in **Table 1.12**.

Table 1.12: ROE of five power sector undertakings where funds infused by GoTN

(₹ in crore)

Year	Net income/Total earnings for the year (after tax)	Shareholders' funds	ROE (in percentage)
2014-15	(-)12,763.92	(-) 40,588.30	--
2015-16	(-)5,942.06	(-) 14,999.36	--
2016-17	(-)4,497.29	(-) 14,924.86	--
2017-18	(-)12,333.58	(-) 26,965.12	--
2018-19	(-)13,176.20	(-) 41,695.50	--

Source: Latest finalised accounts in the respective years

As can be seen from the above table, during the last five years ending 2018-19, the Net Income was negative and thus, the ROE could not be worked out. However, negative shareholders' funds indicate that the liabilities of these PSUs have exceeded the assets and instead of paying returns to the shareholders, the shareholders owe money.

Return on Capital Employed

1.17 Return on Capital Employed (ROCE) is a ratio that measures the company's profitability and efficiency with its capital employed.

ROCE is calculated by dividing a company's earnings before interest and taxes (EBIT) by the capital employed[36]. The details of ROCE of power sector undertakings during the years from 2014-15 to 2018-19 are given in **Table 1.13.**

Table 1.13: Return on Capital Employed

Year	EBIT (₹ in crore)	Capital Employed (₹ in crore)	ROCE (%)
2014-15	(-)2,608.88	52,788.20	(-)4.94
2015-16	5,546.84	89,283.28	6.21
2016-17	6,904.08	96,842.03	7.13
2017-18	(-)1,553.53	98,016.33	(-)1.58
2018-19	(-)932.68	83,364.73	(-)1.12

Source: Annual accounts and information received from the PSUs

The capital employed in the power sector PSUs increased over the years and stood at ₹83,364.73 crore at the end of March 2019. The ROCE of Power Sector PSUs was negative at 4.94 *per cent* during 2014-15, the position improved in subsequent years and reached positive during 2015-16 and 2016-17 to 6.21 and 7.13 *per cent* respectively. Again, the ROCE turned negative at 1.58 *per cent* and 1.12 during 2017-18 and 2018-19 respectively on account of loss in TANGEDCO.

[36] Capital employed = Shareholders funds (after deducting accumulated losses) plus long term loans.

Analysis of Long Term Loans of the Companies

1.18 The analysis of the long term loans of the companies which had leverage during 2014-19 was carried out to assess the ability of the companies to service the debt owed by the companies to Government, banks and other financial institutions. This is assessed through Interest Coverage Ratio and Debt Turnover Ratio.

Interest Coverage Ratio

1.19 Interest coverage ratio (ICR) is used to determine the ability of a company to pay interest on outstanding debt and is calculated by dividing a company's earnings before interest and taxes (EBIT) by interest expenses in the same period. Lower the ratio, lesser the ability of the company to pay interest on debt. An interest coverage ratio of below one indicates that the company was not generating sufficient revenues to meet its interest expenses. The details of interest coverage ratio in power sector companies which had interest burden during the period from 2014-15 to 2018-19 are given in **Table 1.14.**

Table 1.14: Interest coverage ratio

Year	Interest (₹in crore)	EBIT (₹ in crore)	Number of PSUs having liability of loans	Number of PSUs having negative ICR	Number of PSUs having ICR more than zero and upto one	Number of PSUs having ICR more than one
2014-15	10,112.07	(-)2,608.88	3	1	1	1
2015-16	11,445.59	5,546.84	3	-	2	1
2016-17	11,349.45	6,904.08	3	-	2	1
2017-18	10,740.47	(-)1,553.53	3	2	-	1
2018-19	12,136.46	(-)932.68	3	1	1	1

Source: Annual accounts and information received from the PSUs

It was observed one PSU *viz*., TN Powerfin had ICR more than one in all the subsequent years also. During 2015-16 and 2016-17, in none of the PSUs the ICR was negative. Further, in 2017-18 the ICR was negative in TANGEDCO, TANTRANSCO and in 2018-19 the ICR was negative in TANGEDCO which indicates that the DISCOM company did not generate adequate income to service their interest burden.

Debt-Turnover Ratio

1.20 The details of the total debts and the turnover of the power sector PSUs during 2014-19 are given in **Table 1.15.**

Table 1.15: Details showing the debt-turnover ratios of power sector PSUs

(₹ in crore)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Debt from Government/Banks and FIs.	93,376.50	1,04,282.64	1,11,766.89	1,24,981.45	1,25,060.23
Turnover	38,422.49	45,670.27	48,489.71	48,843.45	61,053.34
Debt-Turnover Ratio	2.43	2.28	2.30	2.56	2.05

Source: Compiled from the latest finalised accounts.

The turnover of power sector companies stood at ₹38,422.49 crore during 2014-15, increased to ₹61,053.34 crore in 2018-19 representing a compounded growth rate of 9.70 *per cent.* Whereas during the same period, the debt increased from ₹93,376.50 to ₹1,25,060.23 crore representing a compounded growth rate of 6.02 *per cent*. The debt turnover ratio ranged between 2.05 and 2.56 during the above period.

Assistance under Ujwal DISCOM Assurance Yojana (UDAY)

1.21 The Ministry of Power (MoP), Government of India (GoI) launched (20 November 2015) Ujwal DISCOM Assurance Yojana (UDAY Scheme) for operational and financial turnaround of State owned Power Distribution Companies (DISCOM). UDAY Scheme envisaged signing of agreement amongst State Government, DISCOM and GoI stipulating their respective responsibilities for achieving the operational and financial milestones as described below, supported by measures such as better domestic coal supply by GoI as discussed in detail in para 2.7.3 and 2.7.4 of this Report and takeover of DISCOM debts by State Government with support from Banks/Financial Institutions, takeover of future losses of DISCOM by State Government, timely tariff revisions etc.

Scheme for improving operational efficiency

1.22 The Scheme envisaged that the participating States were required to undertake various targeted activities like compulsory feeder and distribution transformer (DT) metering, consumer indexing and Geographic Information System (GIS) mapping of losses, upgrading or changing transformers and meters, smart metering of all consumers consuming above 200 units per month, Demand Side Management (DSM) through energy efficient equipment, quarterly revision of tariff, comprehensive Information, Education and Communication (IEC) campaign to check theft of power, assure increased power supply in areas where the Aggregate Technical & Commercial (AT&C) losses have been reduced for improving the operational efficiencies. The timeline prescribed for these targeted activities were also required to be followed so as to ensure achievement of the targeted benefits *viz.*, ability to track losses at feeder and DT level, identification of loss-making areas, reduce technical losses and minimise outages, reduce power theft and enhance public participation for reducing the theft, reduce peak load and energy consumption, *etc*. The outcome of operational improvements were to be measured through indicators *viz.*, reduction of AT&C loss to 15 *per cent* in 2018-19 as per loss reduction trajectory finalised by the MoP and States, reduction in gap between average cost of supply and average revenue realised to zero by 2018-19.

Scheme for financial turnaround

1.23 The participating States were required to take over 75 *per cent* of DISCOMs debt by 30 September 2018 *i.e.* 50 *per cent* in 2015-16 and 25 *per cent* in 2016-17. The scheme for financial turnaround *inter alia* provided that:

- State will issue '*Non Statutory Liquidity Ratio (Non-SLR) Bonds'* and the proceeds realised from issue of such bonds shall be transferred to the

DISCOMs which in turn shall discharge the corresponding amount of Banks/FIs debt. The bonds so issued will have a maturity period of 10-15 years with a moratorium on repayment of principal upto 5 years.

- Debt of DISCOM will be taken over in the priority of debt already due, followed by debt with highest cost.
- The transfer to the DISCOM by the State in 2015-16 and 2016-17 will be a grant which can be spread over three years with the remaining transfer through State loan to DISCOM. In exceptional cases, 25 *per cent* of grant can be given as equity.

Achievement of operational performance

1.24 Government of Tamil Nadu after raising reservations about UDAY Scheme, agreed to implement the Scheme only in January 2017. A tripartite Memorandum of Understanding (MoU) was entered amongst GoTN, TANGEDCO and GoI with suitable modifications in the requirements considering operational efficiency already achieved by TANGEDCO, delay in signing of MoU and discussions made based on requests made by GoTN. TANGEDCO is the only DISCOM in Tamil Nadu. Achievements as against the MoU requirements are discussed below:

The status of implementation of the UDAY Scheme is detailed in **Table 1.16.**

Table 1.16: Targets and achievements of parameters under UDAY Scheme upto March 2019

Parameter of UDAY Scheme		Target under UDAY Scheme	Progress under UDAY Scheme	Achievement (in *per cent*)
Feeder metering (in Nos.)	Urban	4,950	5,049	102.00
	Rural	2,558	2,621	102.46
Metering at Distribution Transformers (in Nos.)	Urban	66,073	50,200	75.98
	Rural	1,80,748	0	0
Feeder Segregation (in Nos.)		1,920	0	0
Rural Feeder Audit (in Nos.)		2,558	2,428	94.92
Electricity to unconnected household (in lakh Nos.)		189.93	189.93	100
Smart metering (in lakh Nos.)		199.82	2.73	1.37
Distribution of LED UJALA (in lakh Nos.)		54.20	31.18	57.53
AT&C Losses (in %)	2016-17	14.06	15.16	(-)211.54[37]
	2017-18	13.79	15.96	(-)158.39
	2018-19	13.50	14.02	(-)21.14
Average Cost of Supply (ACS) minus Average Revenue Realised (ARR) Gap (₹ per unit)		----	0.85	----
Net Income or Profit/Loss including subsidy (₹ in crore) 2018-19		₹ 370.61	(-) ₹ 12,623.41	(-) 3,506.12

Source: Details furnished by TANGEDCO.

Though there was a significant achievement in fixing meters at feeder points, TANGEDCO's performance in installation of meters at Distribution

37 AT&C losses as on 31.03.2016 was 14.58 *per cent*. Shortfall calculated by comparing the anticipated reduction in AT&C losses with the actual AT&C losses achieved over the previous years.

Transformer points at rural and the feeder segregation was reported "Nil". Further, the installation of Smart meters at consumer's end was 1.37 *per cent* only. The targets for reducing the AT&C losses were also not achieved in all the years.

Thus, TANGEDCO has not completed the targeted activities like installing of distribution transformer metering, segregation of feeders, installation of the smart meters and reduction of AT&C losses. It is evident that the operational efficiencies of TANGEDCO has not improved as envisaged even after the sanction of interest-free loan of ₹22,815 crore.

Implementation of Financial Turnaround

1.25 As per MoU, GoTN should raise funds by issuing non-SLR bonds in the market or directly to banks/FIs and utilise the funds so raised to grant interest-free loan to TANGEDCO by 2016-17 itself to repay the DISCOM's interest bearing debt of ₹22,815 crore (*i.e.*, 75 *per cent* of ₹30,420 crore being a portion of the outstanding debt of TANGEDCO as on 30 September 2015). GoTN should convert the interest-free loan into grants of ₹4,563 crore each year over a period of five years commencing from 2016-17. TANGEDCO was required to issue bonds for balance 25 *per cent* of the debt (*i.e.* ₹7,605 crore) backed by guarantee from GoTN with interest rate not more than Bank Base Rate plus 0.1 *per cent*.

GoTN released interest-free loan of ₹22,815 crore to TANGEDCO in two instalments (February 2017 and March 2017) by raising funds through issue of UDAY Bonds on private placement basis. TANGEDCO immediately utilised the loan to repay its interest bearing loans to the above extent. TANGEDCO is yet to issue bonds for ₹7,605 crore even though GoTN issued guarantee in March 2017 itself. GoTN had converted interest-free loan as grants at the rate of ₹4,563 crore each in 2017-18 and 2018-19 totalling ₹9,126 crore even though conversion was to commence from 2016-17 itself. Apart from taking over of loans, GoTN was required to takeover 5 *per cent* of TANGEDCO's loss of 2016-17 in the year 2017-18, 10 *per cent* of TANGEDCO's loss of 2017-18 in 2018-19 and 25 *per cent* of TANGEDCO's loss for the year 2018-19 in 2019-20 against which it took over (March 2018) ₹217.44 crore for 2016-17 and ₹776 crore for 2017-18 and is yet to take over loss for 2018-19.

However, the expected financial turnaround could not be achieved due to non-achievement of operational parameters, lack of upward revision in tariff *etc*. as TANGEDCO incurred loss of ₹12,623.41 crore as against expected surplus of ₹370.61 crore in 2018-19.

Performance Audit and Compliance Audit Paragraphs

1.26 For Part-I of the Report of the CAG for the year ended 31 March 2019, one performance audit on 'Coal Management in Thermal Power Stations of Tamil Nadu Generation and Distribution Corporation Limited' and three compliance audit paragraphs relating to power sector undertakings were issued to the Principal Secretary, Energy Department, GoTN with request to furnish replies within four weeks. Replies for the Performance audit were furnished by

GoTN (September/October 2020) which were considered and incorporated, wherever found appropriate, while finalising the report. The total financial impact of the Performance Audit and the Compliance audit paragraphs is ₹ 6,905.54 crore.

Follow- up action on Audit Reports

Replies outstanding

1.27 The Report of the CAG represents the culmination of the process of audit scrutiny. It is, therefore, necessary that they elicit appropriate and timely response from the Executive. The GoTN had issued (1997) instructions to all Administrative Departments to submit replies/explanatory notes to paragraphs/reviews included in the Reports of the CAG within a period of two months of their presentation to the Legislature in the prescribed format without waiting for any questionnaire from the Committee on Public Undertakings (COPU). Details of explanatory notes pending from Energy Department on the paras relating to power sector PSUs are given in **Table 1.17.**

Table 1.17: Explanatory notes not received (as on 31 March 2020)

Year of the Audit Report	Date of placement of Audit Report in the State Legislature	Total Performance Audits (PAs) and Paragraphs in the Audit Report		Number of PAs/Paragraphs for which explanatory notes were not received	
		Performance Audit	Paragraphs	Performance Audit	Paragraphs
2016-17	09.07.2018	01	05	01	05
TOTAL		**01**	**05**	**01**	**05**

From the above, it could be seen that explanatory notes to one Performance Audit and 05 paragraphs were pending from Energy Department as of March 2020 relating to Audit Report for the year 2016-17.

Discussion of Audit Reports by COPU

1.28 The status as on 31 March 2020 of Performance Audits/paragraphs relating to power sector PSUs that appeared in Audit Reports (PSUs) and discussed by COPU is given in **Table 1.18**

Table 1.18: Reviews/Paras appeared in Audit Reports *vis-a-vis* discussed as on 31 March 2020

Period of Audit Report	Number of PAs/paragraphs			
	Appeared in Audit Report		Paragraph Discussed	
	PAs	Paragraphs	PAs	Paragraphs
2003-04	02	10	01	10
2006-07	02	08	01	08
2007-08	02	07	--	07
2010-11	01	08	--	--
2011-12	01	06	--	--
2012-13	01	08	--	--
2013-14	--	06	--	--
2014-15	01	03	--	--
2015-16	--	06	--	--
2016-17	01	05	--	--
TOTAL	**11**	**67**	**02**	**25**

Compliance to Reports of COPU

1.29 As per the directions (1997) given by the Government, the Action Taken Notes (ATNs) on the COPU's recommendations were to be forwarded within six months from the date of placement of COPU's recommendations in the State Legislature. It was, however, noticed that ATNs in respect of 29 paragraphs pertaining to two Reports of the COPU presented to the State Legislature between February 2016 and March 2018 had not been received (March 2020) as indicated below:

Table 1.19: Compliance to COPU Reports

Year of the COPU Report	Total number of COPU Reports	Total number of recommendations in COPU Report	Number of recommendations where ATNs not received
2015-16	01	19	19
2016-18	01	10	10
TOTAL	**02**	**29**	**29**

It is recommended that the Government may prescribe a time schedule and resource person in each PSUs to ensure (a) sending replies to the Performance Audit Reports and Paragraphs, Explanatory Notes and ATNs on the recommendations of COPU as per the prescribed time schedule; (b) recovery of loss/outstanding advances/overpayments within the prescribed period; and (c) revamping of the system of responding to audit observations. The Government may establish a system to monitor compliance to the above.

CHAPTER-II

2 Performance Audit on Coal Management in Thermal Power Stations of Tamil Nadu Generation and Distribution Corporation Limited

Executive Summary

As on 31 March 2019, Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) owns and operates five Coal based Thermal Power Stations (TPS) (two TPS at Mettur, two TPS at North Chennai, and one TPS at Tuticorin) with a total installed capacity of 4,320 MW. The cost of coal constituted 95.54 to 98.41 per cent of the total cost of generation of TANGEDCO during 2014–19 and has a significant impact on power tariff on consumers. The performance audit on coal management was conducted covering the period 2014–2019 to ascertain economy in procurement and transportation, effectiveness of assessment of quality and quantity of coal procured, and efficiency of consumption of coal in TPS against norms. The audit findings are summarised below:

Planning and procurement of coal

Coal is procured domestically through long term coal linkages from subsidiary companies of Coal India Limited (CIL) at the notified prices. Against linkage of 106.97 Million Metric Tonnes (MMT), TANGEDCO could secure receipt of 71.82 MMT of coal during 2014–19. Even though TANGEDCO resorted to procurement of 22.76 MMT of imported coal to offset the short supply, it did not levy any penalty for short supply from CIL.

Based on the advice of GOI, CIL requested (June 2016) TANGEDCO to stop importing coal and substitute it with high grade indigenous coal available from its sources. However, coal supplied under import substitution scheme was to the extent of 31 per cent of agreed quantity. But, TANGEDCO did not prefer any claim of penalty with the coal companies as per clause 3 of FSA for the short supply.

GOI introduced (June 2016) a scheme of "Flexibility in utilisation of domestic coal for reducing the cost of power generation" which provided for consolidation of Annual Contracted Quantity of coal of all TPS within the State. Due to non-inclusion of coal allotment made for one of the Joint Venture power company i.e., NTECL which is having TPS within the State, TANGEDCO lost the central allocation of coal to the extent of 6.239 MMTPA.

Coal supply management

TANGEDCO allowed its JV partner NTPC Tamil Nadu Energy Company Limited (NTECL) to use its own coal terminal without any commitment for upgradation of unloading facilities. In the meantime, it used a private coal terminal for unloading of coal which resulted in avoidable extra expenditure of ₹41.68 crore.

Even though TANGEDCO suffered excess transit loss over the norm of 1.50 per cent for the coal transported from North Chennai to Mettur by railways in 47 out of 60 months (78 per cent) valuing ₹58.37 crore, it did not fix any accountability on the contractor for the loss.

The coal handling contracts at TPS suffered from deficiencies such as non-adoption of uniform contractual terms, method of contract, etc. In addition, TANGEDCO erroneously fixed lower quantity of Minimum Guaranteed Quantity (MGQ), resulting in avoidable payment of incentive of ₹10.61 crore for handling additional quantity over and above MGQ.

Failure to load coal up to the permissible carrying capacity of wagons resulted in idle freight charges of ₹101.35 crore.

Assessment of quality and quantity

As against the normative loss of calorific value of 120 kcal/kg, the actual loss of calorific value during transportation from mines to discharge ports ranged between 140 to 2,256 kcal/kg resulting in wasteful expenditure of ₹2,012.65 crore. Even though there were instances of drop in Gross Calorific Value (GCV) during consumption immediately upon its receipt on the same day, TANGEDCO had not analysed the reasons for the same.

The systems adopted by TANGEDCO for assessment of quality of coal was deficient as (i) at coal mines there was no mechanical sampling as prescribed by GOI which was continued to be carried out manually, (ii) TANGEDCO accepted 13.79 lakh MT of coal valuing ₹411.63 crore without testing, (iii) the test results of samples to be received within 30 days were delayed beyond two to three months in case of MCL and more than one year in case of ECL, (iv) TANGEDCO used formula method for determination of calorific value though it was mandatory to use bomb calorimeter for testing, and (v) there was no coal Quality Monitoring Wing at Headquarters of TANGEDCO.

In five TPS studied in audit, the energy charges computed by TANGEDCO for billing were based on 'As Fired GCV' and higher by ₹1,805.35 crore during 2014-19 compared to the energy charges to be billed based on 'As Received GCV' as per CEA/CERC recommendations.

There is no periodical physical verification system in load ports and TANGEDCO has not determined transit loss for the past 18 years citing a pending legal case.

Coal consumption at power stations

Operational efficiency of TPS is regulated through Station Heat Rate (SHR), which depends on the quantity and quality of coal. The actual SHR was in excess of norm stipulated by TNERC in all TPS, which resulted in excess consumption of 56.85 lakh MT of coal valuing ₹2,317.46 crore throughout 2014–19. Moreover, TANGEDCO could not reduce specific coal consumption despite usage of higher proportion of imported coal having high calorific value in all TPS.

TANGEDCO suffered generation loss of 844 MU valued at ₹171.57 crore due to poor quality of coal during 2014–19.

TANGEDCO did not adhere to GOI guidelines for phasing out of accumulation of ash on land and had accumulated 62.15 MMT of ash in ash dykes in three TPS as on March 2019. The continued dumping of ash on land resulted in contamination of ground water, Buckingham canal and Kosasthalaiyar river.

Conclusion

The performance audit revealed TANGEDCO's failure to secure balanced coal linkage, tardy implementation of import coal substitution scheme. There were several instances of avoidable expenditure and undue benefit to coal handling contractors while transporting coal from mines to power stations. There was huge drop of GCV up to 2,256 kcal/kg during transportation of coal. The computation of energy charges adopted by TANGEDCO for billing was higher by ₹1,805.35 crore. Despite use of higher quality imported coal in TPS, the specific coal consumption was not reduced. Thus, TANGEDCO did not take appropriate measures to avoid the inefficiencies in coal management.

Recommendations

Audit recommends that TANGEDCO reviews its fuel supply agreements to ensure that the financial interests of TANGEDCO are protected by ensuring that there are no monthly shortages of coal, and levy penalty where provided for in the agreement. The existing coal handling contracts may be reviewed to ensure standardisation and incorporate best and economical practices and amend the contracts which are leading to undue benefit to the contractors. The reasons for excess loss of GCV over and above the CEA norms need to be analysed and effective measures be taken to control the loss of GCV during transit and at power stations. TANGEDCO may explore the adoption of "As Received GCV" instead of "As Fired GCV" for tariff fixation as recommended by CERC. An effective control mechanism may be established to cross check the quality and quantity of coal at load ports and at power stations.

Introduction

2.1 Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) is engaged in generation and distribution of electricity within Tamil Nadu. As on 31 March 2019, TANGEDCO had five Coal based Thermal Power Stations[38] (TPS) with a total installed capacity of 4,320 MW. TANGEDCO additionally planned five[39] coal based thermal stations with a capacity of 5,700 MW to be implemented during 2019-23.

In TPS, Coal is used as a primary fuel and Oil (Heavy Furnace Oil and High Speed Diesel) is used as secondary fuel in boiler for generating steam. TANGEDCO meets its requirement of coal from four subsidiaries[40] of Coal India Limited (CIL), Singareni Collieries Company Limited (SCCL) and through import options. The cost of coal constituted 95.54 to 98.41 *per cent* of the total cost of generation of TANGEDCO during 2014–19 and has significant impact on cost of supply of power to consumers. Details of fuel cost in thermal generation in TANGEDCO during 2014-19 are given in **Table 2.1.**

Table 2.1: Details showing the cost of generation of power *vis-à-vis* cost of coal

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	Targeted Thermal Power Generation (MU)	31,333	32,158	32,144	31,064	29,892
2	Actual Thermal Power Generation (MU)	27,380	28,375	25,009	22,869	25,978
3	Cost of Coal (Primary fuel)(₹ in crore)	9,151	8,004	7,436	6,613	8,369
4	Cost of generation of power (TPS)(₹ in crore)	9,436	8,201	7,556	6,921	8,666
5	Percentage of coal cost to total cost of generation	96.98	97.60	98.41	95.54	96.57

Source: Annual Reports of TANGEDCO

It could be seen from above that the actual generation of TPS was lower than the generation targeted during the five years from 2014-15 to 2018-19. The total shortfall in actual generation *vis-à-vis* targeted generation was 26,980 Million Units (MU). The reasons for this shortfall was shortage of coal, planned and forced outages, running of plants at partial load due to shortage and poor quality of coal *etc.*,

38 Comprising 3x210 MW North Chennai Thermal Power Station-I (NCTPS-I), 2x600 MW North Chennai Thermal Power Station-II (NCTPS-II), 4x210 MW Mettur Thermal Power Station-I (MTPS-I), 1x600 MW Mettur Thermal Power Station-II (MTPS-II), and 5x210 MW Tuticorin Thermal Power Station (TTPS).(2x60 MW + 2x110 MW) Ennore Thermal Power Station (ETPS) was decommissioned in March 2017.

39 Ennore Expansion TPS (1x660 MW), North Chennai TPS Stage-III (1x800 MW), Ennore SEZ TPS (2x660 MW), Udangudi TPP Stage I (2x660 MW), Uppur Thermal Power Project (2x800 MW).

40 Eastern Coalfields Limited (ECL), Mahanadi Coalfields Limited (MCL), Central Coalfields Limited (CCL), and Western Coalfields Limited (WCL).

This performance audit was carried out considering the significance of coal cost in generation of electricity and weak financial position of TANGEDCO as detailed in Chapter I of this Audit Report.

Organisation Structure of TANGEDCO

2.2 TANGEDCO is functioning under the administrative control of Energy Department of Government of Tamil Nadu (GOTN). The overall management of TANGEDCO is vested in the Board of Directors. The activities relating to generation of power is vested with Director (Generation). The matters relating to procurement, transportation and monitoring of coal movement are dealt by the Chief Engineer (Coal). At the field level, each TPS is headed by a Chief Engineer under the overall supervision of Director (Generation) and account for the receipt and consumption of Coal.

Audit Objectives

2.3 The objectives of performance audit were to assess whether:

- Planning for procurement of coal and procurement process was carried out economically and efficiently;
- Coal Supply Management (including logistic and handling) was economical and efficient;
- Quality and quantity of Coal procured were in accordance with the terms of Fuel Supply Agreements (FSAs) / Memorandum of Understandings (MoUs) /Relevant Quality Standards;
- Management of coal consumption at TPS was efficient and coal consumption was as per the Central Electricity Regulatory Commission (CERC)/Tamil Nadu Electricity Regulatory Commission (TNERC)'s norms; and
- Internal control system with reference to coal management was effective.

Scope and Methodology of Audit

2.4 This Performance Audit was conducted between June 2019 and February 2020 covering the activities relating to planning and procurement, transportation and handling, quality and quantity assessment, efficiency in consumption of coal and internal control system in TANGEDCO during 2014–2019. The entry conference with TANGEDCO and Energy Department, GOTN was conducted on 14 August 2019. The compliance audit observations relating to import of coal by TANGEDCO covering the period 2014–17 was included in the Report of the Comptroller and Auditor General of India (Public Sector Undertakings) for the year ended March 2017. Therefore, issues relating to import of coal were not covered in the present Audit. The exit conference was conducted on 29 May 2020 in which the Principal Secretary of Energy Department, GOTN and the CMD of TANGEDCO participated. Views expressed by the officials of TANGEDCO and GOTN in the exit conference, the replies furnished by TANGEDCO (May 2020) and the response of the

Government (September/October 2020) have been considered and incorporated in the report appropriately.

Audit Criteria

2.5 The sources of audit criteria are:

- New Coal Distribution Policy, 2007 (NCDP) issued by the Government of India / Standing Linkage Committee Meetings' minutes;
- Regulations/Guidelines/Orders issued by the Central Electricity Authority (CEA) and TNERC;
- Norms of Consumption of Coal as fixed by TNERC;
- Coal sampling and testing standards of Bureau of Indian Standards (BIS); and
- Provisions contained in FSAs/MoUs/Contracts with coal companies, Railways, transport agencies and other contractors.

Audit Sample

2.6 During the present audit, all the five functional TPS of TANGEDCO were selected for audit and all 31 contracts each valuing more than ₹one crore entered into by TANGEDCO head office for procurement, logistic and coal quality testing were taken up for detailed examination. In addition, 55 contracts each valuing more than ₹one crore and 254 coal handling contracts[41] each valuing less than ₹one crore executed by TPS were selected for detailed examination on the basis of stratified random sampling method.

Acknowledgement

Audit acknowledges the co-operation and assistance extended by the Management of TANGEDCO at various stages of conducting of this Performance Audit.

Audit findings

2.7 Planning and procurement of Coal

2.7.1 Coal is procured domestically through long-term coal linkages from subsidiary companies of CIL at notified rates. For all other procurements, such as procurement through MOU and import, the rates are higher. Coal linkage for TPS was granted by Standing Linkage Committee (Long Term) of Ministry of Coal (MoC) based on recommendation of CEA and inputs from the generating companies and coal companies. The FSAs between coal companies and power generating companies stipulate contracted quantity and quality of coal, procedure for checking quality of coal, source of supply, commercial terms *etc*. The details of the installed capacity, targeted generation, and contracted quantity as per the coal supply agreements, coal requirement *vis-à-vis* actual supply, *etc*., are given in **Annexure–2**.

[41] Out of 16,923 coal handling contracts.

As per the New Coal Distribution Policy (NCDP), 2007 of GOI, 100 *per cent* of the normative[42] requirement of coal of the power utilities would be considered for supply through FSA. Two versions of FSA[43] were signed by TANGEDCO with 20 years' validity. Under NCDP, four stations of TANGEDCO commissioned prior to 31 March 2009 were named as existing consumers and another two stations[44] commissioned after 31 March 2009 were named as new consumers. The rates for supply of coal under FSAs were notified by CIL. Additional quantities of coal (over and above FSA quantities) would be available to the TPS at a higher rate, fixed at 40 *per cent* above the notified rates.

Based on the maximum annual consumption during 2005–08 in ETPS, MTPS–I, NCTPS–I, and TTPS, TANGEDCO estimated the combined normative coal requirement as 16.20 Million Metric Tonnes *per annum* (MMTPA) which is sufficient for operation of all TPS at a PLF of 84.78 *per cent.* However, CEA allotted 13.50 MMTPA to TANGEDCO which is sufficient for operation of four[45] TPS at a PLF of 70.65 *per cent.* Accordingly, TANGEDCO entered into 20 years' long-term FSA (June 2009), for the TPS commissioned prior to 2009, with subsidiaries of CIL.

For the TPS[46] commissioned after 2009, TANGEDCO entered into FSA (PLF 65 *per cent* as per NCDP) with MCL for 2.315 MMTPA and 4.63MMTPA for MTPS–II (December 2012) and NCTPS–II (June 2013) respectively. Further, TANGEDCO entered into (October 2016) an agreement with ECL for supply of additional quantity of 2.50 MMTPA. Thus, as on 31 March 2019, TANGEDCO had net Annual Contracted Quantity (ACQ) of 22.60 MMTPA[47], after surrendering ACQ of 0.35 MMTPA of imported coal procurement through CIL sources. Details of the requirement of coal and the procurement during 2014-19 are given in **Annexure – 2**.

42 As per CEA norms, calculated based on maximum consumption in any of the past three years

43 First version of FSA entered into with MCL and ECL in June 2009 and the second version of FSA with MCL in December 2012 and June 2013

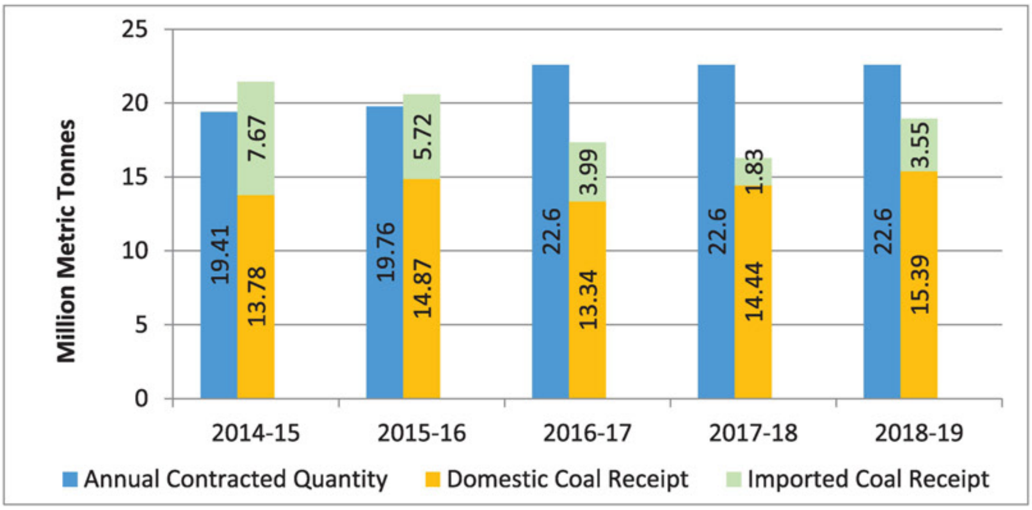
44 NCTPS–II, MTPS–II

45 ETPS, NCTPS–I, MTPS–I, and TTPS

46 Commissioned in October 2013 and May 2014 (MTPS II & NCTPS II)

47 FSA with MCL (June 2009) for 11.575 MMTPA, ECL (June 2009) for 1.425 MMTPA, MCL (December 2012) for 2.199 MMTPA, MCL (June 2013) for 4.399 MMTPA, CCL (November 2016) for 0.5 MMTPA and ECL (October 2016) for 2.50 MMTPA totaling 22.598 MMTPA.

Chart 2.1: Total Requirement of Coal and Supply of Indigenous and Imported Coal



The **Chart 2.1** indicates total coal receipt (both indigenous and imported) against the ACQ of indigenous coal under FSAs. The actual supply of indigenous coal was less than total ACQ. As per the FSA, the purchaser can claim penalty[48] for short supplied quantity of more than 25 *per cent* in a year. The short fall against the contracted quantity was in the range of 4.89 to 9.26 MMTPA (representing 25 to 41 *per cent* of ACQ) during 2014–19. Even though TANGEDCO resorted to procurement of imported coal to off-set the short supply, it did not levy any penalty for short supply from CIL. When audit called for the reasons for short supply of coal, the Chief Engineer (Coal) replied that reasons for shortfall in supply of coal by coal companies to TANGEDCO is not available or informed by the coal companies.

Government in its reply (September/October 2020) attributed the short supply of wagons and movement restriction imposed by Railways as reasons for short supply of coal. However, independent audit verification with South Eastern Railways and South East Central Railways revealed that there was no scarcity of railway wagons during 2014-19. Government also confirmed that TANGEDCO was forced to procure imported coal to meet its generation requirement due to shortfall in domestic coal supply by CIL.

TANGEDCO must evolve a system for recording reasons for short supply of coal on monthly basis and levy penalty as per contractual provisions in order to protect its financial interests and generation requirements.

Deviation in monthly and quarterly scheduled quantities

2.7.2 Continuous supply of coal is a prerequisite to run the TPS. The ACQ was divided into quarterly quantities[49] and further into monthly quantities[50]. As per FSA, total variation in coal supply in any month shall not exceed 10 *per cent* of monthly agreed quantity. Audit noticed that during 2014-19, in 199 out of 240 months (83 *per cent* instances) the deviation in coal supplies were beyond

48 Penalty – Ranging from 5 to 40 *per cent* of the basic price of indigenous coal for the short supplied quantity ranging from 25 to 50 *per cent*.

49 25 *per cent* each of ACQ in first and third quarter, 22 *per cent* in second quarter and 28 *per cent* of ACQ in the fourth quarter

50 One third of quarterly quantity

the permitted level in all the TPS as detailed in **Annexure–3**. Moreover, Audit noticed that FSAs provided for monetary compensation only for annual short supply and not for monthly or quarterly short supply by coal companies. Inclusion of an enabling provision in the FSAs for levy of penalty in case of shortage in monthly supplies, would protect the financial interest of TANGEDCO. Audit observed that incentive claimed by Coal Companies for excess supply to a particular TPS was not stopped although there was short supply of coal to other TPS under the same FSA. For instance, during 2015–16, MCL supplied only 84 *per cent* of combined ACQ to TTPS, MTPS–I and NCTPS–I put together under same FSA but MCL claimed incentive of ₹18.55 crore for additional supplies (110 *per cent* over ACQ) to TTPS during the same year. Even though the claim was yet to be paid by TANGEDCO, the same indicated that the terms of FSA were not balanced and not protecting TANGEDCO in cases of short supplies.

Government in its reply (September/October 2020) stated that the incentive bills for ₹18.55 crore submitted by MCL were not accepted by TANGEDCO. However, Audit is of the view that mere non-acceptance of claim would not absolve TANGEDCO from the liability in the absence of final withdrawal of the incentive claim by MCL.

Tardy implementation of import coal substitution scheme

2.7.3 As per the import policy of GOI, coal is kept under Open General License and coal consumers are free to import coal from the source of their choice. However, based on the advice of GOI, CIL requested (June 2016) TANGEDCO to stop importing coal and substitute it with high grade indigenous coal available from CIL/SCCL sources and entered into agreements for supply of 5.0 MMTPA as detailed in **Table 2.2** below:

Table 2.2: Agreed Quantity (AQ) and Supply Quantity (SQ) under import substitution

(In MMT)

Coal Company	Agreement Date	2016–17		2017–18		2018–19		Total	
		AQ	SQ	AQ	SQ	AQ	SQ	AQ	SQ
ECL–Side Agreement	October 2016	1.04	0.39 (38%)	2.50	0.35 (14%)	2.50	0.49 (20%)	6.04	1.23 (20%)
CCL–FSA	November2016	0.36	0.04 (11%)	1.00	0.45 (45%)	0.66	0.55 (83%)	2.02	1.04 (51%)
SCCL–MoU	November 2016	1.00	0.49 (49%)	---	0.22	---	---	1.00	0.71 (71%)
WCL–FSA	May 2017	---	---	0.42	0.01 (2%)	0.16	--- (0%)	0.58	0.01 (2%)
Total		2.40	0.92	3.92	1.03	3.32	1.04	9.64	2.99 (31%)

Source: Agreements/MOU with coal companies and coal data book of TANGEDCO

It could be seen from **Table 2.2** above, that the coal supplied under import substitution scheme was to the extent of 31 *per cent* of agreed quantity. Even though the agreements with CCL and WCL provided for claim of penalty (except ECL and SCCL) for short supply exceeding 25 *per cent* of the agreed quantity, TANGEDCO neither analysed the reasons for short receipt of agreed quantity nor preferred any claim of penalty with the coal companies as per clause 3 of FSA for the short supply of 6.65 MMT. ECL initially agreed to supply high grade coal for import substitution without performance incentive for supplies exceeding quantity of 2.50 MMTPA. ECL imposed add-on price and performance incentive of 15 *per cent,* which was not a part of the agreement and raised a claim on TANGEDCO for an amount of ₹65.43 crore during 2017–19, despite ECL failing to supply the agreed quantity during the same period.

Government in its reply (September/October 2020) stated that based on the directions of GOI, fresh tender for import of coal was not invited after February 2016 and import of coal was stopped since June 2017. TANGEDCO (October 2020) clarified that no payments with respect to performance incentive has been paid to ECL during 2017-19. It also stated that the shortfall of indigenous coal was being reviewed up to 2016-17 and the compensation has been communicated to coal companies and recovered by TANGEDCO in the coal bills. However, Audit is of the view that mere non-acceptance of claim would not absolve TANGEDCO from the liability in the absence of final withdrawal of the incentive claim by ECL. TANGEDCO needs to pursue withdrawal of the claim with the ECL.

Flexible utilisation of coal

2.7.4 As per FSA, the coal allocation was to be utilised only by the respective TPS and the allocation cannot be diverted to other TPS. The GOI introduced (June 2016) a scheme of "Flexibility in utilisation of domestic coal for reducing the cost of power generation". The scheme provided for consolidation of ACQ of coal of all thermal generating stations in a State and Aggregated ACQ (AACQ) would be arrived for each State instead of individual FSA for each generating station. The State/Central Generating companies have the flexibility to utilise their coal in most efficient and cost effective manner in their own power plants as well as by transferring coal to other TPS owned by State/Central Government for generation of cheaper power.

For TPS owned by TANGEDCO, the total ACQ was worked out to 20.445 MMTPA[51] and the ACQ of 9.11 MMTPA was for TPS owned by Joint Venture (JV) power companies of TANGEDCO (2.87 MMTPA of NTPL[52] and 6.239 MMTPA of NTECL[53]). Audit noticed that both NTPL and NTECL are Central Generating Stations which are also JV companies of TANGEDCO and have their TPS located within Tamil Nadu. Out of these two JV companies of TANGEDCO, CIL has aggregated only the ACQ of NTPL with TANGEDCO, but the ACQ of NTECL was not included with TANGEDCO. When TANGEDCO raised (April 2017) this issue, CIL had requested to settle the same by addressing NTPC, since it had made only a provisional aggregation of ACQ with NTPC. It is pertinent to note that TANGEDCO agreed (January 2018) to the proposal of inclusion of the ACQ of NTECL with NTPC without the approval of its Board of Directors. Due to this omission, TANGEDCO had lost the central allocation of coal to the extent of 6.239 MMTPA.

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51 Additional FSA with ECL for 2.5 MMTPA and the ACQ foregone due to surrender of import coal option from MCL of 0.35 MMTPA was not considered for arriving at the figure of 20.445 MMTPA.

52 NLC Tamil Nadu Power Limited, a joint venture power company between TANGEDCO and NLC India Limited

53 NTPC Tamil Nadu Energy Company Limited, a joint venture power company between TANGEDCO and NTPC Limited

Government in its reply (September/October 2020) stated that NTPC did not accept the above proposal and hence NTECL's allocation was not pooled with TANGEDCO's allocation. The reply is not convincing because

- ACQ of each individual coal linkages (as per FSA) of the purchaser, shall be aggregated as consolidated ACQ for the purchase along with its JVs and subsidiary companies, instead of individual Thermal Power Stations. Further, in NTECL, TANGEDCO has 50 *per cent* shareholding and has 71 *per cent* power allocation to Tamil Nadu. Therefore, pooling of NTECL allocation with TANGEDCO would have been more appropriate, as it was done in case of NTPL another JV of TANGEDCO.
- The TPS of NTECL and TANGEDCO's NCTPS-I and II are located at the same place and coal is unloaded at the same Kamarajar Port. Further, in case of technical problem in conveyor system for transporting of coal to TPS or during critical[54] stock level of coal, coal meant for TANGEDCO may be used at NTECL and vice-versa. Therefore, it would have ensured better flexibility of utilisation of coal between these two TPS.

In view of the above, ACQ of NTECL should have been incorporated in the AACQ of State of Tamil Nadu for achieving better flexibility in utilisation of domestic coal as envisaged by the CEA or else the very purpose of flexibility in utilisation of domestic coal for reducing the cost of power generation will be defeated.

2.7.5 Impact of short supply of Coal

One of the important functions in operating a TPS is to ensure uninterrupted supply of coal so that generation loss due to coal shortage does not arise. It is pertinent to note that the short supply of coal led to coal stock reaching critical levels as detailed below in**Table 2.3**:

Table 2.3: Instances of Super critical and Critical level stock position at TPS

Station	2016-17		2017-18		2018-19	
	Critical	Super critical	Critical	Super critical	Critical	Super critical
TTPS	9	---	32	9	85	13
NCTPS	34	---	125	84	59	303
MTPS–I	31	---	31	25	135	36
MTPS–II	---	---	23	25	55	18

Note: As per CEA norms Supercritical means number of days of coal stock is less than 4 days and Critical means number of days of coal stock is less than 7 days.
Source: CEA daily coal stock reports

54 coal stock is for less than 7 days

Audit observed that:

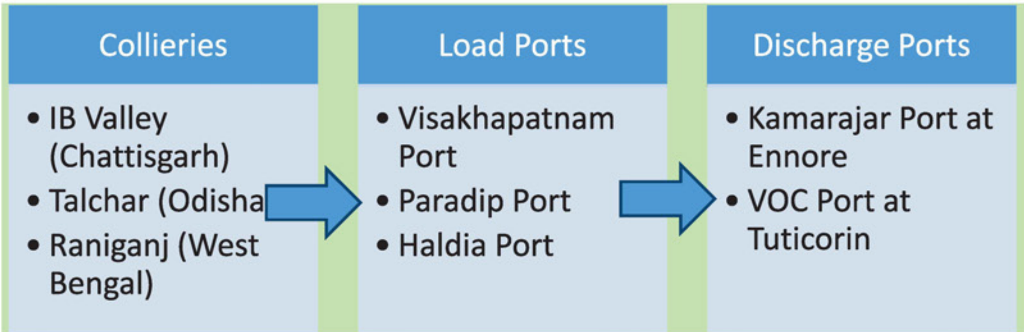
- In NCTPS, there was supercritical[55] level of coal stock position for 84 days (23 *per cent*) and 303 days (83 *per cent*) during 2017-18 and 2018-19 respectively.
- There was loss of generation to the extent of 243.45 MU in TTPS (150.75 MU) for 2017-18 and 2018-19, MTPS–I (56.18 MU) for 2017-18, and MTPS–II (36.52 MU) for 2014-15 and 2018-19 on account of want of coal.

Government in its reply (September/October 2020) stated that the short supply was due to coal allocation by GoI as well as the provision of railway rakes based on the average consumption and not for the total normative consumption. It also stated that GoTN had approached concerned authorities to supply 72,000 MT of coal per day to State of Tamil Nadu. However, the fact remains that TANGEDCO had suffered loss of generation during the review period for want of coal. TANGEDCO needs to take up the matter at appropriate level to avoid instances of supercritical levels of coal and consequent loss of generation.

Coal Supply Management

2.8 TANGEDCO received 71.82 Million Metric Tonnes (MMT) of indigenous coal during 2014-19 from Coal companies and transported 70.12 MMT through rail-sea-rail route from mines to discharge ports *viz*., Kamarajar Port at Ennore and Tuticorin Port for further transportation to TPS located at North Chennai, Mettur, Ennore and Tuticorin. Out of remaining 1.70 MMT, one MMT of indigenous coal from IB Valley (Chhattisgarh) of MCL during 2017-19 and 0.70 MMT of indigenous coal procured from Singareni Collieries Company Limited during 2016-18 was transported through rail route to MTPS I & MTPS II, Mettur.

Coal Movement for Thermal Power Plants, TANGEDCO



Audit assessed the economy and efficiency of transportation of coal from Collieries to load port, discharge port and Power Plant. The audit examination revealed the following lapses in coal transportation management.

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55 coal stock is for less than 4 days

Movement of coal up to load ports

Undue benefit to handling contractors

2.8.1. As per the Schedule II of the coal handling contracts (February 2001), the contractors were required to pay Wagon Haulage Charges[56] (WHC) to Haldia Dock Complex under Kolkata Port Trust (KPT), Visakhapatnam Port Trust (VPT), and Paradip Port Trust (PPT) at the rate notified by the Indian Railways on "rate per wagon" basis. However, TANGEDCO reimbursed the WHC to its contractors on "rate per MT" basis using a formula considering carrying capacity at 60.50 MT per wagon for both Haldia and Visakhapatnam Ports, and 65 MT[57] per wagon for Paradip Port.

Audit observed that even though the carrying capacity of wagon was enhanced by Railways from 60.50 MT/65 MT to 68 MT per wagon from August 2011 onwards, the rate per MT computed by TANGEDCO was not correspondingly reduced resulting in undue benefit to the contractors. Based on the available information only for one year *i.e.*, 2017-18, audit worked out the undue benefit to the contractors in respect of all three load ports as ₹2.55 crore approximately. Government in its reply (September/October 2020) stated that following the change in the carrying capacity of the wagon from 58.5 MT to 60.5 MT from 01 April 2009, the Board had approved (August 2009) the revision of WHC till the end of the contract and accordingly the WHC was amended with mutual agreement with the contractor. The reply is not acceptable, as the contract which started in 2001, has been renewed every three months, therefore to protect TANGEDCO's financial interests, the rate per MT could be revised in the contract.

Coal handling at discharge ports

2.8.2 At Kamarajar Port at Ennore, coal is unloaded and moved through conveyors to NCTPS I & II. A portion of the coal is further transported to MTPS through rail route. At VOC Tuticorin Port (VTP), coal was unloaded at Coal Jetty–I and II and directly moved to TTPS through conveyors. The examination of unloading activities revealed the following deficiencies.

Extra expenditure due to belated upgradation of coal berth

2.8.3 In Ennore Port, TANGEDCO developed two dedicated Coal Berths (CB), *viz.*, CB–1 and CB – 2 having capacity of 9 MMTPA and 6 MMTPA respectively. From November 2012, TANGEDCO allowed NTECL to use CB–2 for discharging coal for their plants. Due to lesser handling capacity at CB–2 as compared to CB–1 coupled with longer time taken by NTECL for discharging coal from geared vessels, TANGEDCO was forced to utilise (September 2013), another private coal terminal at Ennore for unloading coal for its TPS.

The details of coal handled by TANGEDCO at CB–1, CB–2 and the private terminal during 2014–19 are given in the **Table 2.4** below.

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[56] Being charges payable to Port Trust at the rates determined by railways for movement of wagons in port area

[57] December 2013 – 65 MT per wagon

Table 2.4: Details of coal handled at CB–1, CB–2 and a private coal terminal during 2014–19

(in MMT)

Coal Berth	Capacity	2014–15	2015–16	2016–17	2017–18	2018–19
CB1	9 MMTPA	11.03	11.66	10.06	10.16	9.97
CB2	6 MMTPA[58] till May 2016 / 9 MMTPA from June 2016	4.10	5.34	6.30	6.55	7.40
Private terminal[59]	10 MMTPA	3.96	4.07	2.52	0.56	0.85
Total		**19.09**	**21.07**	**18.88**	**17.27**	**18.22**

Source: KPL website & Coal Data MIS of TANGEDCO

Audit observed that:

- The cost of operation of unloading of coal from ship to the private terminal was costlier by ₹5.60 per MT to ₹71.17 per MT as compared to the same at CB–2 during 2014–19. However, TANGEDCO used the private terminal only because of sharing of CB–2 with NTECL without any formal agreement which resulted in extra expenditure of ₹41.68 crore.
- After installation (June 2016) of shore unloaders at CB–2 by NTECL, usage of the private terminal by TANGEDCO was considerably reduced.

Government in its reply (September/October 2020) stated that due to stringent financial position of TNEB, the work of providing the shore unloaders at CB-2 was handed over to NTECL with the request to complete the work at the earliest. Due to delay in erection of shore unloaders at CB–2 and to avoid loss of generation, the third party berth had been utilized beneficially. The reply confirms that it was a forced situation due to delay in erection of shore unloaders by NTECL, which could have been avoided had TANGEDCO analysed the implication of sharing of the facility with NTECL and executed a suitable agreement specifying the obligations and time limit for erection work**.**

Non recovery of transit loss beyond permissible limit

2.8.4 After movement of coal from load ports at Vishakhapatnam and Paradip through sea, the same is unloaded in Chennai at Kamarajar port. This coal is moved through conveyor system to the NCTPS–I & II and further transported to MTPS–I & MTPS-II by Railways. Audit noticed that for railway movement of coal to MTPS, TANGEDCO had engaged (December 2012) the services of a private contractor, M/s. Chennai Radha Engineering Works (CREW).

CERC's norm for transit loss is 0.8 *per cent* of the total quantity moved. However, TANGEDCO issued guidelines for movement of coal up to Mettur

[58] Including Mobile Hoppers

[59] Coal Handled for TANGEDCO at Common User Coal Terminal (CUCT) owned by Chettinad International Coal Terminal Private Limited

which *inter-alia* included the maximum permissible transit loss at 1.5 *per cent* of the quantity despatched. Audit noticed that during the period 2014-19, NCTPS despatched 175.57 lakh MT of coal through 4,773 rakes to MTPS. Audit analysis of the month-wise despatch and receipt of coal at MTPS revealed that the actual transit loss exceeded the permissible limit as laid down by TANGEDCO (1.5 *per cent)* in 47 out of 60 months (78 *per cent*) to the extent of 3.85 lakh MTs of coal valued at ₹58.37 crore. In this connection, audit observed that:

- In 11 months, the transit loss ranged between 3 *per cent* and 4.40 *per cent* as against the TANGEDCO's norms of 1.5 *per cent*. TANGEDCO neither analysed the reasons for excess transit loss nor fixed any accountability on the contractor as the contract did not have any clause for recovering the same from the contractor despite knowing the quantity short delivered.
- For the transportation of coal from Chettinad International Coal Terminal Private Limited (CICTPL) to MTPS I and II, the coal handling contract was awarded to a contractor. It is also pertinent to mention that TANGEDCO had withheld the value of the transit loss amounting to ₹108.50 crore during 2014–19 from a contractor. However, the contract with CREW did not contain any enabling clause for recovery of transit loss beyond the permissible levels. Government in its reply stated (September/October 2020) that the contract with CREW was finalized by NCTPS-I office and NCTPS-I office was not aware of the recovery provisions for excess transit loss included in the contract entered into by the Head office of TANGEDCO with the contractor. It was further stated that the contract with the contractor provided for tarpaulin cover and hence recovery clause had been incorporated in the contract. However, since there is no clause requiring the tarpaulin cover for the transport of coal loaded rakes in the contract with CREW, no such recovery clause had been incorporated for NCTPS I. The reply is not acceptable as it is a matter of financial prudence that suitable clauses should have been incorporated in the contract to safeguard the financial interests of TANGEDCO. This also indicated lack of coordination between TANGEDCO's Head office and NCTPS I, and non-standardisation of terms of coal handling contract which resulted in non-recovery of excess transit loss of ₹ 58.37 crore.

This pointed to lack of internal control in disseminating economically prudent and beneficial practices by TANGEDCO Headquarters to TANGEDCO's field offices. It is, therefore, recommended that the responsibility may be fixed on the officials for not incorporating the clause for recovery of excess transit loss as was done in another contract finalised by the Headquarters.

Coal handling at power stations

2.8.5 Unproductive expenditure

(i) The work of operation and maintenance of internal coal handling from coal yard to bunker is undertaken departmentally in TTPS and MTPS–I, but the same is outsourced through private contractors in MTPS–II and NCTPS–I & II. The method of contracting was not uniformly followed across all TPS. For example, the NCTPS–I adopted rate contract method whereas NCTPS–II and MTPS–II adopted fixed lump sum method for coal handling work. Audit analysis of total quantity of coal handled by the contactor revealed that the contractor had handled only 53 *per cent* of the contracted quantity (11,000 MT per day) for MTPS–II and 57 *per cent* of the contracted quantity (22,000 MT per day) for NCTPS–II during 2013–19 whereas they were paid fixed lump sum charges on monthly basis which aggregated to ₹53.99 crore throughout the contract period. Had TANGEDCO adopted rate contract as was done in NCTPS–I, it could have paid only ₹31.16 crore during the same period. Thus, non-adoption of the most economical method of contracting across the TPS resulted in avoidable extra expenditure of ₹13.44 crore and ₹9.39 crore for MTPS–II and NCTPS–II respectively for the period from July 2017 to March 2019.

(ii) The method adopted for determination of Minimum Guaranteed Quantity (MGQ) for fixed monthly lump sum contract in NCTPS-I and MTPS-II was different. In NCTPS-I & II, MGQ was fixed based on coal handled during the previous years whereas in MTPS- II, MGQ was determined based on the full load operation *i.e.*, the installed capacity of the plant. Further, it was seen that the contracts required payment based on lump sum basis without taking into account the actual quantity handled. Due to this lacuna, the MGQ was fixed at higher level resulting in unproductive expenditure as detailed below.

Table 2.5: Details of unproductive expenditure

TPS	MGQ (in lakh MT)	Actual handled quantity (in lakh MT)	Payment made for MGQ (₹ crore)	Amount payable[60] for actual quantity (₹ crore)	Unproductive expenditure (₹ in crore)
(1)	(2)	(3)	(4)	(5)	(6)=(4) – (5)
NCTPS–I	611.00	420.07	25.54	17.43	8.11
NCTPS–II	257.40	146.11	37.66	21.43	16.23
MTPS–II	140.03	76.61	56.42	25.42	31.00
Total	1,008.43	642.79	119.62	64.28	55.34

Source: Data provided by TANGEDCO

As seen from the above **Table 2.5**, TANGEDCO made payment for MGQ of 1,008.43 lakh MT against the actual quantity of 642.79 lakh MT, thereby incurred an unproductive expenditure of ₹55.34 crore.

TANGEDCO replied (May 2020) that the handling of quantity lower than MGQ was due to the then requirement of coal on daily basis for generation of power. Government (September/October 2020) in its reply stated that as per the contract clauses, full applicable O&M charges were payable even if the MGQ was not achieved by the contractor. The reply is not acceptable as the payment made on the basis of MGQ was higher than the amount which would have been payable if the contract was for the actual quantity handled in all the three power stations which is evident from column 4 and 5 respectively in the Table 2.5

[60] Arrived at considering the total lump sum O&M charges divided by MGQ

above. Further, as the rate contract was advantageous over lump sum contract, TANGEDCO may review the payment terms and adopt suitable clauses which are more beneficial to TANGEDCO across the TPSs, as already elucidated in the para above.

Incorrect criteria for payment for handling additional quantities in excess of contracted quantity

2.8.6 The contract for handling of coal in external coal handling system consists of two distinct works *viz*., (1) moving coal from port to coal yard at NCTPS–I (MGQ 7.5 lakh MT *per month*) and (2) loading of coal in railways for further transportation to MTPS–I & II (MGQ 6.0 lakh MT *per month*). For this purpose, TANGEDCO awarded (August 2010) a contract to a private party (CREW) on payment of lump-sum amount of ₹0.81 crore for handling MGQ of 13.50 lakh MT *per month*. For handling quantities over the MGQ of 7.50 lakh MT *per month*, the contractor was paid extra amount on tonnage basis considering quantities of coal moved from port to coal yard. The same contractor was again selected in the next tender and awarded (January 2013) with the same terms and conditions for five years upto January 2018[61]. Accordingly, the contractor was paid a sum of ₹22.19 crore during August 2010 to June 2017 for handling additional quantities in excess of MGQ.
In this connection, Audit observed that:

- Since the MGQ was fixed as 13.50 lakh MT per month in all the contracts entered into during the period from August 2010 to January 2018, the contractor was eligible for additional amount only for the quantity handled over and above 13.50 lakh MT per month. However, TANGEDCO paid considering the MGQ of 7.50 lakh MT[62], being the MGQ for movement of coal from port to coal yard. Due to erroneous consideration of MGQ for payment for handling additional quantity in the contract, TANGEDCO incurred erroneous extra expenditure of ₹10.61crore. TANGEDCO may initiate steps for recovering the above amount.

- Incidentally, it is pertinent to note that a Technical Committee formed by TANGEDCO for rationalisation of terms of coal handling contracts recommended (July 2009), inter-alia, that rate of payment for handling additional quantity should be arrived at by considering the combined MGQ quantity *i.e.*, 13.50 lakh MT, being the quantity of coal moved from port to yard and the quantity loaded in railway wagons. Though the Committee's recommendation was also approved by Chairman of TANGEDCO in July 2009 for incorporating them in all future contracts, the reasons for not considering this recommendation was not on record. Apart from the above, it was also approved to increase the MGQ to 14.50 lakh MT instead of 13.50 lakh MT to attract competitive offer from the bidders. However, while awarding contract in 2010 and 2013, the approved clauses, which were financially beneficial, were ignored.

[61] The contract was foreclosed in July 2017 citing budgetary constraint

[62] Increased from 7.50 lakh MT to 10.50 lakh MT from 13.08.2016 due to the commissioning of 2 shore unloaders

Thus, lowering the MGQ for incentive much below the combined MGQ of 13.50 lakh MT was not rational and resulted in an erroneous excess expenditure of ₹10.61 crore, which is recoverable.

Government in its reply (September/October 2020) stated that the tender specifications prepared based on the recommendations of the Committee was not approved by the Board and hence the existing successful awarded tender specifications were adopted. The reply is not acceptable for the reason that the Committee was formed to analyse all the O&M activities involved to optimise the estimated cost which recommended, *inter alia* increase of MGQ and non-adoption of such specific recommendations in the subsequent tenders lacked justification.

Under loading of coal in railway wagons

2.8.7 The contract for transportation of coal from Ennore port to NCTPS–I Coal yard and further despatch of coal from NCTPS–I Coal yard to MTPS–I & II was awarded (December 2012) to CREW. As per Railway rules, wagons are to be loaded up to 68 MT each and freight charges will be levied for 68 MT per wagon even if loaded quantity is below 68 MT. Audit analysis revealed that average quantity of coal loaded per wagon ranged between 60.42 and 65.57 MT for indigenous coal and 55.18 to 64.16 MT for imported coal. Thus, failure to load the coal up to the permissible carrying capacity resulted in payment of freight of ₹101.35 crore (15.74 lakh MT) without beneficial use. But the contract with CREW did not contain any provisions for recovering freight for under loading. Incidentally, in a similar contract awarded by TANGEDCO to another contractor for movement of coal from CUCT at Ennore to MTPS, TANGEDCO recovered freight for under loading.

Government in its reply (September/October 2020) stated that necessary provision of recovery for under loading will be included in the ensuing contract which is due for renewal during next year. This corrective action was proposed after being pointed out in Audit. Similar contracts should be reviewed across TANGEDCO and the terms of contract revised to enable financial prudence in the expenses of TANGEDCO and improve its Operating Profit.

Assessment of Quality and Quantity of Coal

Quality Assessment of Coal

2.9 The most important quality parameter for coal is its heat value referred to as 'Gross Calorific Value' (GCV). The GCV in relation to thermal generation has been defined in the tariff regulations issued by TNERC (June 2005), as "the heat produced in kcal by complete combustion of one kilogram of solid fuel".

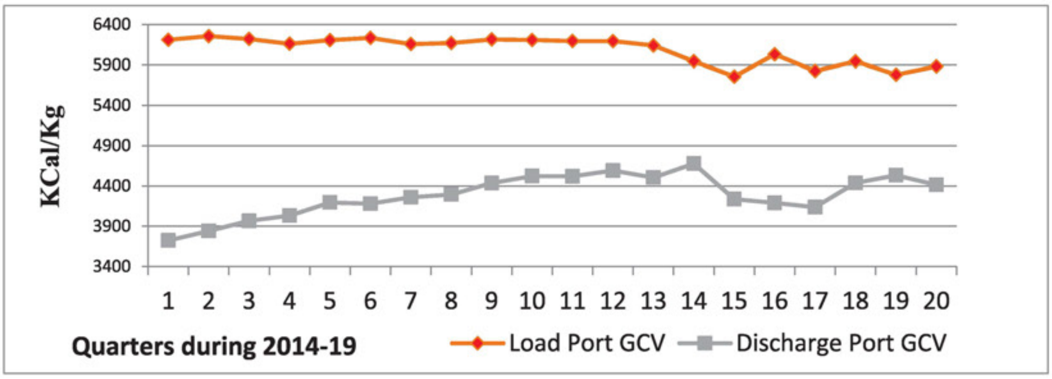
During Audit, it was found that the quality of coal as reflected by GCV at loading end, unloading end, and at TPS had gradually deteriorated due to many systematic lapses as detailed below:

Quality Assessment of indigenous coal at loading port, discharge port and bunker

(a) Reduction in GCV between Loading end at mines and Discharge Port

2.9.1 Since GCV was one of the key factors used for energy billing, Audit compared the GCV 'as billed' by coal companies for coal loaded on to wagons at mines end and GCV of coal 'as received' at the unloading point of the TPS. Audit observed that GCV of coal decreased from the 'as billed' stage to the 'as received' stage, though as per CEA, the GCV values, *i.e.*, GCV 'as billed', 'as received' and 'as fired' should be approximately same barring minor losses due to storage. As per CEA norms, the drop in GCV shall not exceed maximum of 120 kcal/kg within a transit period of 30 days. However, Audit verification of 'as billed GCV' at ECL and CCL at mines end and 'as received GCV' at discharge port at Tuticorin during 2014–19, both measured in Equilibrated Method[63], revealed that the GCV drop (after allowing GCV drop of 120 kcal/kg) ranged between 1,422 kcal/kg to 2,256 kcal/kg valuing[64] ₹910.43 crore in Haldia–Tuticorin sector as depicted in **Chart 2.2**. In addition, the drop in GCV ranged between 257 kcal/kg to 549 kcal/kg valuing ₹147.64 crore in Vizag/Paradip–Tuticorin sector and between 140 kcal/kg and 290 kcal/kg valuing ₹954.58 crore in Haldia/Vizag/Paradip–Ennore sector.

Chart 2.2 : GCV drop during transit between loading end at ECL/CCL mines and discharge port at Tuticorin



As a particular grade of coal (having bandwidth of 300 Kcal/Kg) cannot change or convert into different grade within a short period of 30 days of transportation, the above position required in-depth analysis of the reasons for vast drop in GCV. Audit found that TANGEDCO did not establish a robust mechanism to cross check the quality of coal on rake to rake basis at load ports, although GOI permitted (June 2016) power producers to engage CIMFR[65] for sampling and analysis of coal at load ports. Consequently, the issue persisted during the entire period of 2014-19.

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63 In 'Equilibrated Method', the GCV is obtained by measuring the equilibrated moisture of coal and applying it on GCV (Air Dried Basis) which is determined by using bomb calorimeter. The equilibrated moisture is determined under laboratory conditions of 60 *per cent* relative humidity and 40° C temperature

64 Being the difference in price paid for higher grade against lower grade received at discharge port

65 Central Institute of Mining and Fuel Research (CIMFR) is a constituent laboratory of Council of Scientific and Industrial Research (CSIR) and autonomous body under GOI

Government in its reply (September/October 2020) stated that, to sort out the above issues, TANGEDCO will consider establishing a suitable control mechanism to cross check the quantity and quality of coal on rake to rake basis for coal received at load ports from mines by forming a Coal Quality Monitoring Wing.

(b) Reduction in GCV between receipt point at power station and at Bunkers

2.9.2 As per CEA, the GCV of coal 'as received' at the unloading point of TPS and 'as fired' at the boilers shall approximately be the same barring minor variations up to 120 Kcal per Kg for shorter period of 30 days. Audit compared the GCV of coal at these two stages during 2014–19 in all TPS. It was observed that the decrease in GCV from 'as received' stage to 'as fired' stage was more than the CEA permitted level. The drop in GCV within the TPS premises, after considering normative loss is given in **Annexure-4.**

It can be seen that drop in GCV within the station was much higher than CEA's permitted drop of 120 kcal/kg for storage period of 30 days. For Indian coal, the drop prevailed in 22 to 38 months in different TPS. In 12 months, the drop in GCV of Indian coal was in the range of 481-720 Kcal/kg, much above the permissible maximum drop in GCV. In case of imported coal, the GCV drop was much higher than indigenous coal. The drop in GCV of more than 120 kcal/kg prevailed in 40 to 51 months. In 31 months, GCV drop of imported coal was even more than 960 Kcal/kg against the maximum limit of 120 Kcal/kg. However, TANGEDCO has not analysed the reasons for drop in GCV within the TPS. The drop in GCV led to increased energy charges and higher burden on the consumers as mentioned in Paragraph 2.9.10.

Government in its reply (September/October 2020) stated that the reduction in GCV was due to moisture, ash content, and different methods adopted for determination of GCV at receipt end of TPSs and bunker. The reply is not acceptable as Audit observed that the drop in GCV were also on account of determination of GCV at power stations without testing coal and other organisational weaknesses in assessment of quality of coal which are discussed in detail in Para no 2.9.7 and 2.9.9.

(c) Drop in GCV even during direct feeding on the same day

2.9.3 In addition to the above, audit analysed the GCV difference in case of coal being fed into the bunkers during the same day of receipt without routing through stock yard. As the coal was fed on the same day, there should not be any drop in GCV, but audit analysis revealed that there were huge differences in GCV ranging from (–) 800 kcal/kg to (+) 800 kcal/kg even when coal was consumed on the same day as detailed in **Table 2.6**.

Table 2.6: Station-wise incidences of GCV difference during direct firing

(Figures in number of days)

Range of difference in GCV during consumption of coal on the same day of receipt	MTPS – I		MTPS – II		Total
	Imported coal	Indigenous coal	Imported coal	Indigenous coal	
Below (–) 800	3	---	---	1	4
Between (–) 800 to (–) 400	42	18	4	2	66
Between (–) 400 to (–) 200	84	71	24	15	194
Between (–) 200 to 0	66	172	18	29	285
Between 0 to (+) 200	37	74	7	14	132
Between (+) 200 to (+) 400	2	30	1	11	44
Between (+) 400 to (+) 800	---	1	---	---	1
Above (+) 800	---	---	---	---	---
Total	234	366	54	72	726

Source: Audit workings based on Laboratory Register and Coal Feeding Data of MTPS – I&II

As can be seen from the above **Table 2.6**, the difference in GCV between 'as received' and 'as fired' was prevailing on 600 days in MTPS-I and 126 days in MTPS-II during 2014–19. Further, there were huge drop in GCV even in respect of coal directly fed into the bunker.

Government in its reply (September/October 2020) stated that during unloading of coal, water is sprayed for avoiding spread of coal dust and hence increase in moisture content decreases GCV. The reply is not correct as the above para highlights the variation in GCV only on air dried basis *i.e.*, determining the GCV of coal by excluding the surface moisture.

The unjustified loss of GCV during transportation, storage, and usage at power stations indicated negligence and lackadaisical approach on the part of TANGEDCO authorities to control losses which have an impact on the efficient operation of the Company. Hence, there is a compelling need to analyse the reasons for the loss in GCV and take corrective measures.

Audit further noticed that the reduction in GCV at various stages as mentioned above was not analysed by TANGEDCO due to deficiencies in the system of assessment of quality of coal as detailed below:

Absence of mechanical sampling at mines end and at power stations

2.9.4 As per BIS, the coal sample should be collected up to the depth of 1.5 metre from the wagon top. As per GOI directive (August 2015), real time monitoring using auto mechanical sampling (online) from moving streams shall be used by coal companies with effect from 01 September 2016. However, TANGEDCO did not insist on the coal companies for installing such mechanical sampling, despite the fact that it would be advantageous for it as the moisture content at 1.5 metre depth would be higher than the moisture on the surface and consequently lead to lesser GCV and lesser price.

Government in its reply (September/October 2020) stated that the above issues will be sorted out after formation of a separate Coal Quality Monitoring Wing. The reply confirms the absence of internal control in collection of sample to assess the quality of the coal and such basic corrective action was proposed only after being pointed out in Audit.

Acceptance of untested coal

2.9.5 As per GOI decision, TANGEDCO entered into (November 2016) Tripartite Agreements for Third Party Sampling and Testing with CSIR–CIMFR and coal companies whereby CSIR–CIMFR were wholly responsible for collection, preparation and analysis of coal as per FSAs. As per the Tripartite Agreement, CSIR–CIMFR would start coal sampling and testing from 28 November 2016. However, audit observed that TANGEDCO received 13.79 lakh MT of coal valuing ₹411.63 crore without testing during the period December 2016 to March 2017. The reason for acceptance of untested coal was not on record. Thereby, TANGEDCO deprived itself an opportunity to raise the quality issue during the above period.

Government in its reply (September/October 2020) stated that the receipt of untested coal was on account of delayed start of sampling activity by CIMFR and the matter has been taken (September 2019) up in the Apex Committee to resolve the issue. The final outcome is still awaited.

Belated testing and reporting of test results by third party agencies

2.9.6 As per the Tripartite Agreement, the coal sample shall be kept in the custody of CIMFR for 30 days. During this time, CIMFR shall complete the test and communicate the test result to both TANGEDCO and coal company. Audit noticed that during the period from November 2016 to December 2017, CIMFR belatedly submitted test results to TANGEDCO after 2 to 3 months in case of coal received from MCL and had not submitted test results for more than a year for coal supplied from ECL from March 2017 to April 2018. In view of lapse of 30 days period for sample preservation, TANGEDCO lost the opportunity to lodge a complaint with coal companies for grade slippages.

Audit further observed that no penalty clause was provided in the tripartite agreement for delayed / non-communication of test results. Further, TANGEDCO did not pursue through the Executive/Apex Committee as envisaged in the Tripartite Agreement for redressing delayed/non-submission of test results by CIMFR.

Government in its reply (September/October 2020) had accepted the fact and stated that it would insist for incorporation of a penalty clause for belated submission of test results by CIMFR through an amendment to the tripartite agreement. The reply confirms the lacunae in the tripartite agreement and the corrective action was proposed only after being pointed out in Audit.

Determination of GCV at power stations without testing coal

2.9.7 As per the FSA and GOI notification (December 2011), GCV of coal should be determined as per the method laid down by BIS. However, Audit noticed that TANGEDCO did not test the GCV of coal using bomb calorimeter[66] as per BIS and instead arrived at the GCV using a mathematical formula (excepting at NCTPS I & II). It is pertinent to note that as per CIMFR report, the variation between formula based GCV against bomb calorimeter based GCV was about 191 kcal/kg. Further, testing of GCV at TANGEDCO laboratory[67] also reported variation[68] in GCV up to 294 kcal/kg compared to the formula method. Thus, determination of GCV based on formula is not fool proof and will not rule out the possibility of inaccurate computation of plant efficiency for tariff calculation.

Government in its reply (September/October 2020) stated that the usage of empirical formula for determination of GCV of coal would be stopped and it would switch over to GCV testing by bomb calorimeter in TPSs like TTPS, MTPS-I and MTPS-II.

Acceptance of lower grade of coal

2.9.8 As per clauses 11.1.2 (a) and 11.2.2 of the FSA, the coal purchaser should make advance payment to the coal companies based on the declared grade of coal subject to adjustment to the quantity and quality of coal analysed. The coal companies should give regular credit note on account of grade slippage to the extent of difference in the base price of declared grade and analysed grade of coal. Audit noticed that the test results furnished by CIMFR, during March to December 2017, revealed the supply of lower grade of coal by ECL compared to the declared grade of coal with a drop in GCV ranging from 140 to 3,610 kcal/kg. The supply of lower grades of coal was also confirmed by the test results[69] of TANGEDCO's own laboratories. However, ECL did not accept the test results of CIMFR in 90 *per cent* cases and approached the referee laboratories for re-testing. The referee test results were in favour of ECL in 96 *per cent* cases which forced TANGEDCO to pay as per the referee results. However, based on the grade enhancement by the referee laboratories, TANGEDCO was forced to forgo its claim for the differential amount of ₹153.43 crore being the difference between CIMFR determined grade and the declared grade, already paid to the coal companies. On the other hand, TANGEDCO was made liable to pay a sum of ₹117.61 crore based on the referee test results which showed higher grade of coal than the declared grade of coal which is an additional liability to TANGEDCO.

The position of declared grade, CIMFR grade and referee grade in respect of coal supplied during November 2017[70] by ECL is depicted in the **Chart 2.3** below.

[66] A bomb calorimeter is a closed, rigid (constant volume) vessel that can be used to determine the heat of reaction of a liquid or solid fuel sample

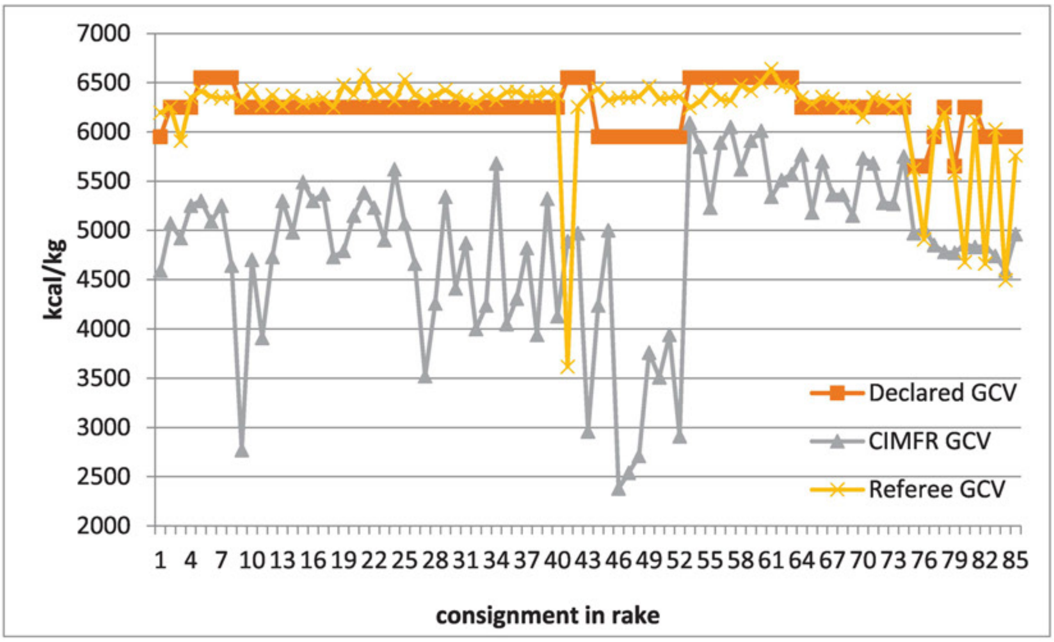
[67] NCTPS-I laboratory

[68] Ranged from 50 to 68 kcal/kg during April 2014 to July 2017 and from 194 to 294 kcal/kg during August 2017 to March 2019

[69] Weighted average monthly figures

[70] Similar trend was prevailing during entire period from March 2017 to December 2017

Chart 2.3: GCV differences among CIL, CIMFR and Referee



Although the tripartite testing agreement with CIMFR provide for resolving disputes through Apex Committee, TANGEDCO did not take up the issue to the Apex Committee as provided.

Government in its reply (September/October 2020) stated that the issue has been raised by TANGEDCO in the Apex Committee in September 2019 and further stated that TANGEDCO has not paid any amount to coal companies towards differential cost arising out of coal grade upgradation determined by testing referee sample. The fact, however, remained that advance payments of ₹153.43 crore was already made on the basis of declared grades against which TANGEDCO had received lesser grade. Moreover, the decision of TANGEDCO for non-payment of the differential cost arising due to upgradation of coal grade by Referee was one sided and in the absence of confirmation from coal companies, the said liability persists. TANGEDCO needs to pursue with coal companies for final withdrawal of the claim.

2.9.9 Organisational weaknesses in assessment of quality of Coal

Audit observed following weaknesses in TANGEDCO's coal quality assessment system:

(i) TANGEDCO has not carried out any scientific study for deciding number of personnel required for witnessing and recording the sampling and testing, considering the factors such as (a) loading during night, (b) number of railway sidings, (c) distance between various railway sidings, (d) bunching of rakes at the same location, *etc*.

(ii) In Head Office of TANGEDCO, there was no scientific duty allocation, considering increasing volume and complexity, among the personnel who look after coal procurement, coal handling and quality monitoring.

(iii) TANGEDCO has no separate "Quality Assurance Wing" to cover the entire gamut of coal quality activities and the quality issues are dealt by only one official, which shows lack of monitoring of procurement activities valuing above ₹4,000 crore *per annum*.

(iv) In order to examine the capabilities of officials involved in supervision of sampling and testing, Audit issued[71] questionnaires with the cooperation of TANGEDCO's management. The responses to the questionnaires indicated that TANGEDCO has not given due importance to the capabilities of personnel deputed for sampling and testing. Some of the major deficiencies are detailed below:

- About 81 *per cent* of personnel were not aware of how many wagons should be selected as sub-lots for sampling a rake (a lot) consisting of above 50 wagons.
- About 96 *per cent* of personnel were not aware of how much kilograms of Coal should be collected from each wagon for sampling.
- About 92 *per cent* of personnel were not aware of the depth up to which Coal sample should be collected from a wagon.
- About 79 *per cent* of Chemists were not aware of the relevant BIS procedure applicable for sample collection and testing.

The above analysis revealed the urgent need for training and educating staff involved in sampling and testing to enhance their capabilities otherwise TANGEDCO may continue to face sampling errors leading to increased expenditure.

Government in its reply (September/October 2020) stated that to rectify the above infirmities pointed out by Audit, formation of a separate Coal Quality Monitoring Wing is under scrutiny.

Impact of GCV differences on efficiency and energy charges

2.9.10 The normative energy consumption admissible per unit of electricity generated has been specified by TNERC in the Tariff Regulations, 2005 as normative Station Heat Rate (SHR) in terms of kcal/kwhr. The GCV being used as the value of energy input, which determines the SHR. Therefore, any increase/decrease in GCV affects the cost of power.

GCV measured upon its receipt at TPS is known as "As Received GCV" and the GCV measured before feeding the coal into the boiler is known as "As Fired GCV". Audit compared[72] the reported SHR using 'As Fired GCV' with 'As Received GCV' during 2014–19 and found that SHR worked out on 'As Received GCV' was significantly higher indicating lower efficiency as shown in **Table 2.7** below.

[71] Questionnaires issued to Chemists (50 Nos.) and Engineers (68 Nos.) of TANGEDCO who were involved in sampling and testing of indigenous coal

[72] Both "As Received GCV" and "As Fired GCV" were compared on "Total Moisture Basis" as per BIS

Table 2.7: Comparison of SHR based on 'As Fired GCV' Vs. 'As Received GCV'

TPS	Range of SHR reported by stations using 'As Fired GCV' (Kcal/kwhr)	Range of SHR worked out in Audit using 'As Received GCV' (Kcal/kwhr)	Range of difference (Kcal/kwhr)
MTPS–I	2269 to 2727	2292 to 3163	(-) 67 to 474
MTPS–II	2062 to 2730	2057 to 3050	(-) 167 to 445
NCTPS–I	2440 to 2555	2343 to 3226	(-) 105 to 680
NCTPS–II	2376 to 3089	2410 to 3562	(-) 217 to 643
TTPS	2431 to 2599	2228 to 3193	(-) 360 to 656

Source: SHR as reported by TPS and Audit workings based on Laboratory Registers of TPS

From the above **Table 2.7**, it could be seen that:

- In five TPS studied in audit, the energy charges proposed by TANGEDCO for billing were based on 'As Fired GCV' and were higher by ₹1,805.35 crore during 2014-19 compared to the energy charges to be billed based on 'As Received GCV'.
- Even though TANGEDCO purchased power from Central Generating Stations based on 'As Received GCV', it had not adopted the same for selling the power resulting in over burdening the consumer.
- CEA had observed (2014) that use of 'As Fired GCV' for SHR computation without proper guidelines was arbitrary and would lead to inflated claim of coal consumption.

CERC and other State Electricity Regulatory Commissions (Rajasthan, Uttar Pradesh, Karnataka, Kerala and Punjab *etc.*) had shifted from 'As Fired GCV' to 'As Received GCV' on the ground that loss of GCV due to inefficient stacking/handling of coal within the TPS should not be passed on to the consumers. However, TANGEDCO failed to adopt the best practice and continued to over burden the consumer.

Government in its reply (September/October 2020) stated that based on TNERC Regulations (2005) 'As Fired GCV' is considered for calculation of Energy Charges. It further stated that calculation of energy charges based on 'As Fired GCV' will only reflect correct SHR whereas 'As Received GCV' would not account for storage loss of coal.

The reply of the Government does not hold good as the CERC in its order dated 25 January 2016 clarified that the GCV of coal on as received basis is the most appropriate and transparent method for computing energy charges as the inefficiency of the generating companies in handling of coal between the point of unloading at the boundary of the generating station and the point of feeding to the bunkers should not be allowed to be passed on to the consumers.

Quantity of Coal

2.10 Weighment of domestic coal

2.10.1 As per FSA, payment for the coal supplies was made as per the weighment carried out at the delivery/loading point at mine end and TANGEDCO has right to witness the weighment of wagons. Further, proper weighment of coal at loading port and discharge port and within TPS would control transit and handling losses. Audit examination revealed that:

- TANGEDCO has not documented or created any logbook for witnessing and recording weighment of coal at mines end by its employees/ contractors.
- TANGEDCO has not ensured the installation/utilisation of weighbridges at all the load ports of Visakhapatnam, Paradip and Haldia to cross verify the quantity of coal sent by coal companies.
- The quantity of coal unloaded from ship at the discharge ports at Ennore and Tuticorin are accounted on the basis of draft survey[73] reports without cross verifying actual quantity delivered at coal yard. It is pertinent to note that VOC Tuticorin Port Trust estimated coal spillage of 12,000 MT of TANGEDCO's coal into sea during unloading in coal jetty during 2015–19. But this shortage was not reflected in TANGEDCO's books of accounts.
- The stock of coal was being verified periodically by TANGEDCO, but it has not prescribed method for calculating the volume and bulk density for the coal stacked at coal yard in order to arrive at the actual coal stock position. Moreover, it was seen that the formula for computing the volume was not applied as per the advice (July 2017) of Head Office stock verification team leading to variation in computation of stock in TPS. In its reply, TANGEDCO agreed to frame standard operating procedure for the measurement of volume and density of coal.

During the exit conference, TANGEDCO assured to improve the monitoring mechanism including maintenance of logbook for weighment at mines end, weighment of coal receipt at load ports on rake to rake basis and cross verification of discharged quantity by conveyor measurement at discharge ports and formulating Standard Operating Procedure for determining coal stock verification in TPS.

Government in its reply (September/October 2020) stated that there was no provision in the contract for weighment at the loading point. The reply confirms the lacuna in the agreement with the coal handling contractors and the corrective action was proposed only after being pointed out in Audit. Further, TANGEDCO needs to initiate credible actions and incorporate suitable clauses by amending existing contracts on priority in order to safeguard its financial interests.

Transit loss for handling coal at load ports

2.10.2 For movement and handling of coal from the collieries to the load ports, TANGEDCO placed (February 2001) work orders on handling agencies which were extended periodically for more than 18 years (March 2019). As per the work orders, the coal handling contractors were accountable for shortage of coal

73 A draft survey is a calculation of the weight of cargo loaded or unloaded to or from a ship from measurements of changes in its displacement. The technique is based on Archimedes' principle.

between quantities loaded at the collieries as per the railway receipt and the quantities as per the Bill of Lading of ships loaded at ports.

In this connection, Audit observed that TANGEDCO did not record the shortage of coal from the collieries to the load ports. The contracts provided for recovery of coal shortages only at the time of expiry of the contract and there was no provision for periodical assessment of coal shortages and recovery thereof. As a result of this, the coal shortages occurring during the past 18 years (2001–19) were not recorded, thereby TANGEDCO was unable to assess the shortage of coal. On the contrary, the contracts, however, allowed the contractors to claim shortage cover at fixed rates for minimizing the shortages at the load ports. It is pertinent to note that the contractors were paid ₹68.88 crore[74] as 'shortage cover' to compensate for coal shortage during transportation of coal from mines to load ports at Visakhapatnam, Haldia and Paradip during 2001-19. Even as coal shortage was not determined in any of the Ports by TANGEDCO, shortage cover was, however, continued to be paid without any recovery towards actual shortage of coal faced by it.

Government in its reply (September/October 2020) stated that at the time of closing the work order, the shortage quantity would be recovered from the contractor. The fact, however, remained that though one of the contractors stopped (March 2019) the execution of the work, TANGEDCO was yet to determine the shortage of coal faced by it and recover the same from the contractor (June 2020). TANGEDCO should ensure that coal shortages are recorded at regular intervals and recoveries be effected before closure of contract to protect financial interest. TANGEDCO may prioritise the reconciliation of transit loss, as it is pending for more than 19 years.

Coal consumption and management at power stations

2.11 Station Heat Rate and Specific Coal Consumption in excess of the norms

2.11.1 Operational efficiency of TPS is regulated through SHR[75], which depends on the quantity as well as quality of coal used by the TPS. Coal used to produce one unit of energy is termed as SCC[76]. The norm fixed by TNERC and actual SHR and SCC achieved by TPS during 2014-19 are given in **Table 2.8**.

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[74] Visakhapatnam ₹21.72 crore (2001-19), Haldia ₹9.47 crore (2004-19) and Paradip ₹37.69 crore (2001-19).

[75] Station Heat Rate = (Quantity of coal x Gross Calorific Value) / No. of units of energy generated

[76] Specific Coal Consumption = Quantity of coal / No. of units of energy generated

Table 2.8: SHR and SCC norms fixed by TNERC and actual SHR and SCC achieved

TPS	SHR norm	SCC norm	Actual SHR (kcal/kwhr) and SCC (kg/kwhr)									
			2014-15		2015-16		2016-17		2017-18		2018-19	
			SHR	SCC	SHR	SCC	SHR	SCC	SHR	SCC	SHR	SCC
MTPS–I	2500	0.70	2541	0.75	2472	0.70	2485	0.71	2452	0.70	2482	0.70
MTPS–II	2450	0.69	2483	0.71	2517	0.63	2390	0.66	2345	0.68	2403	0.69
TTPS	2453	0.71	2560	0.83	2559	0.74	2528	0.73	2497	0.77	2497	0.72
NCTPS–I	2393	0.66	2512	0.75	2466	0.66	2462	0.68	2452	0.73	2450	0.70
NCTPS–II	2450	0.67	2843	0.78	2609	0.67	2609	0.72	2644	0.76	2560	0.75

Source: TNERC Reports and Performance Reports of TPS

It may be seen from the **Table 2.8** that the actual SHR was in excess of norm stipulated by TNERC in all TPS (except MTPS–I in 2015–16 to 2018-19 and MTPS II in 2016-17 to 2018-19). Due to excess consumption of 56.85 lakh MT of coal over the norm, TANGEDCO incurred extra expenditure to the tune of ₹2,317.46 crore during 2014–19.

An internal committee on 'Merit Order Despatch[77]' of TANGEDCO advised (November 2016) the Chief Engineer (Thermal Stations) to study about SHR, GCV of coal and coal mixture ratio in all TPS and to file a petition, before the TNERC to revise / enhance the average SHR in the Tariff regulation. However, no such petition was filed by TANGEDCO till date (June 2020).

Government in its reply (September/October 2020) stated that the SHR could not be achieved due to ageing of power plants, receipt of poor quality of coal and non-operation of plant at full load due to load restrictions. The reply is not convincing because the norm for SHR was fixed by TNERC only after considering the above parameters.

Blending of imported coal with indigenous coal

2.11.2 TANGEDCO fixed (2007) the optimum blending ratio, of imported coal with indigenous coal, for MTPS–I and NCTPS–I at 20 *per cent* and for TTPS at 32 *per cent.* CEA fixed (2012) norms for blending of imported coal with indigenous coal for existing and future power stations at 15 *per cent* and 30 *per cent* respectively. TANGEDCO was yet to fix norms for blending ratio for MTPS–II and NCTPS–II. Audit noticed that maximum permissible blending ratio exceeded the norms in four TPS, *viz.,* MTPS–I (50 *per cent*), MTPS–II (55 *per cent*), NCTPS–I (35 *per cent*), NCTPS–II (47 *per cent*).

Since the GCV of imported coal procured was higher than indigenous coal, the blending of imported coal with indigenous coal should have reduced the SCC for the same amount of energy generated. However, as seen from the **Chart 2.4** below, the SCC remained the same in all thermal stations for all 60 months during 2014–19, irrespective of whether imported coal was blended to a lesser or greater extent.

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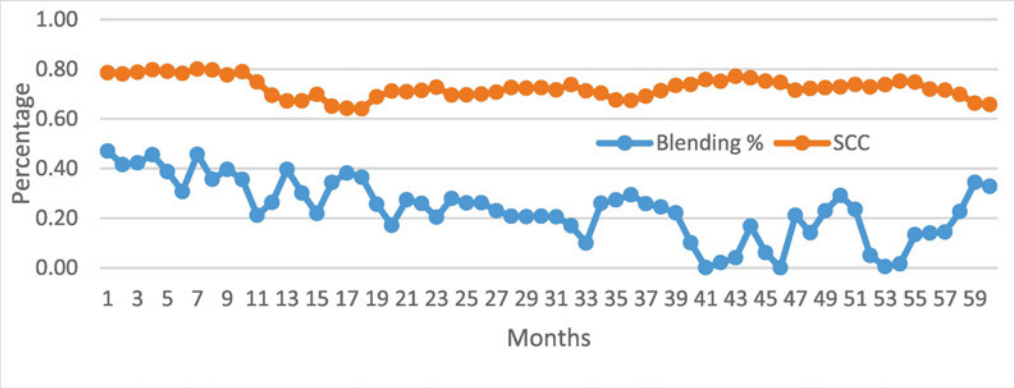
77 As per this practice, the generation will be preferred according to the ascending order of cost of generation

Chart 2.4: Trend in SCC *vis-a-vis* imported coal blending ratio during 2014–19



The SCC did not improve despite blending of higher GCV imported coal in the TPS. The average "As Fired GCV" of imported coal was 4,786 kcal/kg against the procured GCV of 6,000 kcal/kg. Similarly, the "As Fired GCV" of indigenous coal was 3,149 kcal/kg against the procured GCV of 4,058 kcal/kg (average) during 2014–19.

Lack of improvement of SCC, despite blending higher GCV imported coal, is indicative of other operational deficiencies which need to be analysed by TANGEDCO, as it continues to incur higher cost for procuring imported coal.

It may also be mentioned that though TANGEDCO was aware (June 2014) that its TPS could achieve full load by using indigenous coal rather than the blended coal, no action was taken for analysing the reasons behind the fall in GCV and non-improvement of SCC.

Government in its reply (September/October 2020) stated that all the thermal stations do not always receive a proportionately regulated supply of indigenous and imported coal to enable firing in the stipulated ratio. It further stated that since the power stations do not have control over the supply of quality coal, the stations are always forced to fire in a ratio only in accordance to the proportion of availability / stock of indigenous and imported coal and hence, the normative blending ratio are not achieved due to feeding of imported coal through dedicated bunkers. The reply confirms the absence of compliance with standardised blending norms. TANGEDCO therefore needs to ensure effective management of quality coal and also examine the reasons for non-improvement of SCC and fall in GCV despite blending imported coal of higher GCV, as this has an impact on its operational efficiency.

Loss of generation due to poor quality of coal

2.11.3 TANGEDCO reported that targeted generation could not be achieved due to reserved outage based on the advice of load dispatch center, forced outage due to equipment failures and partial load[78] due to coal related issues. TANGEDCO suffered generation loss of 844 MU in MTPS–I, NCTPS–I, TTPS due to coal quality issues during 2014–19 as detailed in **Table 2.9** below.

[78] Generation loss due to partial load arises when a power plant unable to achieve full load due to coal quality issues and equipment problems

Table 2.9: Generation loss due to poor quality of coal

TPS[79]	Year	Loss of generation (MU)				Loss of revenue (₹ in crore)
		Coal Mill System	Coal Quality Variation	Other coal related issues[80]	Total loss	
MTPS–I	2014–17	1.91	118.96	2.09	122.96	12.84
	2017–19	1.40	5.64	16.93	23.97	4.41
NCTPS–I	2014–17	215.67	374.94	7.63	598.24	123.69
	2017–19	6.39	121.80	1.32	129.50	18.04
TTPS	2014–17	1.27	158.29	31.54	191.10	10.56
	2017–19	8.35	4.26	0.63	13.24	2.03
Total		234.99	783.89	60.14	1,079.01	171.57

Source: Performance Review Book of TPS

It may be seen from **Table 2.9** that quality of coal and mill related issues accounted for 78 *per cent* and 22 *per cent* of generation loss resulting in loss of revenue of ₹171.57 crore during 2014–19.

Government in its reply stated that use of indigenous coal with lower GCV and high ash content and imported coal with low GCV and high moisture content were the major reasons for the loss of generation in TPS. The reply is not tenable because the normative operational performance was fixed by TNERC taking into account of coal quality issues. Therefore, loss of generation with reference to norms fixed by TNERC was not justified.

Ash Disposal

2.11.4 Ministry of Environment, Forest and Climate Change (MoEFCC), GOI directed (September1999) gradual phasing out of dumping of fly ash on land and 100 *per cent* disposal of the ash to be achieved by the year 2009.

The details of the generation and utilisation of fly ash is shown below:

Table 2.10: Fly Ash generated and utilised

Year	TTPS			MTPS-1			MTPS-II			NCTPS-1			NCTPS-II			Total	
	Ash Generated (MMT)	Ash Utilised (MMT)	Ash utilised (*per cent*)	Ash Generated (MMT)	Ash Utilised (MMT)	Ash utilised (*per cent*)	Ash Generated (MMT)	Ash Utilised (MMT)	Ash utilised (*per cent*)	Ash Generated (MMT)	Ash Utilised (MMT)	Ash utilised (*per cent*)	Ash Generated (MMT)	Ash Utilised (MMT)	Ash utilised (*per cent*)	Ash Generated (MMT)	Ash Utilised (MMT)
2014-15	1.09	1.09	100	0.98	0.77	78.57	0.42	0.35	83.33	0.61	0.27	44.26	0.88	0.53	60.23	3.98	3.01
2015-16	0.98	0.98	100	1.04	0.59	56.73	0.58	0.49	84.48	0.58	0.14	24.14	1.02	0.45	44.12	4.20	2.65
2016-17	0.66	0.66	100	1.06	0.59	55.66	0.62	0.45	72.58	0.52	0.21	40.38	1.18	0.51	43.22	4.04	2.42
2017-18	0.63	0.63	100	0.78	0.58	74.36	0.51	0.38	74.51	0.68	0.29	42.65	1.27	0.62	48.82	3.87	2.50
2018-19	0.69	0.69	100	0.81	0.57	70.37	0.61	0.49	80.33	0.61	0.32	52.46	1.43	1.06	74.13	4.15	3.13
Total	**4.05**	**4.05**	**100**	**4.67**	**3.10**	**66.38**	**2.74**	**2.16**	**78.83**	**3.00**	**1.23**	**41.00**	**5.78**	**3.17**	**54.84**	**20.24**	**13.71**

Source: Data furnished by TANGEDCO

As seen from the above table in case of NCTPS I and II, only 4.40 MMT out of 8.78 MMT (50 *per cent*) was utilised in the five years ending 2018-19. The

79 Loss of generation owing to partial load due to coal quality issues was not reported by MTPS-II & NCTPS-II

80 Wet coal, coal feeder issue, and coal bunker choking up

balance quantity of fly ash (4.38 MMT[81]) together with the quantum of unlifted bottom ash and wet ash was transported to the ash dyke[82]. This was in violation of the MoEFCC's Notification S.O.763 (E) dated 14th September, 1999, direction for gradual phasing out of dumping of fly ash on land and 100 *per cent* disposal of the ash to be achieved by the year 2009.

According to the notice issued by TNPCB, the TPS at North Chennai, Mettur, and Tuticorin generated 28.19 MMT of bottom ash and disposed 20.20 MMT during the period 2014-19. A quantum of 62.15 MMT of ash remained in the ash dykes in the three plants as on 31 March 2019. Thus, the continued dumping of ash in dyke resulted in contamination of ground water in Buckingham Canal and Kosasthalaiyar river.

TNPCB, based on the study conducted by its technical committee, directed NCTPS to furnish a time bound action plan and mechanism to be adopted to address, *inter-alia*, the following pollution control issues:

(i) The power plant should remove 3.96 lakh MT fly ash deposited inside NCTPS, 0.93 lakh m^3 tonnes of ash from Buckingham canal, and 7.93 lakh MT of ash from Kosasthalaiyar river

(ii) The power plant should replace the existing ash slurry pipe lines for the length of 20.52 kms.

(iii) The plant should also provide 6,000 numbers of trees in and around ash dyke so as to prevent dust emission from the ash dyke.

(iv) Electro Static Precipitator should be modified to achieve the norm for emission level.

However, TANGEDCO was yet to comply with the above directions (June 2020). There was no time bound action plan for the removal of fly ash deposited in the land, as required under the Notification (No S.O.763 (E) dated 14th September, 1999) of MOEFCC. Besides the above, the committee[83] had evaluated the environmental compensation of ₹16.46 crore to be levied on NCTPS for the period November 2004 to November 2019 on account of damage caused to the environment which was yet to be paid (June 2020). Continued dumping of fly ash in the ash ponds, entailed a risk of cutting down the generation of power to keep the ash within the capacity of ash ponds.

Government in its reply (September/October 2020) stated that the disposal of fly ash was satisfactory as per MoEFCC stipulations. The fact, however, remained that TANGEDCO was yet (June 2020) to dispose-off fly ash and bottom ash as mentioned in the paragraph besides unaddressed pollution control issues in NCTPS. Though TANGEDCO had assured (February 2016) the COPU that usage of imported coal by way of blending would address the issue of excess ash content, however, it was seen that despite blending, the ash content could not be reduced. Thus, the pollution control measures taken by TANGEDCO largely were inadequate in all TPS.

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[81] Excluding bottom ash in TTPS

[82] Ash pond where ash is dumped/stored

[83] Appointed by TNPCB, IIT Madras and Central Pollution Control Board

Internal control

2.12 Internal control gives an assurance that the operations are carried out effectively. However, Audit noticed that the internal control mechanism was poor as detailed in the following paragraphs:

Lack of integrated online coal management system

2.12.1 TANGEDCO envisaged (February 2001) computerisation of coal management connecting all TPS and the Coal Wing at Head Office of TANGEDCO at Chennai. The data would include wagon loading / arrivals, unloading, *etc*. and loading of coal into vessels, coal stock, *etc*., as required by TANGEDCO. Even after a lapse of 19 years, TANGEDCO's Coal Wing at Head Office was yet to implement the same, although other wings in TANGEDCO had implemented separate packages without waiting for integrated ERP system. TANGEDCO has not prioritised the computerisation plan for coal management, though the procurement, logistics management and stock management are critical for power generation of the State.

Government in its reply (September/October 2020) stated that it is proposed to implement ERP in Coal Management.

Inadequate Coal Bill Management System

2.12.2 A computerised Coal Bill Management System (CBMS) was developed in-house in December 2013 to process only the indigenous coal bills submitted by the Indian coal companies (CIL). The CBMS is not capable for processing imported coal bills, railway payments and payments to coal handling contractors. Audit observed that CBMS has not been audited by information system audit experts for validating its data reliability and security so far.

Government in its reply (September/October 2020) stated that the Chief Engineer/Information Technology have been addressed to take necessary action in this regard.

Variation in quantity of indigenous coal moved

2.12.3 The movement of indigenous coal by sea is carried out through Poompuhar Shipping Corporation (PSC). The cross verification of the quantity moved as per the Annual Reports of PSC *vis-a-vis* TANGEDCO Coal Data Book (CDB) and the data in its CBMS revealed variations in all the years during 2014–19 as detailed below.

Table 2.11: Variation in quantity of indigenous coal moved

(In Lakh MT)

Year	Quantity moved as per PSC record	Quantity moved as per Coal Data Book	Quantity moved as per CBMS	Difference between PSC and Coal Data Book	Difference between PSC and CBMS	Difference between Coal Data Book and CBMS
(1)	(2)	(3)	(4)	(5)=(2)-(3)	(6)=(2)-(4)	(7)=(3)-(4)
2014–15	138.33	138.39	115.95	(-)0.06	22.38	22.44
2015–16	159.02	159.05	157.91	(-)0.03	1.11	1.14
2016–17	125.44	125.19	124.38	0.25	1.06	0.81

Year	Quantity moved as per PSC record	Quantity moved as per Coal Data Book	Quantity moved as per CBMS	Difference between PSC and Coal Data Book	Difference between PSC and CBMS	Difference between Coal Data Book and CBMS
2017–18	134.56	134.51	134.23	0.05	0.33	0.28
2018–19	153.62	151.30	154.79	2.32	(-)1.17	(-)3.49
Total	710.97	708.44	687.26	2.53	23.71	21.18

Source: PSC Annual Reports and TANGEDCO records

From the above **Table 2.11**, the difference in the quantity moved as per the PSC records and TANGEDCO's CDB was marginal to the extent of 2.53 lakh MT whereas the difference between CBMS and CDB was significant to the extent of 21.18 lakh MT. Even though the differences persisted in all the five years, TANGEDCO was yet to reconcile these figures and reasons of these discrepancies resulting in reporting of inaccurate data on coal movement. Prompt and periodical reconciliation of CBMS and CDB with the PSC records would ensure correctness of the quantity moved, and timely action if any on the variation in quantity could be taken.

Conclusion

The cost of coal constituted 95.54 to 98.41 *per cent* of the total cost of generation at TANGEDCO during 2014–19. The cost of coal plays a key factor in the fixation of tariff. The audit of coal management in TANGEDCO's TPS revealed that:

- Against the linkage of 106.97 Million Metric Tonnes (MMT), TANGEDCO received 71.82 MMT of coal during 2014–19 (25 to 41 *per cent* of Annual Contracted Quantity). To offset the short supply, TANGEDCO resorted to import of coal but did not impose penalty on coal companies as per FSA.
- The execution of import coal substitution scheme was tardy and benefited TANGEDCO only to the extent of 31 *per cent* of the agreed quantity of high grade indigenous coal. No penalty was levied, however ECL claimed extra-contractual performance incentive to the extent of ₹65.43 crore.
- While moving the coal from North Chennai to Mettur by railways, the actual transit loss exceeded the permissible limit in 47 out of 60 months (78 *per cent*) to the extent of 3.85 lakh MTs of coal valued at ₹58.37 crore. But TANGEDCO could not recover the excess transit loss from the contractor due to non-availability of enabling provisions in the Agreement with the coal handling contractor.
- TANGEDCO made payment for minimum guaranteed quantity of 1,008.43 lakh MT of coal against the actual moved quantity of 642.79 lakh MT of coal, thereby incurring an unproductive expenditure of ₹55.34 crore.
- The failure of the coal handling contractors to load coal upto the permissible carrying capacity of Railway wagons resulted in payment of freight of ₹101.35 crore (15.74 lakh MT of coal) without beneficial use.

- Huge drop in GCV up to 2,256 kcal/kg during transit of indigenous coal and more than 960 kcal/kg inside the power stations in various instances test checked by Audit.
- In five TPS studied in Audit, the energy charges proposed by TANGEDCO for billing were based on "As Fired GCV" and was higher by ₹1,805.35 crore during 2014-19 compared to the energy charges which should have been billed based on "As Received GCV", overburdening the consumers to that extent.
- No significant improvement in specific coal consumption in power stations despite blending high quality imported coal with domestic coal.

Thus, TANGEDCO did not take appropriate measures to avoid the inefficiencies in procurement, handling, quality assessment, and consumption of coal, which resulted in increased expenditure to TANGEDCO and consequent higher energy charges to consumers.

Recommendations

TANGEDCO may:

- Review all provisions of FSAs to protect the financial interests of TANGEDCO. A specific provision in FSAs may be incorporated for levy of penalty on coal companies for monthly shortage of coal.
- Review coal handling contracts across TPSs to ensure standardisation and incorporate best and economical practices, record and determine transit loss as well as coal shortages periodically, to avoid undue benefits to contractors. Faulty contracts may be reviewed and short closed if the revised contractual terms are not mutually acceptable.
- Responsibility may be fixed on the officials for not incorporating the clause for recovery of excess transit loss while awarding the contract to CREW for transportation of coal from Kamarajar Port to MTPS I & II.
- Establish an effective control mechanism to cross check the quality and quantity of coal at load ports and at power stations.
- Analyse the reasons and take steps to control the loss of GCV during transit and at power stations.
- Analyse the reasons for non-reduction in SCC despite blending with imported coal and take required measures to improve the same.
- Adopt "As Received GCV" instead of "As Fired GCV" for tariff fixation as recommended by CERC.
- Ensure disposal of fly ash and bottom ash as per the GOI norms.

CHAPTER-III

Compliance Audit observations

Important Audit findings, noticed as a result of test check of transactions of the State Power Sector PSUs are included in this Chapter.

Tamil Nadu Generation and Distribution Corporation Limited

3.1 Loss of revenue

Non-levy of Start-up power Charges at enhanced rate from Generating Plants resulted in loss of revenue of ₹ 23.85 crore

As per Regulation 25 of the Grid Connectivity and Intra-State Open Access Regulations 2014 (Grid Regulations) issued by the Tamil Nadu Electricity Regulatory Commission (TNERC) on 13 March 2014 (effective from 07 May 2014), the generators connected with the state grid are eligible to get start up power after declaration of Commercial Operation Date. The demand shall be limited to 10 *per cent* of the highest capacity of the generating unit of the generating station or the percentage of auxiliary consumption whichever is less, as specified in the TNERC's Tariff Regulations. The supply shall be restricted to 42 days in a financial year. Drawal of power for a day or part thereof shall be accounted as a day for this purpose. The Generator shall pay the Distribution Licensee for the supply of start-up power at the rates as specified by the TNERC in its Tariff Order issued from time to time. Start-up supply beyond 42 days in a financial year may be provided by the Distribution Licensee at the rate of one-and-a- half times of the normal rate as specified by TNERC. The tariff orders applicable from December 2014 and August 2017 prescribed that the charges for start-up power would be billed under High Tension (HT) Tariff V and HT Tariff IA respectively.

During the Compliance Audit (January 2019) of Tuticorin Electricity Distribution Circle (TEDC), it was noticed that the Circle office did not maintain any records to ascertain whether the Generators were adhering to the prescribed norms for start-up power such as (i) 10 *per cent* of the highest capacity of the generating unit of the generating station or the percentage of auxiliary consumption and (ii) 42 days in a financial year. In the absence of records at Circle office, audit conducted an independent verification by downloading the data from Common Meter Reading Instrument (CMRI) to ascertain the day-to-day drawal of power by the Generator. It was found that five captive generators (in TEDC) were exceeding the limit of 42 days during the financial years 2016-17 to 2018-19. However, due to failure to monitor the number of such incidence of drawal of start-up power, the Circle office did not levy the start-up power charges at enhanced rate.

Audit calculated the start-up charges recoverable at enhanced rate from the month following the occurrence of 42nd day in the particular financial year and the under-recovery worked out to ₹22.72 crore. On being pointed out in audit, TANGEDCO stated (February 2020) that demand has been raised (May - December 2019) on the consumers for remitting the amount.

In addition to TEDC, audit sought information on similar cases from 44 Electricity Distribution Circles (EDCs). The response was received from 11 EDCs, about the captive generators installed under their respective circles, while details of captive Generators in the remaining 32 EDCs are awaited. It was observed that in Pudukottai EDC (PEDC), start-up charges were not collected from two consumers at enhanced rate though these Generators had been drawing start-up power beyond 42 days in a year. The amount recoverable worked out to ₹33.44 lakh and ₹79.77 lakh respectively. The total under recovery in PEDC was ₹1.13 crore.

Thus, the total amount of short levy of start-up charges from seven captive Generators in 2 EDCs worked out to ₹23.85 crore as detailed in the **Annexure-5.**

Government in its reply (February 2020) stated that based on the audit observations, demand notices have been issued to the consumers to remit the amount and Superintending Engineer was instructed to follow-up to realise the amount at the earliest. TANGEDCO had initiated recovery action only after it was pointed out by Audit and the amount was yet to be collected (March 2020). This clearly indicated absence of supervisory control in levy and collection of legitimate dues. As the above leakage of revenue was pointed out by Audit during test audit in two EDCs, TANGEDCO may review similar revenue losses if any, in the remaining 32 EDCs.

It is recommended that TANGEDCO needs to put in place a suitable internal control mechanism including appropriate validation control in the billing software to monitor and take appropriate action for the drawal of start-up power beyond 42 days in a financial year.

3.2 Loss of revenue

Non-levy of Parallel Operation Charges from Captive Generating Plants resulted in loss of revenue of ₹22.91 crore

Industrial consumers who have installed captive power generators in their industrial premises use the power for its captive consumption and export the surplus power to the grid owned by the TANGEDCO. These captive generators are connected to the TANGEDCO's grid and this grid connectivity is commonly known as 'parallel operation', for which Parallel Operation Charges (POC) are to be paid by the captive generators.

With effect from 07.05.2014, if a Captive Generating Plant[84] (CGP) opts for parallel operation, it should pay a POC at the rate of ₹30,000 per month for each MW capacity. This is as per Regulation 26 of the Grid Connectivity and

[84] Captive Generating Plants mean a power plant set up by any person to generate electricity primarily for its own use.

Intra-State Open Access Regulations 2014[85] (Grid Regulations), issued by the Tamil Nadu Electricity Regulatory Commission (TNERC). POC is applicable to the generators availing only parallel operation with the grid without availing open access[86].

TNERC vide its order dated 11 August 2017 reiterated that the POC shall be levied on the net capacity[87] of generating plant being utilised for self-consumption and for extending the facility of grid support. When the matter was again referred by TANGEDCO through a petition[88] to TNERC seeking clarification, TNERC (order dated 04 January 2019) confirmed that POC is applicable from 07 May 2014 and the distribution licensee is at liberty to levy POC on the installed capacity of the generating plant/co-generative plants less open access quantum.

During the Compliance Audit of Tuticorin Electricity Distribution Circle (TEDC), it was noticed (January 2019) that the Electricity Distribution Circle (EDC) did not collect the POC from one consumer[89] who had installed captive generator of 160 MW and the POC recoverable was worked out to ₹21.67 crore. On being pointed out in audit, TANGEDCO stated (February 2020) that the demand (April 2019) has been now raised to the consumer for remitting the amount, but the recovery was yet to be made (March 2020).

In order to ascertain similar instances in other EDCs, details were called by Audit from all 44 EDCs. In response, however, 11 EDCs submitted the details of the captive generators installed under their respective EDCs. From the details so furnished, it was noticed (March 2020) that in Thiruvarur EDC[90] and Pudukottai EDC[91], POC were required to be collected from one consumer each and the amount recoverable worked out to ₹42.60 lakh and ₹81.60 lakh respectively. Thus, in the test audit, the total amount of POC recoverable from three captive generators worked out to ₹22.91 crore as detailed in the **Annexure-6.** Details of captive generators in the remaining 32 EDCs were awaited.

Government in its reply (February 2020) stated that based on the audit observations, demand notices have been issued to the consumers to remit the amount and Superintending Engineer was instructed to follow-up to realise the amount at the earliest. TANGEDCO had initiated recovery action only after being pointed out in Audit and the amount is yet to be collected even as 19 months in respect of M/s Vedanta Limited and 4 months in respect of M/s SEDCL[92] & M/s EID Parry (India) Limited have elapsed. This indicates absence of supervisory control in levy and collection of legitimate dues.

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85 Issued on 13th March 2014.

86 The non-discriminatory provision is for the use of transmission lines or distribution system.

87 The installed capacity of the Captive generating plant/Co-generating plants reduced by the extent to which Open Access has been availed

88 Miscellaneous Petition No. 10 of 2018.

89 M/s. Vedanta Limited

90 M/s Southern Energy Development Corporation Limited

91 M/s EID Parry (India) Limited

92 Southern Energy Development Corporation Limited.

It is recommended that TANGEDCO may review similar revenue leakages, in the remaining EDCs and incorporate suitable controls to ensure early collection of dues and avoid loss of revenue.

3.3 Loss of revenue

Irregular sanction of more than one service connection to a person/ establishment/entity in the same premises under Low Tension supply instead of single service connection under High Tension supply resulted in loss of revenue of ₹ 5.15 crore

Tamil Nadu Electricity Regulatory Commission (TNERC) issued[93] (July 2004) Tamil Nadu Electricity Supply Code (Supply Code) and Tamil Nadu Distribution Code (Distribution Code) to regulate the supply and distribution of electricity in the State. As per Regulation 27 (sub-regulations 13 and 14) of the Distribution Code, an establishment or a person will not be given more than one service connection (SC) within the same door number or sub-door number unless there is a permanent physical segregation of the areas for different SCs. Regulation 25 read with 26 of the Distribution Code stipulated that the supply not exceeding a demand of 112 KW[94] can be effected under Low Tension (LT) supply category and power installation exceeding a demand of 112 KW subject to a minimum demand of 63 KVA[95] can be effected under High Tension (HT) Supply (*i.e.,* 11,000 volts and above). As per Delegation of Power[96], SC upto 112 KW can be sanctioned by the Executive Engineer and SC exceeding 112 KW and upto 500 KVA by Superintending Engineer of Electricity Distribution Circle (EDCs) as HT supply.

Audit observed violation of the above Regulation and consequent loss of revenue of ₹71 lakh occurred in four revenue billing units[97] during April to September 2013 and the same was mentioned in the Report of the Comptroller and Auditor General of India for the year ended 31 March 2013 (Public Sector Undertakings) – Government of Tamil Nadu (vide paragraph 3.14). While admitting the revenue loss, the Energy Department in its Explanatory Note to the Committee on Public Undertakings stated that the matter would be taken up with TNERC while filing the next Tariff Petition, to fix the fixed charges for such premises, at par with demand charges of HT services. However, TANGEDCO in its tariff petition (January 2017) did not submit any request to TNERC to fix the fixed charges for such establishments.

Meanwhile, citing the reason that many private educational institutions, commercial establishments and industries have availed LT and Low Tension Current Transformer services instead of single HT service and to avoid

93 As per the powers vested in TNERC vide Section 46 of Electricity Act, 2003
94 Kilowatt
95 Kilovolt ampere
96 In vogue since September 1988.
97 Srivilliputhur, Tenkasi, Tirunelveli (Rural) and Tirunelveli (Urban).

misuse, TNERC amended the Distribution Code and inserted[98] a new sub-regulation 15A to Regulation 27, applicable from 03 December 2014 which reads "Notwithstanding anything contained in sub-regulations 14 and 15, a person or an establishment or an entity shall be given only one service connection in a premises or in contiguous premises to run a business or service or occupation or another form of activity including its associated activities and for activities of the associates, even if there is a permanent physical segregation''. Thus, more than one SC will not be given to any person/establishment/entity in premises despite having physical segregation. Further, SC to any person/establishment/entity in premises for a demand exceeding 112 KW should be effected as a single connection under HT supply.

Test audit of 22 EDCs (out of 43 EDCs) for the year 2017-18, showed that in 18[99] cases under four EDCs, had a total connected load exceeding 112 KW in the same premises. This was in violation of Regulation 27 (15A) of the Distribution Code. Audit observed that more than one SC under LT supply in the same premises for a total demand exceeding 112 KW were irregular and resulted in loss of revenue[100] of ₹5.15 crore (till March 2020) as detailed in **Annexure-7.** Besides, the loss indicated above, till these LT SCs are converted under HT supply, TANGEDCO would incur a recurring revenue loss of ₹1.39 crore *per annum* on this account.

Audit analysis indicated that subsequent to the amendment of December 2014 in the Distribution Code, the Head Office had not issued any guidelines to the field offices to implement the modifications with specific instruction to insist proof of ownership of the premise and the establishment. Further, amended rules were not mapped in the LT Billing software as input controls to alert more than one SC to the same person/establishment/entity in the same premises.

TANGEDCO in its reply (February 2020) stated that it had identified 328 cases of violation under nine EDCs[101] and issued notices to the consumers for conversion of these LT services into HT services. The Government in its reply (August 2020) stated that TANGEDCO had submitted proposals (February 2020) to Code Review Panel[102](CRP) of TNERC to amend the Distribution Code empowering the Licensee for insisting unique reference *viz.*, PAN/GST/Mobile Phone number/Aadhar Card *etc.*, of the consumer and incorporating the same in the master data in LT Billing software to map the rules. Further, it stated that proposal to CRP was also submitted for amendment in the Sub-regulation 15 and 15A enabling the TANGEDCO to issue notices to consumers to merge the multiple SCs in same premises into a single SC within three months failing which the SCs will be disconnected with

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98 Notification No. TNERC/DC/8-21 dated 07 October 2014.

99 Vellore EDC: nine cases; Chennai West EDC: four cases; Virudhunagar EDC: one case and Coimbatore South EDC: four cases.

100 Differential charges collectible based on the LT tariff and the total demand under HT tariff.

101 Salem: 21 cases, Sivaganga: 2, Vellore: 170, Dindigul: 5, Chennai West: 13, Tuticorin: 34, Nilgiris: 3, Virudhunagar: 44 and Coimbatore South: 36

102 To be appointed by TNERC comprising the representatives of consumers to consider the suggestions received from Licensees and consumers.

further due notice of 15 days.

As the test audit revealed violation of Regulation 27 (15A) in four EDCs, as confirmed by TANGEDCO, which indicated failure of supervisory controls in implementing the amended Regulations of Distribution code leading to loss of revenue, responsibility may be fixed for effecting more than one LT-SC in premises, in violation of Regulation 27 (15A).

It is recommended that TANGEDCO may initiate immediate action to review the violations in the remaining EDCs to avoid further recurring loss of revenue.

PART-II

Part II

Chapter IV

Functioning of Public Sector Undertakings (other than Power Sector)

Introduction

4.1 There were 70 Public Sector Undertakings (PSUs) as on 31 March 2019 which related to sectors other than Power Sector. These PSUs were incorporated during the period 1948-49 to 2018-19 and comprised 69 Government Companies and one Statutory Corporation *viz.* Tamil Nadu Warehousing Corporation. The above PSUs included five[103] non-functional companies and eleven[104] subsidiary companies owned by other Government Companies.

During 2018-19, one PSU *viz.*, Tamil Nadu Fibre Net Corporation Limited was formed and one Non-functional PSU *viz.*, State Engineering and Servicing Company of Tamil Nadu Limited has been amalgamated with Tamil Nadu Small Industries Corporation Limited.

The State Government provides financial support to these PSUs in the form of equity, loans and grants/subsidy from time to time. Of these 70 PSUs, the State Government invested funds only in 59 PSUs and not in those Government Companies which were incorporated as joint venture/subsidiary of other Government Companies. Equity of these joint ventures/subsidiary companies was contributed by the respective co-partner/ Holding Companies.

Contribution to the Economy of the State

4.2 A ratio of turnover of the PSUs to the Gross State Domestic Product (GSDP) shows the extent of activities of the PSUs in the State economy. The Compounded Annual Growth Rate (CAGR) is a useful method to measure growth rate over multiple time periods. The **Table 4.1** provides the details of turnover of PSUs (other than Power Sector) and GSDP of Tamil Nadu for a period of five years ended March 2019.

Table 4.1: Turnover of PSUs *vis-a-vis* GSDP of Tamil Nadu

(₹ in crore)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Turnover of PSUs	53,222.73	54,199.81	57,097.38	58,238.01	68,297.32
GSDP of Tamil Nadu	10,72,678	11,76,500	13,02,639	14,61,841	16,64,159
Percentage of Turnover to GSDP of Tamil Nadu	4.96	4.61	4.38	3.98	4.10
Percentage of growth of turnover	9.47	1.84	5.35	2.00	17.27
Percentage of growth of GSDP	10.75	9.68	10.72	12.22	13.84
CAGR of Turnover					5.11
CAGR of GSDP					9.18

Source: Turnover reported in the latest finalized accounts of working PSUs and GSDP figures as per State Finance Audit Report of CAG of India for the year 2018-19 of GoTN.

103 Referred at Serial Numbers 14, 65 to 68 of Annexure-8.

104 Referred at Serial Numbers 25, 26, 27,29,30,31,32,33,34,42 and 47 of Annexure-8

The aggregate turnover of these PSUs were in increasing trend year after year during 2014-19 and its percentage of growth rate was fluctuating in the range of 1.84 to 17.27. The percentage of growth rate of GSDP decreased from 10.75 in 2014-15 to 9.68 in 2015-16 and thereafter increased year after year to 13.84 in 2018-19. GSDP recorded CAGR of 9.18 *per cent* during 2014-19 whereas during the same period, CAGR of the turnover of PSUs (other than power sector) was at 5.11 *per cent* only. This was mainly due to decrease in share of turnover of these PSUs to GSDP from 4.96 *per cent* in 2014-15 to 4.10 *per cent* in 2018-19.

Investment in Public Sector Undertakings (other than Power Sector)

4.3 There are some PSUs which are an instrument/nodal agency to the State Government to provide certain services which the private sector may not be willing to extend due to various reasons. PSUs of such nature are classified as "Social Sector PSUs". Besides, the Government has also entered into certain business segments through some PSUs where it faces competition from private players. PSUs of such nature are classified as "Competitive Sector PSUs". In addition, there were two[105] PSUs which were established by GoTN to perform certain activities which cannot be classified under the above two categories, these PSUs have been dealt with in this report as "Others". Details of investment made in 70 PSUs in the form of equity and long term loans upto March 2019 are detailed in **Annexure-8.**

4.4 The sector-wise summary of investment made in 70 PSUs are given in **Table 4.2**.

Table 4.2: Sector-wise investment in PSUs (other than power sector)

Sector	Number of PSUs	Investment (₹ in crore)		
		Equity	Long term loans	Total
Social Sector (SS)	14	251.70	806.84	1058.54
Competitive Sector (CS)	54	8,556.71	12,085.58	20,642.29
Others	2	16.00	---	16.00
Total	**70**	**8,824.41**	**12,892.42**	**21,716.83**

Source: Latest finalized Annual Accounts

As on 31 March 2019, the total investment (equity and long-term loans) in 70 PSUs was ₹21,716.83 crore. The investment consisted of 40.63 *per cent* towards equity and 59.37 *per cent* in long-term loans. The long term loans advanced by the State Government constituted ₹2,836.55 crore (22 *per cent*) and the balance amount of ₹10,055.87 crore (78 *per cent*) were obtained by the PSUs from Central Government and Banks/Financial Institutions.

The investment has grown by 142.54 *per cent* from ₹8,953.89 crore in 2014-15 to ₹21,716.83 crore in 2018-19. The increase was mainly due to infusion of equity and Loans from GoTN/other Financial Institutions to eight State Transport Undertakings (STUs).

105 Tamil Nadu Police Housing Corporation Limited and Tamil Nadu State Marketing Corporation Limited were established by GoTN for construction of houses for Police Personnel and wholesale and retail sale of Indian Made Foreign Liquor in the State respectively.

During the year 2018-19, no disinvestment, restructuring or privatization of PSUs of other than power sector was done by GoTN.

Budgetary Support to PSUs (other than Power Sector)

4.5 GoTN provides financial support to PSUs in various forms through annual budget. The summarised details of budgetary outgo towards equity, loans, grants/subsidies and loans converted into equity during the year in respect of PSUs for the last three years ending March 2019 are given in **Table 4.3**.

Table 4.3: Budgetary support to PSUs (other than Power Sector) during 2016-19

(₹ in crore)

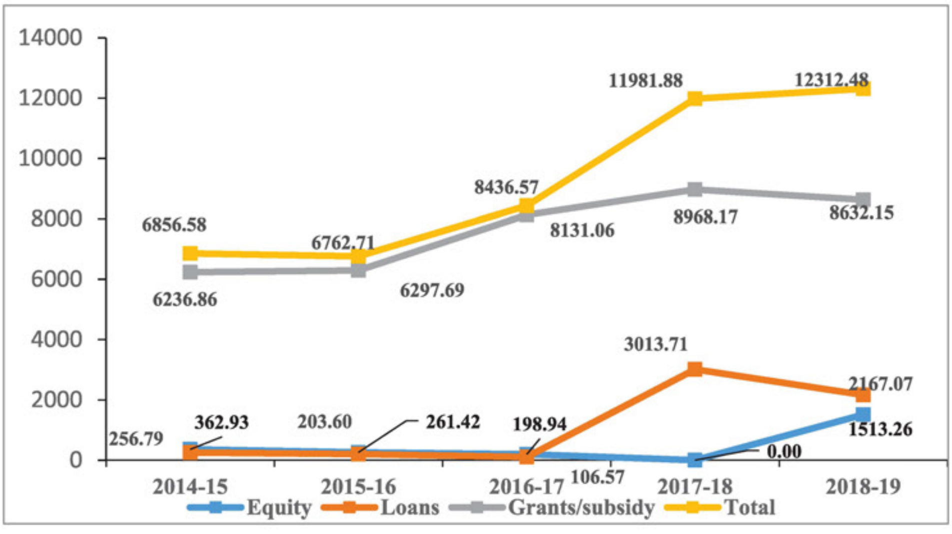
Sl. No.	Particulars[106]	2016-17		2017-18		2018-19	
		Number of PSUs	Amount	Number of PSUs	Amount	Number of PSUs	Amount
1	Equity Capital	11	198.94	--	---	7	1,513.26
2	Loans	5	106.57	13	3,013.71	14	2,167.07
3	Grants/Subsidy	17	8,131.06	20	8,968.17	17	8,632.15
4	**Total Outgo (1+2+3)**	**18**	**8,436.57**	**27**	**11,981.88**	**25**	**12,312.48**
5	Loan repayment/ written off	---	---	---	---	---	--
6	Loans converted into equity[107]	---	---	8	3,021.07	2	308.37
7	Guarantees issued	5	228.30	7	1,548.06	6	699.74
8	Guarantee Commitment	9	1,415.08	9	2,653.72	10	1,707.04

Source: Compiled from the information received from PSUs in respective years.

The details regarding budgetary outgo towards equity, loans and grants/subsidies for the last five years ending March 2019 are given in **Chart 4.1.**

Chart 4.1: Budgetary outgo towards Equity, Loans and Grants/Subsidies

(₹ in crore)



Source: Information received from PSUs during respective years

106 Amount represents outgo from State Budget only.

107 Tamil Nadu Sugar Corporation Limited and Perambalur Sugar Mills Limited

The budgetary assistance received by these PSUs during the years 2014-19 ranged between ₹6,856.58 crore and ₹12,312.48 crore. The budgetary assistance of ₹12,312.48 crore received during the year 2018-19 included Equity: ₹1,513.26 crore, Loans: ₹2,167.07 crore and Grants/Subsidy: ₹8,632.15 crore. GoTN has converted the loan in respect of Tamil Nadu Sugar Corporation Limited and Perambalur Sugar Mills Limited totalling ₹308.37 crore into equity during the year. The subsidy/grants given by the State Government was primarily to procure food grains for distribution under Public Distribution System by Tamil Nadu Civil Supplies Corporation Limited (₹6,000 crore) and to State Transport Undertakings (STUs) to compensate increase in price of diesel, reimbursement of loss on issue of concessional tickets to students and others (₹1,233.57 crore) during 2018-19.

Besides the budgetary support, GoTN also provides guarantee for PSUs to seek financial assistance from Banks and financial institutions. PSUs are liable to pay guarantee fee to the State Government upto 0.5 *per cent* of guarantee amount utilized on raising cash credit from banks and loans from other sources including Letters of Credit. The guarantee commitment given by GoTN to PSUs stood at ₹2,653.72 crore at the end of March 2018 which decreased to ₹1,707.04 crore at the end of March 2019. During the year 2018-19, nine PSUs[108] had paid a sum of ₹121.31 crore to the Government as guarantee fee and at the end of March 2019, the accumulated/outstanding guarantee fee payable by three[109] PSUs was ₹2.41 crore.

Reconciliation with Finance Accounts of Government of Tamil Nadu

4.6 The figures in respect of equity, loans and guarantees outstanding as per records of PSUs should agree with that of the figures appearing in the Finance Accounts of the GoTN. In case the figures do not agree, the concerned PSUs and the Finance Department should carry out reconciliation of the differences. The position in this regard in PSUs (other than Power Sector) as on 31 March 2019 is given in **Table 4.4**.

Table 4.4: Equity/guarantees outstanding as per Finance Accounts of GoTN *vis-a-vis* records of PSUs

(₹ in crore)

Outstanding in respect of	Amount as per records of PSUs	Amount as per Finance Accounts	Number of PSUs involved	Net Difference
Equity	1,428.11	818.38	11	609.73
Guarantees	1,623.47	1,642.96	6	19.49 (Net)

Source: Information received from Annual Accounts of PSUs and Finance Accounts.

Audit observed that such differences occurred in 15 PSUs as shown in

108 Tamil Nadu Backward Classes Economic Development Corporation Limited, Tamil Nadu Minorities Economic Development Corporation Limited, Tamil Nadu Industrial Investment Corporation Limited, Tamil Nadu Sugar Corporation Limited, Tamil Nadu Cements Corporation Limited, Perambalur Sugar Mills Limited, State Express Transport Corporation Limited, Tamil Nadu State Transport Corporation (Tirunelveli) Limited and Tamil Nadu State Marketing Corporation Limited.

109 Tamil Nadu Cements Corporation Limited, Perambalur Sugar Mills Limited and Tamil Nadu State Marketing Corporation Limited.

Annexure-9. The differences between the figures are persisting since last many years. Major difference in Equity and Guarantee were observed in Tamil Nadu State Transport Corporation Limited (Tirunelveli) and Tamil Nadu Industrial Investment Corporation Limited respectively. The details of differences (PSU wise) were brought to the notice of Additional Chief Secretary, Finance Department from time to time for reconciliation[110]. However, the differences persisted. Therefore, it is recommended that the State Government and the respective PSUs should reconcile the differences in a time-bound manner.

Submission of accounts by PSUs (other than Power Sector)

4.7 As of 31 March 2019, there were 70 PSUs (other than Power Sector), *i.e.,*65 working PSUs (64 Government Companies and one Statutory Corporation) and five non-functional PSUs under the audit purview of CAG. The status of timeline followed by the PSUs in preparation and submission of accounts to CAG are discussed below:

Timeliness in preparation of accounts by working PSUs

4.7.1 PSUs were required to submit their annual accounts every year on or before 30 September after close of the respective financial year. However, out of 65 working Government Companies, 38 Government Companies had forwarded their accounts for the year 2018-19 for audit by CAG within the due date i.e. by 30 September 2019 and 24 Companies had submitted their accounts beyond the due date and upto March 2020 whereas the accounts of remaining three[111] Government Companies were in arrears (March 2020). In respect of the Statutory Corporation *viz.*, Tamil Nadu Warehousing Corporation, the statutory audit was conducted by Chartered Accountants and supplementary audit was conducted by CAG. This Statutory Corporation had submitted its accounts for the year 2018-19 for audit belatedly in October 2019.

Details of arrears in submission of accounts by working PSUs (other than Power Sector) at the end of March 2020 of the respective financial years are given in **Table 4.5**.

Table 4.5: Position relating to submission of accounts by the working PSUs (other than Power Sector)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1.	Number of PSUs (other than Power Sector)	60	63	63	64	65
2.	Number of accounts submitted during current year	51	59	65	64	92*
3.	Number of working PSUs which finalised accounts for the current year	38	36	38	40	62
4.	Number of previous year accounts finalised during	13	23	27	24	30

110 Recent Letter was sent on 02 June 2020.

111 Tamil Nadu Adi-dravidar Housing and Development Corporation Limited, Tamil Nadu Minorities Economic Development Corporation Limited and Tamil Nadu Police Transport Corporation Limited.

	current year					
5.	Number of working PSUs with arrears in accounts	22	27	26	24	3
6.	Number of accounts in arrears	26	30	28	33	6
7.	Extent of arrears	One to two years	One to two years	One to two years	One to three years	One to four years

Source: Compiled based on the receipt of accounts from PSUs during respective financial years.
* Accounts of 2018-19 received up to March 2020 have been considered in this report.

Of these 65 working PSUs, 64 PSUs had finalised 92 annual accounts during the period 01 October 2018 to 31 March 2020 which included 62 annual accounts for the year 2018-19 and 30 annual accounts for the previous years. Further, six annual accounts were in arrear which pertain to three[112] PSUs for the years ranging from 2015-16 to 2018-19 as detailed in **Annexure-10.** The Administrative Departments have the responsibility to oversee the activities of these entities and to ensure that the accounts are finalised and adopted by these PSUs in Annual General Meeting within the stipulated period. The concerned Departments were informed quarterly regarding arrear in accounts.

In the absence of finalisation of accounts and their subsequent audit in these PSUs, it could not be ensured whether the investments and expenditure incurred had been properly accounted for and the purpose for which the amount was invested was achieved. Investment of GoTN in these PSUs, therefore, remained outside the control of State Legislature.

Timeliness in preparation of accounts by Non-functional PSUs

4.7.2 During 2017-18, there were six Non-functional companies. Of these, State Engineering and Servicing Company of Tamil Nadu Limited was amalgamated with its holding company, Tamil Nadu Small Industries Corporation Limited. Hence, there were five non-functional PSUs as on 31 March 2019. One PSU, Southern Structurals Limited has finalised its accounts for 2018-19. The accounts of the remaining four non-functional PSUs were in arrears and the extent of arrears are given in **Table 4.6.**

Table 4.6: Details of arrears of accounts of non-functional PSUs

S. No.	Name of non-functional companies	Period for which accounts were in arrears
1.	Tamil Nadu Agro Industries Development Corporation Limited	2013-14 to 2018-19
2.	Tamil Nadu Poultry Development Corporation Limited	2016-17 to 2018-19
3.	TN State Construction Corporation Limited	2018-19
4	Tamil Nadu Goods Transport Corporation Limited	1990-91 to 2018-19

Source: Compiled based on accounts of PSUs received up to September 2019.

Of these, Tamil Nadu Goods Transport Corporation Limited had commenced liquidation process. The closure orders for remaining four[113] PSUs were issued but the liquidation process has not yet been started.

112 Tamil Nadu Adi-dravidar Housing and Development Corporation Limited, Tamil Nadu Minorities Economic Development Corporation Limited and Tamil Nadu Police Transport Corporation Limited

113 Tamil Nadu Agro Industries Development Corporation Limited, Tamil Nadu Poultry Development Corporation Limited, Tamil Nadu State Construction Corporation Limited and Southern Structurals Limited.

In the meanwhile, the Government had ordered (25 February 2019) to convert the existing outstanding loans of ₹98.87 crore into interest free perpetual loans in the case of three[114] closed and non-functional PSUs, till the assets of the respective entities are liquidated and realised for settlement.

During 2018-19, one of the non-functional PSUs incurred an expenditure of ₹4.38 lakh[115] without any beneficial returns. Since the non-functional PSUs were not contributing to the State economy, the State Government needs to take urgent steps either for revival or final closure to avoid further expenditure in these non-functional PSUs.

The Government may take a decision regarding winding up of these five non-functional PSUs.

Comments on Accounts of PSUs (other than Power Sector)

4.8 Sixty-four working companies forwarded 92 audited accounts to the Accountant General during the year. These accounts were subjected to either scrutiny at office level or selected for supplementary audit. The Audit Reports of Statutory Auditors and supplementary audits conducted by the CAG indicated that the quality of accounts needs to be improved substantially. The details of aggregate money value of the comments of Statutory Auditors and the CAG are given **Table 4.7.**

Table 4.7: Impact of audit comments on Working Companies (other than Power Sector)

(₹in crore)

Sl. No.	Particulars	2016-17		2017-18		2018-19	
		Number of accounts	Amount	Number of accounts	Amount	Number of accounts	Amount
1.	Decrease in profit	10	211.11	4	142.04	7	88.11
2.	Increase in profit	1	0.02	1	16.07	1	5.76
3.	Increase in loss	10	18,304.81	11	21,235.10	13	25,426.20
4.	Decrease in loss	---	---	2	38.36	2	18.65
5.	Non-disclosure of material facts	---	---	1	4.49	3	9.92
6.	Errors of classification	3	16.93	1	6.03	8	417.44

Source: Compiled from comments of the Statutory Auditors/ CAG.

During the year, in respect of the latest accounts submitted by 64 PSUs, the Statutory Auditors/CAG had given unqualified certificates for 32 accounts and qualified certificates for 31 accounts. In respect of one PSU *viz*., Tamil Nadu Zari Limited, the Statutory Auditor had issued disclaimer certificate. The compliance to the provisions of Accounting Standards by 18 PSUs remained poor, as there were 24 instances of non-compliance in 18 accounts during the year.

114 Tamil Nadu State Construction Corporation Limited: ₹6.40 crore, Tamil Nadu Agro Industries Development Corporation Limited: ₹20.96 crore and Southern Structurals Limited.: ₹71.51 crore

115 Southern Structurals Limited

Impact of non-finalisation of accounts of PSUs (other than Power Sector)

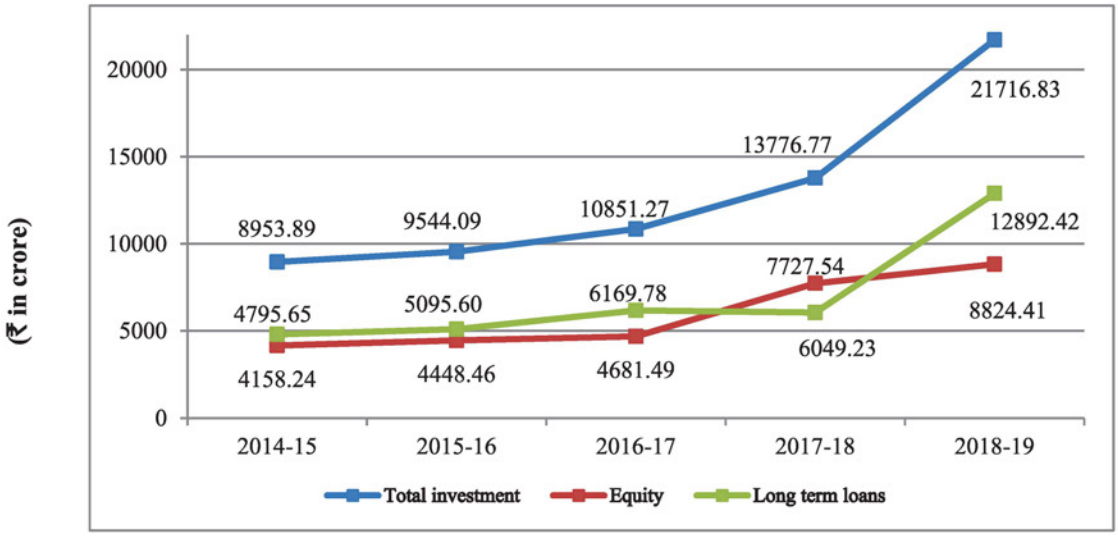
4.9 As pointed in paragraph 4.7.1, the delay in finalisation of accounts may also result in risk of fraud and leakage of public money apart from violation of the provisions of the relevant statutes. Out of three[116] working PSUs which had not finalised their accounts upto 2019, in respect of two[117] PSUs, GoTN had not released any funds in the form of Equity/Loans/Subsidy during 2018-19. The other PSU *viz.,* Tamil Nadu Police Transport Corporation Limited had not submitted its accounts since its inception i.e. from 2015-16 to 2018-19. In view of the above state of arrears of accounts, the actual contribution of the PSU to State GSDP for the year 2018-19 could not be ascertained. Consequently, its contribution to State exchequer was also not reported to the State Legislature.

Performance of PSUs (other than Power Sector)

4.10 The financial position and working results of the 70 PSUs (working and non-functional) are detailed in **Annexure-11** as per their latest finalised accounts.

The PSUs are expected to yield reasonable return on investment made by Government in the undertakings. The total investment of GoTN in PSUs other than power sector as on 31 March 2019 consisted of ₹8,824.41 crore as equity and ₹12,892.42 crore as long term loans. The year wise status of total investment, equity and long term loans during the five-year period 2014-19 is shown in the **Chart 4.2.**

Chart 4.2: Total investment in PSUs (other than Power Sector)



Source: Data received from PSUs in respective years.

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116 Tamil Nadu Adi-dravidar Housing and Development Corporation Limited, Tamil Nadu Minorities Economic Development Corporation Limited and Tamil Nadu Police Transport Corporation Limited

117 Tamil Nadu Adi-dravidar Housing and Development Corporation Limited and Tamil Nadu Minorities Economic Development Corporation Limited

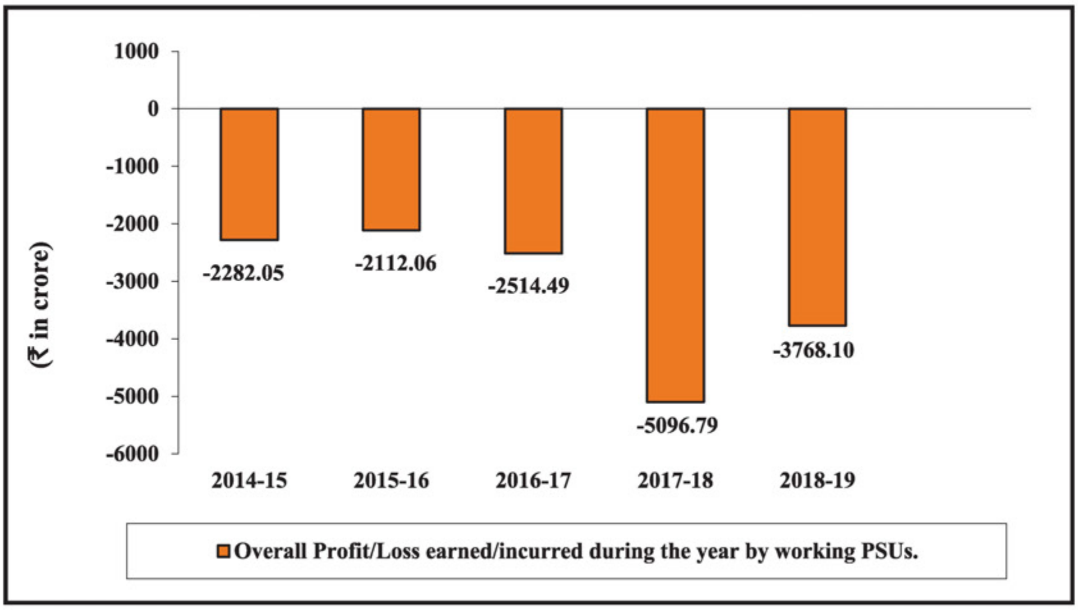
The investment has grown by 142.54 *per cent* from ₹8,953.89 crore in 2014-15 to ₹21,716.83 crore in 2018-19. The investment increased due to addition of ₹4,666.17 crore and ₹8,096.77 crore towards equity and long term loans respectively during 2014-19.

The profitability of a company is traditionally assessed through return on investment, return on equity and return on capital employed. Return on investment measures the profit or loss made in a fixed year relating to the amount of money invested in the form of equity and long term loans and is expressed as a percentage of profit to the total investment. Return on capital employed is a financial ratio that measures the company's profitability and the efficiency with which its capital is used and is calculated by dividing company's earnings before interest and taxes by capital employed. Return of Equity is a measure of performance calculated by dividing net profit after tax by shareholders' funds.

Return on investment

4.11 The Return on investment is the percentage of profit or loss to the total investment. The overall position of Profit/Loss[118] earned/incurred by the 65 working PSUs (other than Power Sector) during 2014-15 to 2018-19 is depicted below in **Chart 4.3**.

Chart 4.3: Overall Profit (+)/Loss (-) earned/incurred by working PSUs



Source: As per the latest accounts finalized during respective years

Sixty-five working PSUs, incurred losses in aggregate in all the five years during 2014-19 and the aggregate losses were in the range of ₹2,112.06 crore to ₹5,096.79 crore. As per the latest finalised accounts, out of 65 working PSUs, 38 PSUs earned a total profit of ₹780.54 crore and 22 PSUs incurred a total loss of ₹4,548.64 crore. Three[119] PSUs neither earned profit nor incurred

118 As per the latest finalised accounts during the respective years.

119 Tamil Nadu Civil Supplies Corporation, Adyar Poonga and Tamil Nadu Skill Development Corporation Limited

any loss during 2018-19 to which the entire deficit was compensated by GoTN in the form of subsidy/Grant. The remaining two PSU[120] are yet to commence their operations. The details of number of PSUs which earned profit/incurred losses during 2014-19 are given in **Table 4.8.**

Table 4.8: Details showing the number of working PSUs (Other than Power Sector) earned profit/incurred loss during 2014-19

Year	Total number of PSUs in the State	Number of PSUs earned profit during the year	Number of PSUs incurred loss during the year	Number of PSUs which reported no profit/loss	Number of PSUs which had marginal profit or loss[121]
2014-15	60	31	18	3	8
2015-16	63	34	18	3	8
2016-17	63	33	18	3	9
2017-18	63*	33	18	3	9 (Profit -6 & Loss-3)
2018-19	63*	36	20	3	4 (Profit -2 & Loss-2)

Source: As per the latest accounts finalized during respective years
* Excluding PSUs which did not commence operation.

As per the latest finalised accounts upto 31 March 2020, the major contributors to profits were Tamil Nadu Industrial Development Corporation Limited (₹154.29 crore), State Industries Promotion Corporation of Tamil Nadu Limited (₹153.88 crore), Tamil Nadu Newsprint and Papers Limited (₹94.39 crore) and Electronics Corporation of Tamil Nadu Limited (₹54.59 crore). Eight[122] STUs reported a total loss of ₹4,234.52 crore.

(a) Return on Investment on the basis of historical cost of investment

4.12 Out of the 70 PSUs (including five non-functional PSUs), GoTN infused funds in shape of equity and interest free loans only in 59 PSUs. In the remaining 11 PSUs, the equity infusion was made by the respective holding companies. As on 31 March 2019, the total investment of the Government in 59 companies stood at ₹9,134.66 crore (Equity ₹6,989.14 crore[123] and Interest free loan ₹2,145.52 crore).

The Return on Investment from PSUs[124] has been calculated on the investment made by the State Government in the form of equity and loans. In the case of loans, only interest free loans are considered as investment since the Government does not receive any interest on such loans and are therefore of the nature of equity investment except to the extent that the loans are liable to be repaid as per terms and conditions of repayment. The investment of State Government in these 59 PSUs (other than power sector) has been arrived at by considering the equity and the interest free loans as investment by State Government. In cases where interest free loans have been repaid by the PSUs,

120 Tamil Nadu Police Transport Corporation Limited and Tamil Nadu Fibrenet Corporation Limited
121 Profit/loss equal to or less than ₹20 lakh.
122 Serial number 53 to 60 (STUs) of Annexure-8
123 Net of equity ₹ 772.19 crore invested up to 2009-10 after adjusting accumulated losses.
124 Including five non-functional PSUs

the same has been reduced from the value of investment in the relevant years. The dividend paid by the PSUs have been deducted from the total investment as the Government had got back returns to that extent. The funds made available in the form of grants/subsidy have not been reckoned as investment since they do not qualify to be considered as investments.

As on 31 March 2019, the investment of the State Government in these 59 PSUs stood at ₹9,134.66 crore (Equity: ₹6,989.14 crore and Interest free loan: ₹2,145.52 crore). Upto the year 2018-19, certain PSUs[125] had paid a total dividend of ₹1,090.54 crore. Thus, the investment of State Government in these 59 PSUs on the basis of historical cost stood at ₹8,044.12 crore.

Since the profit earned or losses incurred by the subsidiaries would have ultimate bearing on the holding company, the profit/loss of the subsidiaries have been added to the net earnings(loss). Accordingly, the profit/loss of all the 70 PSUs are added up and considered as total earnings for that year.

The sector-wise return on investment on historical cost basis for the years 2014-19 from the PSUs under three different classification are given in **Table 4.9.**

Table 4.9: Return on State Government Funds on historical cost basis

(₹ in crore)

Year-wise Sector-wise break-up	Total earnings	Funds invested in the form of equity and interest free loan on historical cost	Return on investment on historical cost basis (in percentage)
(1)	(2)	(3)	(4)= (2/3)*100
2014-15			
Social Sector	26.23	221.45	11.84
Competitive Sector	(-) 2,238.59	1,240.34	(-) 180.48
Others	(-) 90.69	7.62	(-) 1,190.16
Total	**(-) 2,303.05**	**1,469.41**	**(-) 156.73**
2015-16			
Social Sector	28.90	237.86	12.15
Competitive Sector	(-) 2,046.16	1,625.13	(-) 125.91
Others	(-) 116.04	4.62	(-) 2,511.69
Total	**(-) 2,133.30**	**1,867.61**	**(-) 114.23**
2016-17			
Social Sector	33.67	240.36	14.01
Competitive Sector	(-) 2,451.84	1,814.42	(-) 135.13
Others	(-) 115.13	4.62	(-) 2,491.99
Total	**(-) 2,533.30**	**2,059.40**	**(-) 123.01**
2017-18			
Social Sector	38.44	236.58	16.25
Competitive Sector	(-) 5,172.96	4,881.85	(-) 105.96
Others	18.92	1.47	1,287.07
Total	**(-) 5,115.60**	**5,119.90**	**(-) 99.92**
2018-19			
Social Sector	31.46	242.07	13.00
Competitive Sector	(-) 3,842.21	7,804.23	(-)49.23
Others	21.11	(-) 2.18	*
Total	**(-) 3,789.64**	**8,044.12**	**(-) 47.11**

Source: As per the latest accounts finalized during respective years

* Since the net investment was negative, the return on investment was not calculated.

[125] Including subsidiaries.

The return on funds invested was worked out by dividing the total earnings[126] by the historical cost of State Government investments. In all the years under review *i.e.* 2014-19, the overall return on investment was negative and the same ranged between 47.11 to 156.73 *per cent*. At the end of March 2019, the overall return on investment was 47.11 *per cent*. Further analysis revealed that return on investment in the PSUs under Social Sector category was positive in all the years which increased from 11.84 in 2014-15 to 16.25 *per cent* in 2017-18 and decreased to 13 *per cent* in 2018-19. PSUs under Competitive Sector (CS) category witnessed huge losses and the return on investment in these PSUs was fluctuating between 49.23 and 180.48 *per cent*. The major reason for negative return from PSUs under CS category was due to huge losses incurred by eight State Transport Undertakings which was in the range of ₹2,600.25 to ₹5,507.68 crore during 2014-19.

In respect of PSUs under Others category, the return on investment was negative during 2014-15 to 2016-17 which was in the range of 11.90 to 25.12 times of the investment excepting 2017-18 in which it turned positive with 12.87 times of investment. During 2018-19, the net investment was negative and stood at ₹2.18 crore whereas the two PSUs earned profit of 21.11 crore (Previous year: ₹ 18.92 crore) and paid a dividend of ₹3.65 crore despite no infusion by State Government. Moreover, TN Police Housing Corporation Limited was paying dividend to GoTN every year. Hence, investment showed a decreasing trend and showing a negative amount of ₹2.18 crore at the end of March 2019.

(b) Return on investment on the basis of present value of the investment

4.13 An analysis of the earnings vis-à-vis investments in respect of those 59 PSUs (other than power sector) where funds had been infused by the State Government was carried out to assess the profitability of these PSUs. Traditional calculation of return based only on historical cost of investment may not be a correct indicator of the adequacy of the return on the investment since such calculations ignore the present value of money. The present value of the Government investments has been computed to assess the rate of return on the present value of investments of GoTN in the PSUs as compared to historical cost of investments. In order to bring the historical cost of investments to its present value at the end of each year, the past investments/year-wise funds infused have been compounded at the year-wise average rate of interest. For the purpose of compounding, the average rate of government borrowings, which was the minimum cost of funds to the Government for the concerned year was considered. Accordingly, PV of the State Government investment was computed in respect of those 59 PSUs where funds have been infused by the State Government in the shape of equity and interest free loan since inception of these companies till 31 March 2019.

The PV of the State Government investment in 59 PSUs was computed on the basis of following assumptions:

- Interest Free Loans (IFL) have been considered as fund infusion by the State Government. However, in case of repayment of loans by the PSUs, the PV was calculated on the reduced balances of interest free

126 This includes Net profit (+)/Loss (-) of all the PSUs including subsidiaries.

loans over the period. The funds made available in the form of grant/subsidies have not been reckoned as investment since they do not qualify to be considered as investment as indicated in paragraph 4.12.

- The dividend paid by the PSUs have been deducted from the total investment in the respective years.
- The average rate of interest on government borrowings for the relevant financial year[127] was adopted as compounded rate for arriving at PV since they represent the cost incurred by the Government towards investment of funds for the year and therefore considered as the minimum expected rate of return on investments made by the Government.

4.14 The State Government's investment in these 59 PSUs in the form of equity and interest free loans for the period from 2010-11 to 2018-19 and the consolidated position of the PV and the total earnings of PSUs (other than power sector) for the same period is indicated in **Table 4.10**.

Table 4.10: Year-wise details of investment by the State Government and PV of Government investment for the period from 2010-11 to 2018-19

(₹ in crore)

Financial year	Present value of total investment at the beginning of the year	Equity infused by the GoTN during the year	IFL given by GoTN during the year	IFL converted into grant/ equity	Dividend paid by the PSUs	Total investment at the end of the year after adjusting dividend	Average rate of interest on government borrowings (in %)	Present value of total investment at the end of the year	Minimum expected return to recover cost of funds for the year	Actual Total earnings for the year
(1)	(2)	(3)	(4)	(5)	(6)	(7)= (2+3+4-5-6)	(8)	(9)= (7+ (7x8/100)	(10)= (9x8/100)	(11)
Upto 2009-10	--	772.19	57.87	---	64.65	765.41	7.29	821.21	59.87	---
2010-11	821.21	198.82	61.62	---	55.80	1,025.85	7.53	1,103.09	83.06	(-)1,122.00
2011-12	1,103.09	57.04	5.16	---	30.11	1,135.18	7.43	1,219.53	90.61	(-)1,437.78
2012-13	1,219.53	151.59	8.16	---	69.51	1,309.77	7.43	1,407.08	104.55	(-)431.99
2013-14	1,407.08	244.71	46.69	---	128.81	1,569.67	7.90	1,693.68	133.80	(-)841.12
2014-15	1,693.68	335.49	9.24	---	130.29	1,908.12	8.12	2,063.06	167.52	(-)2,303.05
2015-16	2,063.06	439.60	64.14	---	105.54	2,461.26	8.38	2,667.51	223.54	(-)2,133.30
2016-17	2,667.51	249.37	143.24	---	200.82	2,859.30	8.11	3,091.19	250.70	(-)2,533.30
2017-18	3,091.19	3,027.07	171.20	---	137.77	6,151.69	8.53	6,676.43	569.50	(-)5,115.60
2018-19	6,676.43	1,513.26	1,578.20[128]	---	167.24	9,600.65	8.27	10,394.62	859.64	(-)3,789.64
Total		**6,989.14**	**2,145.52**	---	**1,090.54**					

Source: Details as per annual accounts and as furnished by the PSUs.

The funds infused in these PSUs upto March 2010 was ₹830.06 crore (Equity: ₹772.19 crore and Interest free loan: ₹57.87 crore). During 2010-19, a total

127 The average rate of interest on government borrowings was adopted from the Reports of the CAG of India on State Finance Audit Report (GoTN) for the concerned year wherein the calculation for the average rate for interest paid = Interest Payment/ [(Amount of previous year's Fiscal Liabilities + Current year's Fiscal Liabilities)/2]*100.

128 Consolidation and conversion of loans as per G.O.Ms No.72 Finance (Loans and Advances Cell) Department dated 25 February 2019 and annual accounts of PSUs.

fund of ₹8,304.60 crore (Equity: ₹6,216.95 crore and Interest free loan: ₹2,087.65 crore) was infused in these PSUs. During the same period, these PSUs paid a total dividend of ₹1,090.54 crore. After deducting the dividend paid, the total investment at historical cost worked out to ₹8,044.12 crore. The present value of the funds infused in these PSUs at the end of March 2019 worked out to ₹10,394.62 crore. During 2010-11 to 2018-19, the total earnings were negative in all the years and the actual earnings remained below the minimum expected return to recover cost of funds infused in these PSUs. The net aggregate loss was in the range of ₹431.99 crore to ₹5,115.60 crore against the expected profit between ₹59.87 crore to ₹859.64 crore. The losses were mainly from PSUs under Competitive Sector which set off the profits earned by the PSUs under Social Sector.

4.15 Analysis of comparison of return on investments of funds at historical cost with its PV under Sector-wise revealed that PSUs under Social Sector had positive returns and Competitive Sector PSUs had negative returns in all the five years during 2014-15 to 2018-19. PSUs under Others category had negative return during 2014-15 to 2018-19 excepting 2017-18 in which it had positive return. If the PSUs are earning profit, the rate of return calculated on historical cost would be higher whereas, the same would be less if calculated on the PV of the investments. In case of losses, the rate of return would already be negative and hence, the comparative position was not calculated. The Sector wise comparative position of return on investment on the historical cost and with its present value during five years ended 2018-19 are given in **Table 4.11.**

Table 4.11: Comparative position of return on investment on historical cost basis and PV

(₹ in crore)

Year wise Sector-wise break-up	Total earnings	Historical cost of funds invested in the form of equity and interest free loan	Return on investment on historical cost (in percentage)	Present value of the funds invested in the form of equity and interest free loan	Return on investment on the present value (in percentage)
(1)	(2)	(3)	(4)=2/3*100	(5)	(6)=2/5*100
2014-15					
Social Sector	26.23	221.45	11.84	326.18	8.04
Competitive Sector	(-) 2,238.59	1,240.34	(-) 180.48	1,721.85	*
Others	(-) 90.69	7.62	(-) 1,190.16	15.03	*
Total	**(-) 2,303.05**	**1,469.41**	**(-) 156.73**	**2,063.06**	*
2015-16					
Social Sector	28.90	237.86	12.15	371.30	7.78
Competitive Sector	(-) 2,046.16	1,625.13	(-) 125.91	2,283.17	*
Others	(-) 116.04	4.62	(-) 2,511.69	13.04	*
Total	**(-) 2,133.30**	**1,867.61**	**(-) 114.23**	**2,667.51**	*
2016-17					
Social Sector	33.67	240.36	14.01	404.11	8.33
Competitive Sector	(-) 2,451.84	1,814.42	(-) 135.13	2,672.98	*
Others	(-) 115.13	4.62	(-) 2491.99	14.10	*
Total	**(-) 2,533.30**	**2,059.40**	**(-) 123.01**	**3,091.19**	*

2017-18					
Social Sector	38.44	236.58	16.25	434.48	8.85
Competitive Sector	(-) 5,172.96	4,881.85	(-) 105.96	6,230.07	*
Others	18.92	1.47	1,287.07	11.88	159.26
Total	**(-) 5,115.60**	**5,119.90**	**(-) 99.92**	**6,676.43**	*
2018-19					
Social Sector	31.46	242.07	13.00	476.35	6.60
Competitive Sector	(-) 3,842.21	7,804.23	(-)49.23	9,909.35	*
Others	21.11	(-)2.18	*	8.92	236.66
Total	**(-) 3,789.64**	**8,044.12**	**(-) 47.11**	**10,394.62**	*

Source: As per the latest accounts finalized during respective years

* In view of the investment turning negative/ loss, rate of return was not calculated on Historical cost/PV of the investment in respective years.

From the table above, it is evident that the return on investment under present value method was lesser than the return calculated under historical method. In respect of PSUs under Social Sector, the rate of return calculated on the historical cost of funds infused was in the range of 11.84 to 16.25 *per cent* during the years 2014-15 to 2018-19, whereas it reduced to 6.60 to 8.85 *per cent* on its present value during the period.

PSUs under Competitive Sector category witnessed huge losses and the return on investment in these PSUs was negative in all the five years. This was in the range of 49.23 to 180.48 *per cent.* The major reason for negative return from PSUs under competitive sector category was huge losses incurred by eight State Transport Undertakings. Continuous loss of these PSUs resulted in increase in accumulated erosion of net worth as discussed in paragraph 4.16.

In respect of PSUs under Others category, the rate of return calculated on the historical cost of funds infused was in the range of 11.90 to 25.12 times during the years 2014-15 to 2018-19 excepting 2017-18, where it had a positive return.

Erosion of net worth

4.16 Net worth means the sum total of paid capital plus free reserves and surplus minus accumulated losses and deferred revenue expenditure. Essentially it is a measure of what an entity is worth to the owners. A negative net worth indicates that the entire investment by the owners has been wiped out by accumulated losses and deferred revenue expenditure. As per the latest finalised accounts, the paid up capital of 70 PSUs stood at ₹8,824.41 crore and its aggregated accumulated losses (net of free reserves of ₹3,590.44 crore in 34 PSUs) stood at ₹27,178.72 crore leaving a negative net worth of these PSUs at₹18,354.31 crore is indicated in **Table 4.12.**

Table 4.12: Net worth of 70 PSUs (other than Power Sector) during 2014-19

(₹ in crore)

Year wise Sector-wise break-up	Paid up capital	Accumulated profit (+)/ loss(-) at the end of the year	Deferred revenue expenditure	Net worth
(1)	(2)	(3)	(4)	(5)=2+3-4
2014-15				
Social Sector	204.66	160.52	--	365.18
Competitive Sector	3,907.81	(-)11,248.30	--	(-)7,340.49
Others	16.00	(-) 67.56	--	(-) 51.56
Total	**4,128.47**	**(-) 11,155.34**	**--**	**(-) 7,026.87**
2015-16				
Social Sector	224.55	190.17	--	414.72
Competitive Sector	4,168.48	(-) 13,579.27	--	(-) 9,410.79
Others	16.00	(-) 141.48	--	(-) 125.48
Total	**4,409.03**	**(-) 13,530.58**	**--**	**(-) 9,121.55**
2016-17				
Social Sector	232.43	225.32	--	457.75
Competitive Sector	4,372.94	(-) 17,435.13	--	(-) 13,062.19
Others	16.00	(-) 130.97	--	(-) 114.97
Total	**4,621.37**	**(-) 17,340.78**	**--**	**(-) 12,719.41**
2017-18				
Social Sector	243.06	257.30	--	500.36
Competitive Sector	7,466.48	(-) 21,233.87	--	(-) 13,767.39
Others	16.00	(-) 47.69	--	(-) 31.69
Total	**7,725.54**	**(-)21,024.26**	**--**	**(-) 13,298.72**
2018-19				
Social Sector	251.70	301.59	--	553.29
Competitive Sector	8,556.71	(-)27,443.93	--	(-)18,887.22
Others	16.00	(-)36.38	--	(-) 20.38
Total	**8,824.41**	**(-)27,178.72**	**--**	**(-) 18,354.31**

Source: Audit Reports and latest finalized accounts during respective years

It is evident from the table above, 14 PSUs under Social Sector have been earning profit and had accumulated profit in all the years. Consequently, their net worth was also positive and showed increasing trend from ₹365.18 crore in 2014-15 to ₹553.29 crore in 2018-19.

The 54 PSUs under Competitive Sector were incurring losses in all the years and their accumulated losses increased from ₹11,248.30 crore in 2014-15 to ₹27,443.93 crore in 2018-19. The net worth at the end of 2014-15 was negative at ₹7,340.49 crore. The position further deteriorated in the subsequent years and stood at ₹18,887.22 crore at the end of 2018-19. The negative net worth under this category of PSUs was mainly from eight STUs which reported a net erosion of ₹23,169.53 crore at the end of March 2019. The main reasons for the losses in State Transport Undertakings (STUs) were non-revision of bus fare from time to time in line with the increase in the fuel cost and inefficiencies in fleet management. The Government needs to take appropriate action to make the STUs viable.

The net worth of two PSUs under Others category was negative at ₹51.56 crore (2014-15) and fluctuating in subsequent years and decreased to ₹20.38 crore during 2018-19. The overall position of net worth of 70 PSUs was negative in all the years and fluctuated between ₹7,026.87 crore and ₹18,354.31 crore during 2014-19.

The negative networth indicate that the liabilities of these PSUs have exceeded the assets and instead of paying returns to the shareholders, the shareholders owe money.

Dividend payout

4.17 The State Government had formulated (May 2014) a dividend policy, under which all PSUs were required to pay a minimum return of 30 *per cent* of net profit after tax or 30 *per cent* of the paid-up share capital, whichever was higher, subject to availability of disposable profits. Out of the 65 working PSUs at the end of March 2019, the State Government's equity infusion was only in 54 PSUs (50 PSUs during 2014-15). Thus, the dividend payout if any, to the State Government would arise from 54 PSUs only. The total equity in these 54 working PSUs at the end of March 2014 was ₹3,721.66 crore, which increased to ₹8,168.43 crore at the end of March 2019. Against this equity, the annual dividend received by the Government was in the range of ₹92.34 crore to ₹187.62 crore. Details of total equity infused in the 54 PSUs, equity infused in profit earning PSUs and the dividend paid to the State Government during 2014-19 are given in **Table 4.13.**

Table 4.13: Declaration of dividend by PSUs other than power sector during 2014-19

(₹ in crore)

Year	Total number of PSUs		PSUs which earned profit		PSUs which declared dividend		Dividend payout ratio (%)
	Number of PSUs	Equity amount	Number of PSUs	Equity infused	Number of PSUs	Dividend paid	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8=7/5x100)
2014-15	50	3,721.66	34	1,012.43	17	130.29	12.87
2015-16	53	3,973.49	34	1,072.31	16	92.34	8.61
2016-17	51	4,160.36	33	1,097.72	19	187.62	17.09
2017-18	52	7,241.90	32	1,072.21	13	111.37	10.39
2018-19	54	8,168.43	30	700.90	19	154.04	21.98

(Source: Latest finalised accounts and details received from PSUs)

During 2014-19, the number of PSUs which earned profits ranged between 30 and 34 and the number of PSUs declared/paid dividend to GoTN was in the range of 13 to 19. The dividend payout ratio of PSUs which earned profit during 2014-19 ranged between 8.61 to 21.98 *per cent* only against the prescribed limit of 30 *per cent*.

Of the 19 PSUs which declared dividend during 2018-19, thirteen had paid less than the prescribed limit of 30 *per cent*, three PSUs had paid the dividend equivalent to the prescribed limit and three PSUs had paid in excess of the prescribed amount. The major contributors of the dividend were State Industries Promotion Corporation of Tamil Nadu Limited:₹49.23 crore, Tamil Nadu Newsprint and Papers Limited:₹34.61 crore, Tamil Nadu Industrial

Development Corporation Limited: ₹21.61 crore, Tamil Nadu Magnesite Limited: ₹14.32 crore and Electronics Corporation of Tamil Nadu Limited: ₹7.78 crore.

Return on Equity

4.18 Return on Equity (ROE) is a measure of financial performance to assess how effectively management is using shareholders' funds to create profits and is calculated by dividing net income (i.e., net profit after taxes) by shareholders' funds. It is expressed as a percentage and can be calculated for any company if both the net income and shareholders' funds are in positive numbers. Shareholders' fund of a company is calculated by adding paid up capital and free reserves net of accumulated losses and deferred revenue expenditure and reveals how much would be left for a company's stakeholders if all assets were sold and all debts paid. A positive shareholders' fund reveals that the company has enough assets to cover its liabilities while negative figures means that liabilities exceed the assets. ROE has been computed in respect of 70 PSUs (other than power sector) and the details of shareholders' funds and ROE during 2014-19 are given in **Table 4.14**.

Table 4.14: ROE relating to 70 PSUs during 2014-19

(₹ in crore)

Year	Net income	Shareholders' funds	ROE (in %)
2014-15	(-)2,303.05	(-)7,026.87	--
2015-16	(-)2,133.30	(-)9,121.55	--
2016-17	(-)2,533.30	(-)12,719.41	--
2017-18	(-)5,115.60	(-)13,298.72	--
2018-19	(-)3,789.64	(-)18,354.31	--

Source: As per the latest finalised accounts

As can be seen from the above table, during all the five years ending 2018-19, the net income was negative and thus, the ROE could not be worked out. This indicated liabilities exceeded assets for the above companies.

Return on Capital Employed

4.19 Return on Capital Employed (ROCE) is a ratio that measures a company's profitability and the efficiency with its capital employed. ROCE is calculated by dividing a company's earnings before interest and taxes (EBIT) by the capital employed[129]. The details of ROCE of the PSUs (other than Power Sector) during the period from 2014-15 to 2018-19 are given in **Table 4.15.**

Table 4.15: Return on Capital Employed

(₹ in crore)

Year	EBIT	Capital Employed	ROCE(%)
2014-15	(-)548.84	(-)2,231.22	--
2015-16	379.84	(-)4,025.95	--
2016-17	393.80	(-)6,549.63	--
2017-18	(-) 2,705.14	(-)2,840.52	--
2018-19	(-)1,287.64	(-)5,461.89	--

Source: As per the latest finalised accounts

129 Capital employed = Shareholders funds plus long term loans.

The ROCE of these PSUs during 2014-19 was in negative, as the capital employed was negative which ranged between ₹2,231.22 crore and ₹6,549.63 crore during 2014-19.

Analysis of the Long Term loans of the PSUs (other than power sector)

4.20 Analysis of the long term loans of the PSUs of other than power sector which had leverage during 2014-19 was carried out to assess the ability of the companies to service the debt owed by the PSUs to Government, Banks and other financial institutions. This was assessed through the interest coverage ratio and debt turnover ratio in the following paragraphs.

Interest Coverage

4.21 Interest Coverage Ratio (ICR) is used to determine the ability of a PSU to pay interest on outstanding debt and is calculated by dividing earnings before interest and taxes (EBIT) of a PSU by interest expenses of the same period. The lower the ratio, the lesser the ability of the PSU to pay interest on debt. An interest coverage ratio below one indicated that the PSU was not generating sufficient revenues to meet its expenses on interest. The details of positive and negative interest coverage ratio during the period from 2014-19 are given in **Table 4.16.**

Table 4.16: Interest coverage ratio of working PSUs (other than Power Sector)

Year	Interest (₹in crore)	EBIT (₹in crore)	Number of PSUs having interest liability	Number of PSUs with negative ICR	Number of PSUs with ICR more than zero and upto one	Number of PSUs having ICR more than one
2014-15	1,199.03	(-)548.84	43	15	1	27
2015-16	1,583.14	379.84	43	14	2	27
2016-17	2,068.13	393.80	42	14	2	26
2017-18	2,001.02	(-)2,705.14	42	13	5	24
2018-19	2,200.15	(-)1,287.64	39	14	12	13

Source: As per the latest finalised accounts during the respective years

Of the 39 PSUs of other than power sector having liability of loans during 2018-19, 14 PSUs had negative ICR indicating that these PSUs could not generate adequate income to pay off its interest liability. Remaining 25 PSUs could generate income to cover its interest liability, out of which in 13 PSUs, the ICR was more than one indicating sufficient income to pay off its interest burden.

Debt Turnover ratio

4.22 The details of the total debts and the turnover of the PSUs (other than Power Sector) are given in **Table 4.17.**

Table 4.17: Key parameters of the PSUs

(₹ in crore)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Debt	4,795.65	5,095.60	6,169.78	10,458.20	12,892.42
Turnover	53,222.73	54,199.81	57,097.38	58,238.01	68,297.32
Debt-Turnover Ratio	0.09:1	0.09:1	0.11:1	0.18:1	0.19:1

Source: As per the latest finalised accounts

During the last five years, the turnover of these PSUs increased from ₹53,222.73 crore from 2014-15 to ₹68,297.32 crore in 2018-19 representing an overall growth rate of 28.32 *per cent* whereas, the debt increased from ₹4,795.65 crore to ₹12,892.42 crore representing an overall growth of 168.83 *per cent*. The debt-turnover ratio ranged between 0.09 and 0.19 during this period.

Winding up of non-functional PSUs

4.23 One non-functional PSU, State Engineering and Servicing Company of Tamil Nadu Limited, for which merger orders were issued, had been amalgamated with its holding company, Tamil Nadu Small Industries Corporation Limited. Hence, out of the 70 PSUs, five PSUs were non-functional having a total investment of ₹95.47 crore (Equity: ₹47.15 crore and long term loans:₹48.32 crore) as per latest finalized accounts at the end of 31 March 2019.The number of non-functional PSUs at the end of each year during the last five years ended 2018-19 are given in **Table 4.18:**

Table 4.18: Non-functional PSUs

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Number of non-functional companies	7	6	6	6	5

Source: Compiled from the information included in the Audit Report (PSUs), Government of Tamil Nadu of respective years.

Five PSUs which are non-functional, were not carrying out any operations from last 17 to 29 years. Out of these five PSUs, one PSU *viz.*, Tamil Nadu Goods Transport Corporation Limited had started the liquidation process and in respect of other companies, State Government had issued closure orders for which liquidation process is yet to be started.

Performance Audit and Compliance Audits Paragraphs

4.24 For the Report of the Comptroller and Auditor General of India (Public Sector Undertakings) for the year ended 31 March 2019, six compliance audit paragraphs related to seven PSUs were issued to the Principal Secretaries/Secretaries of the respective Administrative Departments with request to furnish replies within four weeks. Replies to the five compliance audit paragraphs have been received from the State Government and taken into account while finalizing this Report. The total financial impact of these compliance audit paragraphs is ₹120.19 crore.

Follow up action on Audit Reports

4.25 The Report of the CAG represents the culmination of the process of audit scrutiny. It is, therefore, necessary that they elicit appropriate and timely response from the Executive. The GoTN had issued (1997) instructions to all Administrative Departments to submit replies/explanatory notes to paragraphs/reviews included in the Reports of the CAG within a period of two months of their presentation to the Legislature in the prescribed format without waiting for any questionnaire from the Committee on Public Undertakings (COPU).

Replies outstanding

4.25.1 Table 4.19 gives the status of receipt of explanatory notes in respect of the Audit Reports presented before the State Legislature.

Table 4.19: Explanatory notes not received (as on 31 March 2020)

Year of the Audit Report	Date of placement of Audit Report in the State Legislature	Total Performance Audits (PAs) and Paragraphs in the Audit Report		Number of PAs/Paragraphs for which explanatory notes were not received	
		Performance Audit	Paragraphs	Performance Audit	Paragraphs
2012-13	12.08.2014	--	06	--	01
2013-14	29.09.2015	01	08	01	03
2015-16	19.07.2017	02	07	--	02
2016-17	09.07.2018	01	09	--	04
TOTAL		**04**	**30**	**01**	**10**

From the above, it could be seen that out of four Performance Audits and 30 paragraphs, explanatory notes to one Performance Audit and 10paragraphs in respect of six Departments, which were commented upon, were not received (March 2020).

Discussion of Audit Reports by COPU

4.25.2 The status as on 31 March 2020 of Performance Audits/paragraphs that appeared in Audit Reports (PSUs) and discussed by COPU was as under:

Table 4.20: Reviews/Paras appeared in Audit Reports *vis-à-vis* discussed as on 31 March 2020

Period of Audit Report	Number of PAs/Paragraphs			
	Appeared in Audit Report		Paragraph Discussed	
	PAs	Paragraphs	PAs	Paragraphs
2008-09	03	12	03	11
2010-11	01	09	--	08
2011-12	01	07	01	04
2012-13	--	06	--	--
2013-14	01	08	--	01
2014-15	02	08	--	04
2015-16	02	07	01	--
2016-17	01	09	--	--
TOTAL	**11**	**66**	**05**	**28**

Compliance to Reports of COPU

4.25.3 As per the directions (1997) given by the Government, the Action Taken Notes (ATNs) on the COPU's recommendations were to be forwarded within six months from the date of placement of COPU's recommendations in the State Legislature. It was, however, noticed that ATNs in respect of 10 paragraphs pertaining to six Reports of the COPU presented to the State Legislature between April 2002 and March 2018 had not been received (March 2020) as indicated below:

Table 4.21: Compliance to COPU Reports

Year of the COPU Report	Total number of COPU Reports	Total number of recommendations in COPU Report	Number of recommendations where ATNs not received
2002-03	02	02	02
2011-12	01	02	02
2014-15	01	02	02
2016-18	02	04	04
TOTAL	**06**	**10**	**10**

These Reports of COPU contained recommendations in respect of paragraphs pertaining to two Departments, which appeared in the Reports of CAG for the years 1992-93 to 2009-10.

It is recommended that the Government may prescribe a time schedule and resource person in each PSUs to ensure (a) sending replies to the Performance Audit Reports and Paragraphs, Explanatory Notes and ATNs on the recommendations of COPU as per the prescribed time schedule; (b) recovery of loss/outstanding advances/overpayments within the prescribed period; and (c) revamping of the system of responding to audit observations. The Government may establish a system to monitor compliance to the above.

Chapter V

Compliance Audit Observations relating to State Public Sector Undertakings (other than Power Sector)

Important Audit findings, noticed as a result of test check of transactions of the State Public Sector Undertakings (other than Power Sector) are included in this Chapter.

5.1 Avoidable Payment of penalty

Two PSUs disregarded the directives of Ministry of Environment and Forest, GoI and continued to mine limestone without obtaining Environment clearance which resulted in avoidable payment of penalty of ₹ 57.72 crore and additional liability of ₹ 2.77 crore

The Ministry of Environment and Forest (MoEF), Government of India (GoI), Environmental Impact Assessment (EIA) Notifications[130] require companies to obtain Environmental Clearance (EC) for mining activity. In case of violation, the matter must be put up to the Board of Directors of the Company and a written commitment in the form of a resolution that the violations will not be repeated needs to be submitted to MoEF. Further, the State Government must initiate credible action on the violation, against the Company.

Two PSUs *viz.,* Tamil Nadu Cements Corporation Limited (TANCEM) and Tamil Nadu Minerals Limited (TAMIN), working under the administrative control of Industries Department of Government of Tamil Nadu (GoTN) engaged in mining of limestone did not obtain the EC from MoEF and continued the mining operations. Consequently, these PSUs were required to pay an avoidable penalty of ₹57.72[131] crore and had to bear an additional liability of ₹2.77 crore as discussed below:

Tamil Nadu Cements Corporation Limited

(a) To meet the limestone requirement of its Ariyalur plant, TANCEM obtained three[132] different leases from GoTN between March 1980 and May 1985.

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130 Notification Nos. S.O. 1533 and J-11013/41/2006-IA. II (1) issued in 2006 and 2012 respectively.

131 TANCEM: ₹43.60 crore plus TAMIN: ₹14.12 crore

132 (i) GO No. 344 dated 10 March 1980: 240.61 Hectares, (ii) GO No. 456 dated 16 May 1985: 194.165 Hectares and (iii) GO. No.469 dated 21 May 1985: 66.11 Hectares.

TANCEM applied to MoEF for granting of EC for mining operations in the mines covered under three Government Orders (GOs) in March 2014. MoEF observed (July 2014) that TANCEM continued the operations without a valid EC in violation of the Notification of 2006 and was asked to close down the operations. In its reply to Tamil Nadu Pollution Control Board (TNPCB), TANCEM stated (December 2014) that it was not aware of the 2006 Notification and had not taken any steps for obtaining EC for the enhanced production. TANCEM again submitted (May 2017) application to MoEF for granting EC for the above mines. However, in view of the judgment of the Hon'ble Supreme Court (August 2017)[133], MoEF directed (January 2018) TANCEM to remit 100 *per cent* cost of the mineral mined without EC and furnish No Objection Certificate (NOC) to that effect from the State Government. TANCEM remitted (July 2018) a sum of ₹43.60 crore towards penalty for limestone of 9,84,184.70 MT mined illegally during the period 15 January 2016 to 19 August 2017, to the Department of Geology and Mining, GoTN and obtained NOC from the State Government. The process of granting EC to TANCEM was still under progress (March 2020).

In this regard, Audit observed that TANCEM did not comply with the Notifications of MoEF and continued the mining operations. Even the commitment of the Board of Directors (September 2014) to the MoEF, as required under the Notification of 2012 was flouted. Had TANCEM effectively followed the instructions of MoEF, the EC could have been obtained within 18 months *i.e.* much before the 2017 order of the Hon'ble Supreme Court and the payment of penalty could have been avoided.

Government in its reply (December 2019) stated that TANCEM was not in a position to stop mining as it was supplying cement for many Government projects and stoppage of supply would have affected various Government projects adversely and thus mining was un-avoidable. The reply highlights the fact that while being aware of the criticality of the mining activity, the necessity of obtaining clearance was not given similar importance and urgency. Failure to take effective and prompt action resulted in payment of penalty of ₹43.60 crore towards the cost of illegally mined limestone.

Tamil Nadu Minerals Limited

(b) TAMIN, since 1986 is engaged in the mining of limestone in 24.57 acres (equivalent of 9.94.5 hectares (Ha)) in Periyanagalur mines in Ariyalur District. TAMIN submitted (September 2007) proposals to MoEF seeking EC for the above mine. As per the order of Expert Appraisal Committee (EAC) (February 2008), TAMIN was required to prepare Environment Impact Assessment (EIA)/ Environment Management Plan (EMP) incorporating the Terms of Reference (TORs) and submit the draft report to the State Pollution Control Board (SPCB) for public consultation and hearing. The validity of the above TOR was extended to February 2012. TAMIN conducted the public hearing in November 2010 but submitted the final EIA report only in

[133] Hon'ble Supreme Court in WP 114/2014 held that wherever violations were carried out with regard to Environment (Protection) Act, 100 *per cent* cost/value of the illegally mined mineral needs to be compensated by the mining entity.

December 2012 to State Level Environment Impact Assessment Authority (SEIAA)[134] for granting of EC. SEIAA, however, closed the application of TAMIN as the TOR had expired in February 2012. However, TAMIN continued to operate the mines. In pursuance of 2017 Notification, TAMIN again submitted a fresh proposal for granting of EC. SEIAA issued TOR and directed (February 2019) for payment of compensation for the entire quantity of illegally mined mineral citing the Supreme Court judgement dated 02 August 2017. The penalty towards the cost of illegally mined limestone was ₹14.12 crore which was remitted (November 2019) by TAMIN.

Audit observed that the TOR issued by MoEF in February 2008 was not effectively followed up by TAMIN with appropriate action plan. It conducted public hearing only in November 2010 (*i.e.,* after a gap of 33 months) and took an additional two years to submit the EIA/EMP report in December 2012, *i.e.*, after 58 months of TOR. Thus, continuing mining operations without obtaining prior EC, resulted in avoidable payment of penalty of ₹14.12 crore. In a similar case of violation, TAMIN received a demand notice (August 2019) of ₹2.77 crore for illegally mining 63,750 MT[135] of limestone during the period March to April 2016. This penalty was yet to be paid.

The Government in its reply (April 2020) stated that the delay in obtaining the EC was mainly on account of procedural matters. For instance, the application for mining plan which was to be submitted to Indian Bureau of Mines (IBM), GOI was erroneously submitted (January 2010) to Department of Geology and Mining, GoTN. Further, the draft mining plan was not submitted to IBM in accordance with the United Nation Frame Work Classification guidelines (October 2009) which resulted in delay in submission of modified mining plan (January 2013).

The reply shows the ignorance of industry practices and lackadaisical attitude towards obtaining statutory clearances, which resulted in payment of avoidable penalty and consequent stoppage of mining operations from August 2016, causing recurring loss to the Company and consequential effect on projects dependent on such mining activities.

It is recommended that the Department may identify cases of violation by other mining companies and take appropriate measures for obtaining the EC to avoid paying penalty and face closure of mining activity.

[134] The State Level Authority of MoEF to consider the proposals for grant of EC.

[135] Over an extent of 2.80 ha in Periyanagalur vide G.O. 106 dated 22.07.1996

Tamil Nadu Arasu Cable TV Corporation Limited

5.2 Undue Favour

Payment of Customs Duty without obtaining the proof of actual payment of customs duty by Tamil Nadu Arasu Cable TV Corporation Limited and non-imposition of penalty for delayed supply resulted in undue favour of ₹37.43 crore

Tamil Nadu Arasu Cable TV Corporation Limited (Company) is engaged in the business of providing pay channels and free channels to its subscribers through Local Cable Operators (LCOs). The Company placed (August 2017) purchase orders (PO) for supply of Set-top Boxes (STB) on two vendors *viz.*, M/s Balaji Machine Works Private Limited (M/s BMWPL) and M/s Mantra Industries Limited (M/s MIL) at a negotiated price[136] of ₹1,588 and ₹2,100 per STB for 36 lakh SD[137] STBs and 40,000 HD[137] STBs respectively. The negotiated price included an element of customs duty (CD) of ₹116.31 for SD STBs and ₹155.88 for HD STBs *i.e.*, at the rate of 10 *per cent* of basic price. Consequent upon the revision of rate of customs duty (14 December 2017) from 10 *per cent* to 20 *per cent*, on request from vendors (December 2017), the Company approved the increase of CD element to ₹232.63 and ₹311.76 per STB for SD STB and HD STB respectively thereby increasing the rate of STBs to ₹1,725.26[138] and ₹2,283.93[139] for SD STB and HD STB respectively.

As per the POs, 10 *per cent* of the value of quantities supplied would be paid within seven days after supply and the balance 90 *per cent* would be paid in 36 equated monthly installments (EMI), commencing after 30 days from date of completion of supplies. The POs also provided that payments in respect of duties and taxes would be considered only after submission of proof of payment to the Government.

The vendors had supplied the entire quantity of 36 lakh SD STBs and 40,000 HD STBs by December 2018. In this regard, the following was seen:

a) Payment of customs duty without insisting on proof of payment of CD resulted in excess payment - ₹14.74 crore

The supply invoices raised by the vendors did not contain the break-up value of CD incurred on imports and no proof of payment of CD to Government was enclosed. However, the initial payment of 10 *per cent* of invoice value and the EMIs towards the 90 *per cent* invoice value were released[140] by the Company

136 Negotiated price: SD STB - Basic price; ₹1,163.15; Licence fee ₹66.31; CD: ₹116.31 and GST: ₹242.23 and HD STB- Basic price; ₹1,558.78; Licence fee ₹65.00, CD: ₹155.88 and GST: ₹320.34.

137 Standard Definition (SD) and High Definition (HD) denotes the quality of the picture.

138 SD STB-Basic price; ₹1,163.15; Licence fee ₹66.31, CD:₹232.63 and GST: ₹263.17.

139 HD STB-Basic price; ₹1,558.78; Licence fee ₹65.00, CD: ₹311.76 and GST: ₹348.39

140 Up to July 2019, out of 36 EMIs, four to 19 EMIs were released to the vendors.

without insisting on the proof of remittance of CD to the Government.

To verify the correctness of CD paid to the vendors, the details of source of imports were called for by Audit, from the Company, which was not made available to Audit. In the absence of appropriate records with the Company, Audit independently verified the actual CD paid by the vendors to the Government by accessing the dump data collected by the Director General of Audit (Central), Chennai during the course of audit of Customs duty and found that one of vendors, *viz.*, M/s MIL had imported the SD STBs from China through Chennai Port, on payment of CD at an average assessable value of ₹570.51 per STB as against the basic price of ₹1,163.15 per STB evaluated at the tender stage.

The contracted unit price (₹1163.15) of STB was much higher than its assessable value (₹570.51). Therefore, the CD claimed was inflated to that extent. This resulted in higher reimbursement of CD to the company than what was actually paid by the vendors to the Customs Department. Audit observed that the Company admitted the claims of the vendors based on the contracted purchase price without insisting on proof of payment of CD made to the Government. The differential CD admitted to M/s MIL worked out to ₹14.74 crore (SD STBs: ₹14.16 crore and HD STBs: ₹0.58 crore) which was irregular.

b) In the case of other supplier *viz.*, M/s BMWPL also, the CD was paid without insisting for the actual proof of payment. However, Audit could not access the source of import and the differential amount could not be arrived at.

Thus, the admission of liability towards payment of element of CD considering the contracted price instead of the actual payment made resulted in undue favour of ₹14.74 crore in one of the two cases.

c) Non-levy of penalty amounting to ₹22.69 crore for the belated supply of STB

As per the conditions stipulated in POs, for failure to comply within the stipulated timeline of supply, a penalty at the rate of 0.5 *per cent* per week on the unfulfilled portion of the contract, upto a maximum of 5 *per cent*, was to be collected from the vendors. Audit noticed that the vendors had supplied the STBs belatedly and the delays were up to 50 weeks. In respect of the belated supplies, the penalty leviable worked out to ₹22.69 crore (M/s BMWPL: ₹9.22 crore and M/s MIL: ₹13.47 crore). However, no penalty was imposed despite the delay in supply. This resulted in undue favour to the two vendors to that extent.

Thus, the failure of the Company to restrict payment of the CD to the vendors based on the CD actually paid by them to the Government by insisting the proof of payment and non-levy of penalty for belated supply of STBs has resulted in undue favour of ₹37.43 crore to the vendors.

The Government in its reply (March 2020) stated that TACTV had instructed both the vendors to submit the proof of actual customs duty paid, failing which the excess claim of customs duty shall be adjusted against their dues after giving sufficient opportunity. As regards belated supply penalty, TACTV had adjusted the penalty due amounting to ₹ 9.22 crore from M/s BMWPL against the EMIs due in November and December 2019 and in respect of M/s MIL, out of the penalty due of ₹ 13.47 crore, a sum of ₹ 12.34 crore was adjusted against the EMIs due in November and December 2019 and the remaining penalty amount of ₹1.13 crore was to be adjusted against the EMIs due in January and February 2020. The fact however remained that the payment made was in violation of the conditions of PO and corrective action was initiated only after being pointed out by Audit.

It is recommended that the company may examine other cases for similar excess claim of CD and in future levy penalty as per the conditions of POs wherever there are belated supplies.

TIDEL Park Limited

5.3 Undue benefit

Non-recovery of ₹ 5.63 crore being the proportionate share of cost of replacement of major plant and machinery from co-owners of TIDEL Park resulted in undue benefit to them

TIDEL Park Limited, Chennai (Company) is engaged in the business of providing infrastructure facilities to Information Technology (IT) Companies and IT enabled service (ITES) Companies. The Company created IT space of 10.65 lakh square feet (sq.ft) in Taramani, Chennai (TIDEL PARK) in the year 2000. The Company sold 2.36 lakh sq.ft of IT space (22.16 *per cent*) on outright sale basis to seven[141] buyers (co-owners) during 2000-2002 and the balance 8.29 lakh sq.ft (77.84 *per cent*) were leased out to various IT/ITES companies.

As per the provisions of the sale deed, for the betterment and maintenance of TIDEL PARK, for structural repairs and replacement of mechanical, electronic and electrical equipment/ installation and the administrative expenses incurred thereof, the Company collected a non-refundable interest-free sum equivalent to 1.5 *per cent* of the total sale consideration for the creation of a Sinking Fund corpus. In addition to contribution to the Sinking Fund, as per the provisions of sale deed, as and when required, the co-owners were required to contribute towards the cost of replacement / upgradation of Plant and Machinery including but not limited to lifts, DG sets, Electrical Sub-Stations, Pumps, Fire Fighting equipment *etc*., on pro-rata basis.

Audit noticed (February 2019) that, apart from betterment and maintenance expenditure, the Company incurred capital expenditure like replacement/ up-

[141] (i) J.Asirvatham, (ii) California Software Company Limited, (iii) Pentasoft technologies, (iv) SCM Microsystems Private Limited.(v) Venture Solutions Private Limited, (vi) Chintalapati Holdings Private Limited and (vii) Satyam Infoway Limited

gradations of plant and machinery to the tune of ₹25.37[142] crore during 2001-02 to 2017-18. The Company, in its records accounted for this amount as its capital expenditure and classified as assets to be recovered from co-owners. However, it did not raise any demand from the co-owners occupying 22.16 *per cent* of the total space, for their proportionate share of such capital expenditure amounting to ₹5.63[143] crore (*i.e.*, 22.16 *per cent* on ₹25.37 crore) as on 31 March 2018.

The Government in its reply, stated (November 2019) that the balance in Sinking Fund along with accrued interest (₹3.74 crore) worked out to ₹5.73 crore which was almost equivalent to ₹5.89 crore being the share of expenditure on repairs and replacements recoverable from the co-owners. It further stated that the Company was in the process of implementing the modality of collection of additional sinking fund corpus and negotiated with the co-owners to recover the amount on a monthly basis at the rate of ₹2 – 2.50 per square feet per month and communicated the same to all co-owners in August 2019. The Company also confirmed (December 2019) a deficit of ₹4.12 crore in the sinking fund as on 31 March 2018, to be recovered from the co-owners and stated that it was working out the modalities for collecting additional fund from co-owners.

The reply was not tenable for the reason that as per the provisions of sale deed, co-owners were required to contribute towards the cost of replacement / up-gradation of Plant and Machinery on pro-rata basis which was not invoked. Instead, it was proposed to use the balance in the sinking fund for the said expenditure, which would leave the Company with no fund to meet the future expenditure for betterment and maintenance of TIDEL PARK.

Thus, the failure to raise the demand as per existing provisions of sale deed resulted in accumulation of recoverable amount to ₹5.63 crore which was an undue benefit to the co-owners.

It is recommended the company may raise the demand for recovery of cost of replacements and upgradation of plant and machinery in future.

Tamil Nadu Industrial Investment Corporation Limited

5.4 Irrecoverable dues

Non-adherence to the disbursement procedures of loan resulted in siphoning of ₹1.07 crore by the loanee

Tamil Nadu Industrial Investment Corporation Limited (TIIC) is engaged in the business of extending financial assistance to industrial units within the State in the form of term loan, working capital loan *etc.* TIIC sanctioned[144] (March 2016) a term loan of ₹ 80 lakh under Equipment Finance Scheme and

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142 Includes expenditure towards replacement of Air conditioner chiller (₹11.98 crore), replacement of Diesel Generator sets (₹4.30 crore), other civil works on Sewerage Treatment Plant, Water tank, Installation of Smoke Detectors, Erection of Ventilation system, Erection of Poles, Street light, fixing of digital meters *etc.*

143 Audit calculation of capital expenditure (excluding minor additions).

144 Branch Sanction Committee, Tambaram Branch of TIIC.

Subsidy Bridge Loan[145] of ₹30 lakh to M/s Adinal Technologies (M/s Adinal) for purchase and erection of imported and indigenous machinery at an estimated cost of ₹1.15 crore and ₹6.88 lakh respectively. The loan was repayable in 54 installments, beginning from six months from the date of first disbursement.

The sanction of loan was subject to conditions, *inter alia*, that (i) the applicant shall furnish a letter of good track record from their Banker/Financial Institution for three completed financial years and (ii) Banker's satisfactory opinion on the applicant/the associate concerns before drawal of loan. Further, the applicant has to submit collateral security[146] before drawal of loan.

After one year of sanction of loan, M/s Adinal requested (01 March 2017) TIIC to release the loan amount. Accordingly, TIIC transferred (02 March 2017) ₹ 0.93 crore directly to the current account of M/s Adinal maintained with Punjab National Bank, Porur Branch (PNB). TIIC requested PNB to keep this amount in short term deposit in the name of M/s Adinal and open Letter of credit (LC) in favour of the foreign supplier for the import of machinery[147] and release the amount to the supplier's bank account at the time of retirement of LC.

However, during the periodical inspections carried out between May 2017 and January 2018, TIIC found that neither PNB opened LC nor the machineries were imported by M/s Adinal. The repayment of the installments had become overdue and cheques issued (March 2018) by M/s Adinal were dishonoured (April 2018) and hence, TIIC issued (April 2018) notice for foreclosing the loan account. The dues stood at ₹ 1.07[148] crore as on 31 March 2020.

Audit observed the following lapses in disbursement of loan:

- As per the Disbursement Manual (Paragraphs 12.1 and 12.2) of TIIC in case of sanction of loan for import of machineries, commitment letter should be issued by TIIC to the constituent banker who was willing to open LC. Further, a consent letter from the constituent banker to open LC in favour of foreign machinery supplier has to be obtained. The disbursement of loan should be made to the banker only at the time of retirement of LC, after receipt of documents *viz.*, copy of the LC, invoice raised by the supplier, bill of lading *etc.*, from the Bank. But, instead of issuing the commitment letter to the bank to open LC, TIIC directly transferred the funds to M/s Adinal's Bank account maintained in PNB.

145 The unit is eligible for State Capital Subsidy of ₹30 lakh being 25 per cent of cost of machinery of ₹121.78 lakh.

146 The residential property valuing ₹34.78 lakh situated at Nerkundram village in the name of the partners.

147 CNC Servo Electric Turret Punch – 1 set from Jiangsu Yawi Machine Tools Co. Ltd China.

148 Principal: ₹86.73 lakh plus interest and other charges upto March 2020: ₹19.78 lakh. This amount is after adjusting ₹5.50 lakh realised on sale of indigenous machinery in November 2019.

- Audit verification of Bank statement of the current account maintained by M/s Adinal at PNB, Porur branch revealed that at the time of disbursement (02 March 2017), the current account of M/s Adinal had a minus balance of ₹0.88 crore. As per the sanction order of the loan, M/s Adinal had to produce banker's opinion on its performance, as it was already having facilities like term loan *etc*., amounting to ₹1.54 crore from the PNB. However, TIIC did not obtain the latest updated confidential reports from PNB about M/s Adinal's performance at the time of disbursement (02 March 2017) and relied upon the one-year-old Banker's status report (March 2016) which had stated "Satisfactory" status. If the updated status at the time of disbursement was called for from the bank, the fact of (i) minus balance of ₹ 0.88 crore indicating the overdue amount to the bank (ii) non- opening of LC would have been evident and the disbursement could have been avoided.
- Direct transfer of ₹ 0.93 crore by TIIC in the current account of M/s Adinal squared off the bank dues from M/s Adinal and funds were not utilised for the stated purpose of import of machinery leading to siphoning off money.

Government in its reply (February 2020) stated that TIIC had transferred the funds to the bank with the request to keep the amount in short-term deposit in the name of the borrower and release the amount to the supplier's bank account at the time of release of LC. It further stated that it was in the process of realizing the dues by disposing the collateral security and steps were being taken to file First Information Report against the partners and the then Manager of PNB, Porur. It also stated that responsibility has been fixed on five officials who were alleged to have committed irregularities. The fact, however, remained that the funds which were required to be released only at the time of retirement of LC were prematurely transferred to M/s Adinal's bank account without even ensuring the opening of LC, which was a blatant violation of the procedures prescribed in the Disbursement Manual as well as in the sanction letter. This resulted in siphoning off ₹ 1.07 crore. Delayed action for recovering the money would lead to the amount being rendered irrecoverable.

It is recommended that the company may review all other cases of disbursement to ensure that the amount of loan disbursed is not misused/ siphoned off by the Loanees.

Tamil Nadu Civil Supplies Corporation

5.5 Avoidable payment of VAT and penalty

Failure to claim Input Tax Credit resulted in avoidable payment of Value Added Tax amounting to ₹ 13.67 crore on sale of sugar through Public Distribution System

As per Section 3(2) of the Tamil Nadu Value Added Tax (TNVAT) Act, 2006 in the case of goods specified in Part - B or Part - C of the First Schedule, the tax under this Act shall be payable by a dealer on every sale made by him within the State at the rate specified therein.

Section 3(3) of the TNVAT Act read with Rule 10 of The Tamil Nadu Value Added Tax (TNVAT) Rules 2007, provides that the tax payable by a registered dealer as mentioned above shall be reduced, to the extent of tax paid on purchase of goods. Section 19(1) of TNVAT Act, 2006 provides for claim of Input Tax Credit (ITC) on the amount of tax paid by the registered dealer, to the seller, on purchase of taxable goods specified in the First Schedule. Section 19(11) of the TNVAT Act, 2006 read with Rule 7(1) of the TNVAT Rules 2007, provides that in case any registered dealer fails to claim ITC in respect of any taxable purchase made in any month, he shall make the claim before the end of the financial year or before ninety days from the date of purchase, whichever is later, by filing a revised return.

For the purpose of Value Added Tax (VAT), Tamil Nadu Civil Supplies Corporation (Company) falls under the jurisdiction Ayanavaram Assessment (AA) Circle and is the implementing agency of Public Distribution System (PDS) for Tamil Nadu and effects sale of various products to the card holders, at prices fixed by Government. One of the products sold by the company namely 'sugar' was exempted from levy of VAT. However, as per item No.132 A of Part B of First Schedule (effective from 01 November 2014) tax had to be levied at the rate of five *per cent* on every sale made by the dealer within the State.

Audit check of VAT Monthly Returns for the period from November 2014 to March 2015, Form WW[149] filed by the Company (December 2015) for the year 2014-15 and further correspondences in this regard indicated the following:

(i) The Company had purchased sugar amounting to ₹ 226.60 crore on payment of tax from November 2014 to March 2015. However, the Company had neither claimed ITC of ₹34.21 crore on purchases of sugar nor paid tax of ₹11.33 crore (five *per cent* on sale value of ₹ 226.60 crore) on sale of sugar for the above period.

(ii) The revised return was not filed to rectify the above mistake and to claim the ITC. The Tax Auditor had mentioned the non-payment of tax in the Form WW and advised the Company to pay the tax and penalty.

(iii) After perusal of Form WW, AA Authority had issued notice (March 2016 and September 2016) to the Company for payment of tax on sale of sugar with interest.

(iv) Consequently, the Company paid (March 2016 and November 2016) tax of ₹ 11.33 crore along with penalty amounting to ₹ 2.34 crore as demanded by the AA.

Thus, failure to claim the ITC by including the details of purchases of sugar in the monthly/ revised return filed under VAT, the Company had to forego the

[149] Since the total turnover for the year 2014-15 exceeded one crore rupees, the Company had engaged a Chartered Accountant to audit the accounts for that year and submitted a report in the Form WW to the AA as envisaged in Section 63(A)(1) of the TNVAT Act, 2006 read with Rule 16-A of the TNVAT Rules, 2007.

ITC amounting to ₹34.21 crore. If the ITC of ₹34.21 crore had been claimed, the output tax liability of ₹11.33 crore would have been adjusted from the above ITC and there would not had been any consequential tax liability. From the above, it is evident that failure to claim ITC had resulted in avoidable payment of VAT of ₹ 11.33 crore and consequent interest of ₹ 2.34 crore.

The Company replied (November 2019) that as its request for exemption from payment of VAT on sale of sugar was under the consideration of the Government and hence the delay occurred. The Government replied (February 2020) that with effect from April 2015, the Company was claiming ITC on purchase of Sugar by filing monthly return. However, since the purchase price of sugar was more than the subsidised sale price of sugar through PDS, net-tax liability on the sale of sugar did not arise. In view of the above position, there was no need for granting exemption from VAT liability, for sale of sugar through PDS. In respect of the period from November 2014 to March 2015, the Company had already paid the tax due and there was no need to consider grant of exemption retrospectively for a limited period.

It is true that there would be no net-tax liability for the reason that the sale price of sugar under PDS was lesser than the purchase price. While the reply of the Government was with respect to the request of the Company for grant of exemption of VAT for sale of sugar under PDS, it was silent on the failure of the Company to claim ITC for the period from November 2014 to March 2015. If only the Company had claimed ITC credit in terms of Section 19(1) of TNVAT Act, in its monthly returns during November 2014 to March 2015, the liability towards output tax for such period would have been reduced to that extent.

Thus, failure of the Company to claim the ITC in the manner prescribed under TNVAT Act, resulted in avoidable payment of VAT amounting to ₹ 11.33 crore and consequent interest of ₹2.34 crore thereon.

It is recommended that in future, the company needs to claim the ITC in the manner as prescribed under TNVAT Act in a time bound manner.

Tamil Nadu Police Housing Corporation Limited

Avoidable payment of interest

Absence of proper estimation of advance income tax payable led to short remittance of advance income tax resulting in avoidable payment of interest of ₹ 1.90 crore

5.6 Tamil Nadu Police Housing Corporation Limited (Company) is an agency of GoTN for execution of civil works for the Fire, Prison and Police departments. The Company is engaged in the construction of Police Stations and Police Quarters and houses/flats for allotment to police personnel under Own Your House Scheme (OYH). The Company also receives supervision charges for all the works executed for GoTN.

As per Section 208 of the Income Tax Act, 1961 (Act), advance tax shall be paid by the tax payer during the financial year, if estimated tax liability of assessee during that year is ₹10,000 or more. The advance tax is to be calculated in accordance with Section 209 of the Act and is payable in four quarterly installments between June and March of every financial year. If the assessee fails to pay 90 *per cent* of the assessed tax before the end of the financial year, the assesse is liable to pay interest at the rate of one *per cent* for every month or part of the month under Section 234 B and is also liable to pay similar interest for shortfalls in the quarterly payments of advance tax under Section 234 C of the Act.

Audit had observed that the Company did not comply with the provisions of Section 234 B and 234 C of the Act and consequently made avoidable payment of interest of ₹ 66 lakh on income tax during the years upto 2009-10. This fact was mentioned in the Report of the Comptroller and Auditor General of India (Public Sector Undertakings) for the year 2012 – Government of Tamil Nadu vide paragraph 3.7. As a follow-up, Audit examined the compliance relating to payment of advance tax and found that in spite of pointing out in Audit Report for the year 2012, the Company did not put in place a suitable system to estimate the income to pay the advance tax appropriately. Audit noticed that during 2010-11 to 2016-17, against the requirement of 90 *per cent*, it had paid the advance tax in the range of 4.08 to 60.15 *per cent* of the tax payable during these years. Consequently, it had paid penal interest of ₹ 1.90 crore.

A detailed audit analysis revealed that the Company, while estimating income for the year for the purpose of arriving at the amount of advance tax payable for every quarter, only the supervision charges earned from civil works carried out for Police Department were recognised but the income from OYH scheme was not included. Audit observed that the repeated failure to estimate the income from known source and payment of lesser quarterly advance tax even after such omission being pointed out by Audit in the earlier Report had resulted in avoidable payment of penalty in the form of interest to the extent of ₹1.90 crore.

The Company in its reply (December 2019) stated that the price of the houses under OYH Scheme was finalised in February 2016. The income for the year 2015-16 and 2016-17 was earned in the month of March 2016 and 2017 respectively which was unpredictable. The reply was not tenable as the Company was aware of the sale of houses under OYH Scheme and the consequent income tax liability on such sale during the course of the financial year and hence it should have properly carried out its tax planning and estimated the tax liability. Though, it had recognised the income in the month of March in both the financial years, but it failed to pay the tax before the close of the financial year itself. It paid tax along with the penal interest only in the month of October of the following year *i.e.* at the time of filing Income tax returns on self-assessment basis which necessitated payment of hefty amount of penal interest.

Thus, it is evident that the payment of penal interest was only on account of failure to estimate the income properly, which could have been avoided by suitable tax planning.

It is recommended that the Company needs to evolve a robust system to estimate the income reasonably to avoid recurrence of payment of interest.

The matter was reported to the Government (November 2019) and their reply was awaited (July 2020).

Chennai
The 17 February 2021

(VISHWANATH SINGH JADON)
Accountant General (Audit-II)
Tamil Nadu and Puducherry

Countersigned

New Delhi
The 19 February 2021

(GIRISH CHANDRA MURMU)
Comptroller and Auditor General of India

ANNEXURES

ANNEXURE-1

(Referred to in paragraphs 1.9 and 1.10)

Summarised financial position and working results of Power Sector Government companies as per their latest finalised financial statements/accounts

(Figures in Column (5) to (11) are ₹ in crore)

Sl. No.	Sector/Name of the Company	Period of accounts	Year in which accounts finalised	Net profit/loss before interest & tax	Net profit/loss after interest & tax	Turn over	Paid-up capital	Capital employed	Net worth	Accumulated profit/loss
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	POWER									
A	**Generation & Distribution**									
1.	Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO)	2018-19	2019-20	(-)4,375.22	(-)12,623.41	54,945.03	19,778.89	37,940.30	(-)68,160.02	(-)87,895.35
2.	Udangudi Power Corporation Limited (Udangudi Power)	2018-19	2019-20	---	---	---	65.00	65.56	65.56	0.56
	TOTAL (A)			**(-)4,375.22**	**(-)12,623.41**	**54,945.03**	**19,843.89**	**38,005.86**	**(-)68,094.46**	**(-)87,894.79**
B	**Transmission**									
3.	Tamil Nadu Transmission Corporation Limited (TANTRANSCO)	2018-19	2019-20	626.65	(-)634.91	3,085.44	4,824.37	17,359.30	416.49	(-)4,407.88
	TOTAL (B)			**626.65**	**(-) 634.91**	**3,085.44**	**4,824.37**	**17,359.30**	**416.49**	**(-)4,407.88**
C	**Others**									
4.	Tamil Nadu Power Finance and Infrastructure Development Corporation Limited (TN Powerfin)	2018-19	2019-20	2,816.97	83.20	3,022.87	1,290.00	3,588.09	1,570.99	280.99
5.	TNEB Limited	2017-18	2018-19	(-)1.08	(-)1.08	---	24,417.77	24,411.48	24,411.48	(-)6.29
	TOTAL (C)			**2,815.89**	**82.12**	**3,022.87**	**25,707.77**	**27,999.57**	**25,982.47**	**274.70**
	GRAND TOTAL (A+B+C)			**(-)932.68**	**(-)13,176.20**	**61,053.34**	**50,376.03**	**83,364.73**	**(-)41,695.50**	**(-)92,027.97**

NOTE:

1. Loans outstanding at the close of 2018-19 represent long-term loans only.
2. Capital Employed represents Share Holders Funds PLUS Long Term Borrowings.

Annexure – 2

(Referred to in Paragraph 2.7.1)

Details showing the requirement of coal and the procurement

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	Installed capacity (MW)	4,660	4,660	4,320	4,320	4,320
2	Targeted Generation(MU)	31,333	32,158	32,144	31,064	29,892
3	Projected Requirement of Indigenous Coal (MMT)	17.46	16.40	15.52	21.04	16.43
4	Projected Requirement of imported coal (MMT)	7.10	8.60	6.41	0.46	4.02
5	Total coal requirement (MMT)	24.56	25.00	21.93	21.50	20.45
6	ACQ as per FSA (MMT)	20.45	20.45	22.95	22.95	22.95
7	Surrendered[150] quantity of ACQ due to opting out from import of coal option as a part of FSA obligation	1.04	0.69	0.35	0.35	0.35
8	ACQ after surrender of option to imported coal (MMT) (6–7)	19.41	19.76	22.60	22.60	22.60
9	Excess (+) / Shortfall (–) in Total Annual Coal Requirement *vis-a-vis* ACQ obligation under FSA after surrender (MMT) (8–5)	(–) 5.15	(–) 5.24	0.67	1.10	2.15
10	Actual receipt of indigenous coal (MMT)	13.78	14.87	13.34	14.44	15.39
11	Actual receipt of imported Coal (MMT)	7.67	5.72	3.99	1.83	3.55
12	Excess (+) / Shortfall (–) in actual receipt of coal (MMT) against ACQ obligation under FSA (10–8)	(–) 5.63	(–)4.89	(–) 9.26	(–) 8.16	(–) 7.21
13	Excess (+) / Shortfall (–) in actual receipt of coal (MMT) against total coal requirement (MMT) (10–5)	(–)10.78	(–)10.13	(–)8.59	(–)7.06	(–)5.06
14	Percentage of excess (+) / shortfall (–) between actual quantity received and ACQ obligation under FSA (12/8)	(–) 29	(–) 25	(–) 41	(–) 36	(–) 32

Source: Fuel Supply Agreements, Coal Data Book, Budget documents of TANGEDCO

150 As per FSA entered into with MCL in 2012 and 2013, TANGEDCO exercised an option to surrender the offer of MCL for supply of imported coal through MCL.

Annexure – 3

(Referred to in Paragraph 2.7.2)

Deviation from monthly quantity in excess of 10 *per cent*

(Range in percentage)

FSA Coal Company wise (year)	2014-15		2015-16		2016-17		2017-18		2018-19	
	No. of Instances (Months)	Deviation Range	No. of Instances (Months)	Deviation Range	No. of Instances (Months)	Deviation Range	No. of Instances (Months)	Deviation Range	No. of Instances (Months)	Deviation Range
MCL 2009	11	10 to 36	10	13 to 29	12	15 to 63	12	14 to 42	12	11 to 54
ECL 2009	12	(-)44 to 45	9	(-)59 to 38	3	(-)15 to 22	4	14 to 39	1	60
MCL 2012	10	13 to 55	11	25 to 68	12	44 to 100	12	(-)26 to 79	8	(-)55 to (-)28
MCL 2013	12	20 to 75	12	17 to 51	12	20 to 60	12	31 to 60	12	23 to 64

Source: Fuel Supply Agreements and Coal Data Book of TANGEDCO

Annexure – 4
(Referred to in Paragraph 2.9.2)
Drop in GCV between receipt point at power station and at bunker

(figures indicate number of months wherein drop in GCV found)

GCV drop range (kcal/kg)	MTPS–I		MTPS–II		NCTPS–I		NCTPS–II		TTPS	
	IND	IMP	IND	IMP	IND	IMP	IND	IMP	IND	IMP
Upto 120	22	17	27	11	38	9	22	8	27	10
121 – 240	25	11	12	7	9	29	11	1	12	2
241 – 360	9	7	14	6	3	10	12	4	10	2
361 – 480	4	4	5	17	5	0	2	2	7	8
481 – 600	0	8	2	10	5	1	0	6	1	13
601 – 720	0	3	0	0	0	3	1	7	3	2
721 – 840	0	0	0	1	0	1	0	10	0	8
841 – 960	0	4	0	3	0	2	0	3	0	7
Above 960	0	6	0	5	0	5	0	7	0	8
Number of months GCV loss more than 120	38	43	33	49	22	51	26	40	33	50
Percentage of months with GCV Loss more than 120	63	75	59	89	37	96	54	98	55	89

IND: Indigenous Coal, IMP: Imported Coal

Source: Audit workings based on chemical laboratory registers and coal feeding registers of TPSs

ANNEXURE-5

(Referred to in Paragraph 3.1)

Statement showing the non-recovery of start-up charges at enhanced rate

(Amount: ₹ in lakh)

Sl. No	Name of the consumer	HT SC number	Year	Month in which it exceeded 42nd occurrence	Start-up charges collected[151]	Amount to be collected[152]	Differential amount (7) – (6)
1	2	3	4	5	6	7	8
	Tuticorin Electricity Distribution Circle (TEDC)						
1	M/s Ind-Barath Energies Limited	224	2016-17	June 2016	119.05	178.57	59.52
			2017-18	May 2017	97.60	146.39	48.79
			2018-19[153]	May 2018	56.24	84.36	28.12
	Sub-total						**136.43**
2	M/s Ind-Barath Gencom Limited	257	2016-17	Data not available			
			2017-18	June 2017	533.02	799.53	266.51
			2018-19	May 2018	308.19	462.29	154.10
	Sub-total						**420.61**
3	M/s Ind-Barath Thermal Power Limited	292	2016-17	May 2016	900.18	1350.28	450.10
			2017-18	May 2017	798.32	1197.48	399.16
			2018-19	May 2018	536.78	805.17	268.39
	Sub-total						**1117.65**
4	M/s Vedanta Limited	284	2016-17	May 2016	267.17	400.75	133.58
			2017-18	September 2017	505.48	758.22	252.74
			2018-19	Plant under shut-down			
	Sub-total						**386.32**
5	M/s Rajkumar Impex (P) Limited	282	2016-17	May 2016	165.48	248.22	82.74
			2017-18	July 2017	199.44	299.16	99.72
			2018-19	June 2018	59.90	88.36	28.46
	Sub-total						**210.92**
						Total- TEDC	**2271.93**
	Pudukottai Electricity Distribution Circle (PEDC)						
6	M/s Sabari Industries Private Limited	111	2017-18	September 2017[154]	27.33	41.00	13.67
			2018-19	March 2019	4.40	6.60	2.20
			2019-20	May 2019	35.16	52.73	17.57
	Sub-total						**33.44**
7	M/s EID Parry (I) Limited	116	2016-17	September 2016[155]	84.03	126.05	42.02
			2017-18	October 2017	44.19	66.29	22.10
			2018-19	January 2019	21.13	31.70	10.57
			2019-20	January 2020	10.16	15.24	5.08
	Sub-total						**79.77**
						Total- PEDC	**113.21**
						Grand Total	**2385.14**

(Say: ₹23.85 crore)

151 From the following month in which 42nd occurrence happened and up to March of the respective financial year.
152 One-and-half time of the amount indicated in Column 6.
153 Differential amount for the year 2018-19 in all the cases were worked up to December 2018 only.
154 CMRI data for the period from April 2017 to July 2017 were not made available to Audit.
155 CMRI data for the period from April 2016 to May 2016 were not made available to Audit.

ANNEXUXRE-6

(Referred to in Paragraph 3.2)

Statement showing the non-levy of POC from captive generators

Sl. No.	Period	Status	Net capacity in MW	No. of months	POC leviable (₹ in lakh)	Remarks
1	**2**	**3**	**4**	**5**	**6=4x5x ₹30,000**	**7**
1	**M/s Vedanta Ltd, TEDC**					
	07/05/2014 to 14/12/2015	Normal	160	19.25	924.00	The generators had closed down the operations from 23.05.2018.
	15/12/2015 to 31/05/2016	Open access	55	5.5	90.75	
	01/06/2016 to 23/05/2018	Normal	160	24	1152.00	
	Sub-Total -1				**2166.75**	
2	**M/s Southern Energy Development Corporation, Thiruvarur**					
	May 2014 to March 2020	Open access	2	71	42.60	
	Sub-Total – 2				**42.60**	
3	**M/s EID Parry (India) Limited, Pudukottai**					
	May 2014 to December 2019		4	68	81.60	At the request of the Generator, the generation license was cancelled in January 2020.
	Sub-Total – 3				**81.60**	
	Grand total				**2290.95**	
				Say	**22.91 crore**	

ANNEXURE-7
(Referred to in Paragraph 3.3)

Statement showing the loss of revenue due to irregular power supply under Low Tension category in the same premises

Sl. No.	Under LT supply: Name of the consumer, Address & Mobile No.	Service Connections Number (Existing /Additional)	Tariff	Date of Connection	Contracted load under LT supply (in KW)	Total Contracted Load (under LT supply) (in KW)	Under HT supply: Equivalent Load under HT supply (in KVA)(KW/0.90)	Billing Load for Demand Charges (90% of KVA)	No. of months from the date of deemed HT supply and upto March 2020	Demand charges to be collected at the rate of ₹ 350 per month per KVA (₹ in lakh)	Fixed charges collected at the rate of ₹ 35 per KW under LT supply (₹ in lakh)	Differential Revenue Loss up to March 2020 (₹ in lakh)	Potential Revenue loss per annum (₹ in lakh)
1	2	3	4	5	6	7	8 (7/0.90)	9	10	11 (9*10*₹350)	12 (7*10*₹35)	13 (11-12)	14 (9* (₹350-35)*12 months)
VELLORE ELECTRICITY DISTRIBUTION CIRCLE													
1	M. Arul, 20B/1 TS No.25/1, Arani Rd Vandimedu Arcot, Mob-9448077574	252-006-899	LM51	15/10/14	94	204	226.67	204	61	43.55	4.36	39.19	7.71
		252-006-912	LM51	05/02/15	110								
2	P. Jothibashu, Melkuppam Rd Narayanapuram village, Mob-9751951495	256--008-168	LN3B	01/01/90	112	224	248.89	224	24	18.82	1.88	16.94	8.47
		256-008-361	LN3B	07/03/18	112								
3	M/s Div Manager, 65 Haffieldsdet Qtr. Puliyamangalam,	283-010-1696	LA1C	26/03/18	85	170	188.89	170	24	14.28	1.43	12.85	6.43
		283-010-1697	LA1C	26/03/18	85								
4	V Madhavan, S.F.No.719/1c Minnal village, Mob-9751199569	290-014-1033	LN3B	13/08/15	65	177	196.67	177	49	30.36	3.04	27.32	6.69
		290-014-1083	LN3B	20/02/16	112								
5	Alfa Eng. Works, Karikkal, Mob-9176917034	272-011-481	LM3B	26/09/06	108	220	244.44	220	63	48.51	4.85	43.66	8.32
		272-011-1418	LN3B	05/12/14	112								
6	MS Sakthi Eng., Plot No.S-43 MR Puram, Mob-9443246128	237-006-1071	LN3B	22/12/14	111	223	247.78	223	63	49.17	4.92	44.25	8.43
		237-006-1072	LN3B	22/12/14	60								

1	2	3	4	5	6	7	8 (7/0.90)	9	10	11 (9*10*₹350)	12 (7*10*₹35)	13 (11-12)	14 (9* (₹350-35)*12 months)
7	Mani NK, SF No.350/3b, Samathuvapuram, Mob-9894546737 / 9443096944	238-006-128	LM3B	27/08/11	112	206	228.89	206	52	37.49	3.75	33.74	7.79
		238-006-145	LM3B	02/11/15	94								
8	South India Tanners & Dealers Association, SF No.139/1b, Am, Mob-7305939235	243-032-454	LM51	20/02/14	112	224	248.89	224	54	42.34	4.23	38.11	8.47
		243-032-496	LM51	23/09/15	112								
9	Faizan Tanning Industries, No.119 MBT Rd, Mob-9025832511	247-002-1253	LM3B	05/07/13	112	299	332.22	299	47	49.19	4.92	44.27	11.30
		247-002-1359	LM3B	07/04/16	112								
		247-002-1265	LM3B	27/10/13	75								
CHENNAI WEST ELECTRICITY DISTRIBUTION CIRCLE													
10	VB Ganesh Babu, Plot No.31a/20, Ambattur, Mob-9840916426	037-001-740	LN3B	13/03/17	108	318	353.33	318	35	38.96	3.90	35.06	12.02
		037-001-741	LN3B	04/04/17	98								
11	The Southern Associates, 10/6, Ambt Ind Estate, Mob-9282159178	429-002-558	LM3B	05/08/17	112	187	207.78	187	31	20.29	2.03	18.26	7.07
		429-002-559	LM3B	05/08/17	75								
12	KN Ravishaner, S/F No.62/2b, PKM st, Vanagaram Rd, Mob-9176667075	440-234-440	LM3B	20/06/15	112	166	184.44	166	57	33.12	3.31	29.81	6.27
		440-234-441	LM3B	20/06/15	54								
13	P Srinivasan, 61a, Kalyaniestate, Athipet, Mob-9940058143	440-235-979	LM3B	23/04/16	86	172	191.11	172	47	28.29	2.83	25.46	6.50
		440-235-980	LM3B	23/04/16	86								
VIRUDHUNAGAR ELECTRICITY DISTRIBUTION CIRCLE													
14	MTC Polymers & Packing, 3/251-45 TTL Rd, Sengamalanchiyapuram, Mob-9443135327 /9677721345	244-012-1056	LN3B	22/04/13	112	223	247.78	223	44	34.34	3.43	30.91	8.43
		244-012-1245	LN3B	14/07/16	111								
COIMBATORE SOUTH ELECTRICITY DISTRIBUTION CIRCLE													
15	A. Vetrivel, SF No.305/1,MM Patty, Mob-9344833128 /9940715781	256-003-2573	LN3B	23/11/16	90	150	166.67	150	40	21.00	2.10	18.90	5.67
		256-003-2574	LN3B	23/11/16	60								

1	2	3	4	5	6	7	8 (7/0.90)	9	10	11 (9*10*₹350)	12 (7*10*₹35)	13 (11-12)	14 (9* (₹350-35)*12 months)
16	TN Lakshminarayanan, Dno.4/198, Seerapalayam, Mob-9384163302	256-004-1814	LN3B	12/08/16	75	150	166.67	150	43	22.58	2.26	20.32	5.67
		256-004-1815	LN3B	12/08/16	75								
17	M/s United Product castings, Sf No.534, Pothiyampalayam, Mob-9626653792	288-003-607	LN3B	25/10/16	111	183	203.33	183	41	26.26	2.63	23.63	6.92
		288-003-608	LN3B	25/10/16	72								
18	J Aravinthakumaran, D No.4/208a, Pothiyampalayam, Mob-8754031324	288-003-702	LN3B	05/05/18	108	176	195.56	176	22	13.55	1.36	12.19	6.65
		288-003-703	LN3B	05/05/18	68								
	TOTAL							**3672**				**514.87**	**138.81**
												₹5.15 crore	**₹1.39 crore**

ANNEXURE-8

(Referred to in paragraph 4.3)

Summarised statement showing position of equity and outstanding loans relating to State PSUs (other than Power Sector) as on 31 March 2019

(Figures in Column 5(a) to 6 (d) are ₹ in crore)

Sl. No.	Sector/Name of the Company	Name of the Department	Month & year of incorporation	Equity at the close of the year 2018-19				Long-term loans outstanding at the end of the year 2018-19			
				GoTN	GoI	Others	Total	GoTN	GoI	Others	Total
(1)	(2)	(3)	(4)	5(a)	5(b)	5(c)	5(d)	6(a)	6(b)	6(c)	6(d)
	SOCIAL SECTOR										
	Working PSUs										
1.	Tamil Nadu Fisheries Development Corporation Limited (TN Fisheries)	Fisheries	April 1974	4.46	---	---	4.46	---	---	---	---
2.	Tamil Nadu Handloom Development Corporation Limited (TN Handloom)	Handloom, Handicrafts, Textiles and Khadi	September 1964	2.67	---	1.62	4.29	5.37	---	---	5.37
3.	Tamil Nadu Adi-dravidar Housing and Development Corporation Limited (TAHDCO)	Adi-dravidar and Tribal Welfare	February 1974	96.60	46.94	---	143.54	---	---	11.11	11.11
4.	Tamil Nadu Backward Classes Economic Development Corporation Limited (TABCEDCO)	Backward Classes and Most backward classes Welfare	November 1981	12.27	---	---	12.27	---	---	156.62	156.62
5.	Tamil Nadu Corporation for Development of Women Limited (TN Women)	Social Welfare and Noon-meal programme	December 1983	0.40	0.38	---	0.78	---	---	---	---
6.	Tamil Nadu Minorities Economic Development Corporation Limited (TAMCO)	Backward Classes and Most backward classes Welfare	August 1999	2.05	---	---	2.05	---	---	58.17	58.17
7.	Tamil Nadu Rural Housing and Infrastructure Development Corporation Limited (TN Rural Housing)	Rural Development and Panchayat Raj	January 1999	3.00	---	---	3.00	---	---	463.10	463.10

Sl. No.	Sector/Name of the Company	Name of the Department	Month & year of incorporation	Equity at the close of the year 2018-19				Long-term loans outstanding at the end of the year 2018-19			
				GoTN	GoI	Others	Total	GoTN	GoI	Others	Total
(1)	(2)	(3)	(4)	5(a)	5(b)	5(c)	5(d)	6(a)	6(b)	6(c)	6(d)
8.	Adyar Poonga	Municipal Administration & Water supply	October 2008	0.10	---	---	0.10	---	---	---	---
9.	Tamil Nadu Civil Supplies Corporation (TNCSC)	Co-operation, Food& Consumer Protection	April 1972	71.74	---	---	71.74	1.20	---	---	1.20
10.	Overseas Manpower Corporation Limited (OMPC)	Labour& Employment	November 1978	0.15	---	---	0.15	---	---	---	---
11.	Tamil Nadu Skill Development Corporation Limited (TNSDC)	Labour& Employment	July 2013	0.05	---	---	0.05	---	---	---	---
12.	Tamil Nadu Medical Services Corporation Limited (TN Medical)	Health & Family Welfare	July 1994	4.04	---	---	4.04	---	---	83.91	83.91
13.	Tamil Nadu Ex-servicemen's Corporation Limited (TEXCO)	Public (Ex-servicemen)	January 1986	0.23	---	---	0.23	---	---	---	---
	Sector-wise total			**197.76**	**47.32**	**1.62**	**246.70**	**6.57**	**---**	**772.91**	**779.48**
	NON-FUNCTIONAL										
14.	Tamil Nadu State Construction Corporation Limited (TN State Construction)	Public Works	February 1980	5.00	---	---	5.00	27.36	---	---	27.36
	Sector-wise total			**5.00**	**---**	**---**	**5.00**	**27.36**			**27.36**
	SS TOTAL			**202.76**	**47.32**	**1.62**	**251.70**	**33.93**	**---**	**772.91**	**806.84**
	COMPETITIVE SECTOR										
15.	Tamil Nadu Forest Plantation Corporation Limited (TAFCORN)	Environment and Forest	June 1974	5.64	---	---	5.64	---	---	---	---
16.	Tamil Nadu Tea Plantation Corporation Limited (TANTEA)	Environment and Forest	August 1975	14.96	---	---	14.96	69.95	---	30.59	100.54
17.	Arasu Rubber Corporation Limited (ARC)	Environment and Forest	August 1984	13.07	---	---	13.07	0.80	---	---	0.80
18.	Tamil Nadu Industrial Investment Corporation Limited (TIIC)	Micro, Small & Medium Enterprises	March 1949	303.52	---	72.48	376.00	---	---	402.46	402.46

Sl. No.	Sector/Name of the Company	Name of the Department	Month & year of incorporation	Equity at the close of the year 2018-19				Long-term loans outstanding at the end of the year 2018-19			
				GoTN	GoI	Others	Total	GoTN	GoI	Others	Total
(1)	(2)	(3)	(4)	5(a)	5(b)	5(c)	5(d)	6(a)	6(b)	6(c)	6(d)
19.	Tamil Nadu Small Industries Development Corporation Limited (TNSIDCO)	Micro, Small and Medium Enterprises	March 1970	25.14	---	---	25.14	---	---	---	---
20.	Tamil Nadu Transport Development Finance Corporation Limited (TDFC)	Transport	March 1975	755.57	---	18.71	774.28	---	---	2,583.38	2,583.38
21.	Tamil Nadu Urban Finance and Infrastructure Development Corporation Limited (TUFIDCO)	Municipal Administration and Water Supply	March 1990	31.02	---	0.98	32.00	---	---	178.16	178.16
22.	Tamil Nadu Infrastructure Fund Management Corporation Limited (TN Infra Management)	Social Welfare	July 2015	32.30	---	---	32.30	---	---	---	---
23.	Tamil Nadu Industrial Development Corporation Limited (TIDCO)	Industries	May 1965	72.03	---	---	72.03	8.32	---	---	8.32
24.	State Industries Promotion Corporation of Tamil Nadu Limited (SIPCOT)	Industries	March 1971	123.91	---	---	123.91	---	---	---	---
25.	TIDEL Park Limited (TIDEL, Chennai) (Subsidiary of TIDCO)	Information Technology	December 1997	44.00	---	---	44.00	---	---	---	---
26.	Nilakottai Food Park Limited (Nilakottai)(Subsidiary of SIPCOT)	Industries	April 2004	---	---	0.68	0.68	---	---	0.15	0.15
27.	Guindy Industrial Estate Infrastructure Upgradation Company (Guindy Industrial Estate) (Subsidiary of SIDCO and TIIC)	Micro, Small and Medium Enterprises	June 2004	0.01	---	---	0.01	---	---	---	---
28	Tamil Nadu Road Infrastructure Development Corporation (TN Road Infrastructure)	Highways & Minor Ports	March 2005	5.00	---	---	5.00	---	---	---	---

Sl. No.	Sector/Name of the Company	Name of the Department	Month & year of incorporation	Equity at the close of the year 2018-19				Long-term loans outstanding at the end of the year 2018-19			
				GoTN	GoI	Others	Total	GoTN	GoI	Others	Total
(1)	(2)	(3)	(4)	5(a)	5(b)	5(c)	5(d)	6(a)	6(b)	6(c)	6(d)
29	Tamil Nadu Road Development Company Limited (TNRDC) (Subsidiary of TIDCO and ELCOT)	Highways & Minor Ports	September 2010	---	---	10.00	10.00	8.50	---	196.06	204.56
30.	IT Expressway(Subsidiary of TNRDC and TIDCO)	Highways & Minor Ports	2004	---	---	44.05	44.05	106.30	---	---	106.30
31.	TIDEL Park Coimbatore Limited (TIDEL,Coimbatore) (Subsidiary of TIDEL, Chennai)	Information Technology	June 2007	---	---	177.11	177.11	35.00	---	112.52	147.52
32.	TICEL Bio Park Limited (TICEL Bio Park)(Subsidiary of TIDCO,ELCOT and Tidel park Ltd, Chennai)	Industries	November 2004	118.44	---	---	118.44	7.35	---	44.77	52.12
33.	Tamil Nadu Polymer Industries Park Limited (TNPIP LIMITED) (Subsidiary of TIDCO and SIPCOT)	Industries	April 2015	---	---	5.37	5.37	---	---	---	---
34.	Madurai Thoothukudi Industrial Corridor Development Corporation Limited (MTICD Limited)(Subsidiary of SIPCOT)	Industries	April 2015	---	---	0.05	0.05	---	---	0.47	0.47
35.	Tamil Nadu Small Industries Corporation Limited (TANSI)	Micro, Small and Medium Enterprises	September 1965	20.00	---	---	20.00	---	---	---	---
36.	Tamil Nadu Textiles Corporation Limited (TN Textiles)	Handloom, Handicrafts, Textiles and Khadi	April 1969	1.54	---	---	1.54	5.41	---	0.10	5.51
37.	Tamil Nadu Zari Limited (TN Zari)	Handloom, Handicrafts, Textiles and Khadi	December 1971	0.34	---	---	0.34	---	---	---	---

Sl. No.	Sector/Name of the Company	Name of the Department	Month & year of incorporation	Equity at the close of the year 2018-19				Long-term loans outstanding at the end of the year 2018-19			
				GoTN	GoI	Others	Total	GoTN	GoI	Others	Total
(1)	(2)	(3)	(4)	5(a)	5(b)	5(c)	5(d)	6(a)	6(b)	6(c)	6(d)
38.	Tamil Nadu Handicrafts Development Corporation Limited (TN Handicrafts)	Handloom, Handicrafts, Textiles and Khadi	July 1973	2.05	1.16	0.01	3.22	---	---	---	---
39.	Tamil Nadu Salt Corporation Limited (TN Salt)	Industries	July 1974	6.34	---	---	6.34	---	---	0.34	0.34
40.	Tamil Nadu Sugar Corporation Limited (TASCO)	Industries	October 1974	217.24	---	1.00	218.24	2.07	---	---	2.07
41.	Tamil Nadu Cements Corporation Limited (TANCEM)	Industries	February 1976	111.32	---	---	111.32	117.51	---	486.41	603.92
42.	Perambalur Sugar Mills Limited (PSM) (Subsidiary of TASCO)	Industries	July 1976	---	---	209.10	209.10	31.49	---	10.43	41.92
43.	Tamil Nadu Minerals Limited (TAMIN)	Industries	April 1978	15.74	---	---	15.74	34.09	---	---	34.09
44.	Tamil Nadu Magnesite Limited (TANMAG)	Industries	January 1979	16.65	---	---	16.65	---	---	---	---
45.	Tamil Nadu Industrial Explosives Limited (TIEL)	Industries	February 1983	22.14	---	4.89	27.03	10.62	---	---	10.62
46.	Tamil Nadu Medicinal Plant Farms and Herbal Medicine Corporation Limited (TAMPCOL)	Indian Medicine and Homeopathy	September 1983	3.00	---	---	3.00	---	---	---	---
47.	Tamil Nadu Paints and Allied Products Limited (TAPAP))(Subsidiary of TANSI)	Micro, Small and Medium Enterprises	November 1985	---	---	0.02	0.02	---	---	---	---
48.	Tamil Nadu Newsprint and Papers Limited (TNPL)	Industries	May 1988	24.44	---	44.77	69.21	---	---	1,246.99	1,246.99
49.	Tamil Nadu Tourism Development Corporation Limited (TTDC)	Information and Tourism	June 1971	10.43	---	---	10.43	4.47	---	---	4.47

Sl. No.	Sector/Name of the Company	Name of the Department	Month & year of incorporation	Equity at the close of the year 2018-19				Long-term loans outstanding at the end of the year 2018-19			
				GoTN	GoI	Others	Total	GoTN	GoI	Others	Total
(1)	(2)	(3)	(4)	5(a)	5(b)	5(c)	5(d)	6(a)	6(b)	6(c)	6(d)
50.	Poompuhar Shipping Corporation Limited (PSC)	Highways& Minor Ports	April 1974	20.53	---	---	20.53	---	---	---	---
51.	Electronics Corporation of Tamil Nadu Limited (ELCOT)	Information Technology	March 1977	25.93	---	---	25.93	---	0.12	---	0.12
52.	Pallavan Transport Consultancy Services Limited (PTCS)	Transport	February 1984	0.10	---	---	0.10	---	---	---	---
53.	Metropolitan Transport Corporation Limited (MTC)	Transport	October 2001	822.03	---	---	822.03	383.27	---	469.26	852.53
54.	State Express Transport Corporation Limited (SETC)	Transport	January 2002	638.82	---	---	638.82	385.78	---	212.05	597.83
55.	Tamil Nadu State Transport Corporation (Coimbatore) Limited (TNSTC, Coimbatore)	Transport	December 2003	892.60	---	---	892.60	506.61	---	655.47	1162.08
56.	Tamil Nadu State Transport Corporation (Kumbakonam) Limited (TNSTC, Kumbakonam)	Transport	December 2003	819.24	---	---	819.24	291.33	---	622.90	914.23
57.	Tamil Nadu State Transport Corporation (Salem) Limited (TNSTC, Salem)	Transport	December 2003	522.15	---	---	522.15	200.20	---	338.33	538.53
58.	Tamil Nadu State Transport Corporation (Villupuram) Limited (TNSTC, Villupuram)	Transport	December 2003	698.83	---	---	698.83	209.42	---	258.33	467.75
59.	Tamil Nadu State Transport Corporation (Madurai) Limited (TNSTC, Madurai)	Transport	January 2004	843.15	---	---	843.15	250.57	---	413.29	663.86
60.	Tamil Nadu State Transport Corporation (Tirunelveli) Limited (TNSTC, Tirunelveli)	Transport	November 2010	611.85	---	---	611.85	---	---	982.89	982.89
61.	Arasu Cable TV Corporation Limited (Arasu Cable TV)	Information Technology	October 2007	25.00	---	---	25.00	9.35	---	37.49	46.84

Sl. No.	Sector/Name of the Company	Name of the Department	Month & year of incorporation	Equity at the close of the year 2018-19				Long-term loans outstanding at the end of the year 2018-19			
				GoTN	GoI	Others	Total	GoTN	GoI	Others	Total
(1)	(2)	(3)	(4)	5(a)	5(b)	5(c)	5(d)	6(a)	6(b)	6(c)	6(d)
62.	Tamil Nadu Police Transport Corporation Limited (TN Police Transport)	Home	December 2015	---	---	---	---	---	---	---	---
63.	Tamil Nadu Warehousing Corporation (TANWARE)	Co-operation, Food and Consumer Protection	May 1958	3.80	3.81	---	7.61	103.25	---	---	103.25
64	TN Fibrenet Corporation Limited(TANFINET)	Information Technology	June 2018	0.50	---	---	0.50	---	---	---	---
	Sector-wise total			**7,920.37**	**4.97**	**589.22**	**8,514.56**	**2,781.66**	**0.12**	**9,282.84**	**12,064.62**
	NON-FUNCTIONAL										
65.	Tamil Nadu Agro Industries Development Corporation Limited (TN AGRO)	Agriculture	July 1966	6.01	---	---	6.01	20.96	---	---	20.96
66.	Tamil Nadu Poultry Development Corporation Limited (TAPCO)	Animal Husbandry & Fisheries	July 1973	1.27	---	---	1.27	---	---	---	---
67.	Southern Structurals Limited (SSL)	Industries	October 1956	34.36	0.03	0.15	34.54	---	---	---	---
68.	Tamil Nadu Goods Transport Corporation Limited (TN Goods)	Transport	March 1975	0.33	---	---	0.33	---	---	---	---
	NON-FUNCTIONAL SECTOR TOTAL			**41.97**	**0.03**	**0.15**	**42.15**	**20.96**	---	---	**20.96**
	CS TOTAL			**7,962.34**	**5.00**	**589.37**	**8,556.71**	**2,802.62**	**0.12**	**9,282.84**	**12,085.58**
	OTHER SECTOR										
69.	Tamil Nadu Police Housing Corporation Limited (TN Police Housing)	Home	April 1981	1.00	---	---	1.00	---	---	---	---

Sl. No.	Sector/Name of the Company	Name of the Department	Month & year of incorporation	Equity at the close of the year 2018-19				Long-term loans outstanding at the end of the year 2018-19			
				GoTN	GoI	Others	Total	GoTN	GoI	Others	Total
(1)	(2)	(3)	(4)	5(a)	5(b)	5(c)	5(d)	6(a)	6(b)	6(c)	6(d)
70.	Tamil Nadu State Marketing Corporation Limited (TASMAC)	Prohibition & Excise	May 1983	15.00	---	---	15.00	---	---	---	---
	Sector-wise total			**16.00**	**---**	**---**	**16.00**	**---**	**---**	**---**	**---**
	All Sector total			**8,181.10**	**52.32**	**590.99**	**8,824.41**	**2,836.55**	**0.12**	**10,055.75**	**12,892.42**

NOTE:

Working status of PSUs

Sector	Working PSUs		Non-functional PSUs	
	Number of PSUs	Reference in the Annexure	Number of PSUs	Reference in the Annexure
Social Sector	13	Sl. No. 1 to 13	1	Sl. No 14
Competitive Sector	50	Sl. No. 15 to 64	4	Sl. No. 65 to 68
Other Sectors	2	Sl. No 69 to 70	--	--
Total	**65**		**5**	

ANNEXURE-9

(Referred to in paragraph 4.6)

Summarised statement showing difference between Finance Accounts of Government of Tamil Nadu and Accounts of the State PSUs (Other than Power Sector) in respect of balances of equity and guarantees as on 31 March 2019

(₹ in crore)

Sl.No.	Name of PSU	As per records of State PSUs		As per Finance Accounts of Government of Tamil Nadu		Difference	
		Paid-up capital	Guarantee Committed	Paid-up capital	Guarantee Committed	Paid-up capital	Guarantee Committed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Tamil Nadu Backward Classes Economic Development Corporation Limited (TABCEDCO)	---	75.00	---	234.33	---	(-)159.33
2.	Tamil Nadu Minorities Economic Development Corporation Limited (TAMCO)	2.05	96.12	5.00	91.02	(-)2.95	5.10
3.	Tamil Nadu Skill Development Corporation Limited (TNSDC)	0.05	---	---	---	0.05	---
4.	Tamil Nadu Infra (TN INFRA)	32.30	---	---	---	32.30	---
5.	Tamil Nadu Sugar Corporation Limited (TASCO)	217.24	43.97	79.97	50.87	137.27	(-)6.90
6.	Tamil Nadu State Transport Corporation (Salem) Limited (TNSTC, Salem)	522.15	---	557.56	---	(-)35.41	---
7.	Tamil Nadu State Transport Corporation (Tirunelveli) Limited (TNSTC, Tirunelveli)	611.85	---	141.31	---	470.54	---
8.	TN Fibrenet Corporation Limited(TANFINET)	0.50	---	---	---	0.50	---
9.	Tamil Nadu Poultry Development Corporation Limited (TAPCO)	1.27	---	---	---	1.27	---
10.	Tamil Nadu Goods Transport Corporation Limited (TN Goods)	0.33	---	---	---	0.33	---
11.	Southern Structurals Limited (SSL)	34.36	---	34.54	---	(-)0.18	---

Sl.No.	Name of PSU	As per records of State PSUs		As per Finance Accounts of Government of Tamil Nadu		Difference	
		Paid-up capital	Guarantee Committed	Paid-up capital	Guarantee Committed	Paid-up capital	Guarantee Committed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
12	Tamil Nadu Rural Housing and Infrastructure Development Corporation Limited (TN Rural Housing)	---	463.10	---	514.54	---	(-)51.44
13	Tamil Nadu Industrial Investment Corporation Limited (TIIC)	---	458.87	---	150.00	---	308.87
14	Tamil Nadu Cements Corporation Limited (TANCEM)	---	486.41	---	602.20	---	(-)115.79
15	Tamil Nadu Agro Industries Development Corporation Limited (TN AGRO)	6.01	---	---	---	6.01	---
	TOTAL	**1,428.11**	**1,623.47**	**818.38**	**1,642.96**	**609.73**	**(-)19.49**

ANNEXURE-10

(Referred to in Paragraph 4.7.1)

Details of Arrears in accounts in respect of PSUs (Other than Power Sector)

Sl. No.	Name of the Company	Year completed	Arrears	Number of accounts in arrears
	SOCIAL SECTOR			
1	Tamil Nadu Adi-dravidar Housing and Development Corporation Limited (TAHDCO)	2017-18	2018-19	1
2	Tamil Nadu Minorities Economic Development Corporation Limited (TAMCO)	2017-18	2018-19	1
	COMPETITIVE SECTOR			
3	Tamil Nadu Police Transport Corporation Limited (Police Transport)	---	2015-16 to 2018-19	4
	Total			**6**

ANNEXURE-11

(Referred to in paragraph 4.10)

Summarised statement of financial results of State PSUs (Other than Power Sector) for the latest year for which accounts were finalised

(Figures in Column (5) to (11) are ₹ in crore)

Sl. No.	Sector/Name of the Company	Period of accounts	Year in which accounts finalised	Net profit/loss before interest & tax	Net profit/loss after interest & tax	Turn over	Paid-up capital	Capital employed	Net worth	Accumulated profit/loss
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
A	**SOCIAL SECTOR**									
1.	**Working Government Companies**									
1.	Tamil Nadu Fisheries Development Corporation Limited (TN Fisheries)	2018-19	2019-20	13.43	8.56	556.16	4.46	35.59	35.59	31.13
2.	Tamil Nadu Handloom Development Corporation Limited (TN Handloom)	2018-19	2019-20	1.19	0.43	27.73	4.29	8.51	3.14	-1.15
3.	Tamil Nadu Adi-dravidar Housing and Development Corporation Limited (TAHDCO)	2017-18	2019-20	2.59	2.17	12.47	143.54	203.99	192.88	49.34
4.	Tamil Nadu Backward Classes Economic Development Corporation Limited (TABCEDCO)	2018-19	2019-20	10.14	5.69	7.39	12.27	199.12	42.50	30.23
5.	Tamil Nadu Corporation for Development of Women Limited (TN Women)	2018-19	2019-20	3.88	3.88	675.07	0.78	42.58	42.58	41.80
6.	Tamil Nadu Minorities Economic Development Corporation Limited (TAMCO)	2018-19	2019-20	3.79	2.18	5.94	2.05	83.29	25.12	23.07
7.	Tamil Nadu Rural Housing and Infrastructure Development Corporation Limited (TN Rural Housing)	2018-19	2019-20	46.77	0.34	46.83	3.00	468.37	5.27	2.27
8.	Adyar Poonga	2018-19	2019-20	---	---	---	0.10	0.10	0.10	---
9.	Tamil Nadu Civil Supplies Corporation (TNCSC)	2018-19	2019-20	193.69	---	11,085.50	71.74	72.94	71.74	---
10.	Overseas Manpower Corporation Limited (OMPC)	2018-19	2019-20	0.53	0.39	1.37	0.15	1.33	1.33	1.18
11.	Tamil Nadu Skill Development Corporation Limited (TNSDC)	2018-19	2019-20	---	---	204.88	0.05	0.21	0.21	0.16
12.	Tamil Nadu Medical Services Corporation Limited	2018-19	2019-20	(-)5.76	(-)7.54	58.82	4.04	95.58	11.67	7.63

Sl. No.	Sector/Name of the Company	Period of accounts	Year in which accounts finalised	Net profit/loss before interest & tax	Net profit/loss after interest & tax	Turn over	Paid-up capital	Capital employed	Net worth	Accumulated profit/loss
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	(TN Medical)									
13.	Tamil Nadu Ex-servicemen's Corporation Limited (TEXCO)	2018-19	2019-20	19.85	19.85	257.13	0.23	166.21	166.21	165.98
	TOTAL A-I			**290.10**	**35.95**	**12,939.29**	**246.70**	**1,377.82**	**598.34**	**351.64**
	II. Non-functional Government Companies									
14.	Tamil Nadu State Construction Corporation Limited (TN State Construction)	2014-18	2019-20	0.15	(-)4.49	---	5.00	(-)17.69	(-)45.05	(-)50.05
	TOTAL A-II			**0.15**	**(-)4.49**	**---**	**5.00**	**(-)17.69**	**(-)45.05**	**(-)50.05**
	TOTAL A (I+II)			**290.25**	**31.46**	**12,939.29**	**251.70**	**1,360.13**	**553.29**	**301.59**
B	**COMPETITIVE SECTOR**									
	I. Working Government Companies									
15.	Tamil Nadu Forest Plantation Corporation Limited (TAFCORN)	2018-19	2019-20	29.23	27.83	94.31	5.64	197.27	197.27	191.63
16.	Tamil Nadu Tea Plantation Corporation Limited (TANTEA)	2018-19	2019-20	(-)92.36	(-)97.29	56.30	14.96	(-)84.02	(-)184.56	(-)199.52
17.	Arasu Rubber Corporation Limited (ARC)	2018-19	2019-20	(-)9.11	(-)9.14	30.46	13.07	(-)9.37	(-) 10.17	(-)23.24
18.	Tamil Nadu Industrial Investment Corporation Limited (TIIC)	2018-19	2019-20	122.00	36.53	177.15	376.00	876.89	474.43	98.43
19.	Tamil Nadu Small Industries Development Corporation Limited (TNSIDCO)	2018-19	2019-20	5.27	2.85	63.37	25.14	113.20	113.20	88.06
20.	Tamil Nadu Transport Development Finance Corporation Limited (TDFC)	2018-19	2019-20	466.92	7.82	419.79	774.28	3,450.95	867.57	93.29
21.	Tamil Nadu Urban Finance and Infrastructure Development Corporation Limited (TUFIDCO)	2018-19	2019-20	52.07	24.42	55.26	32.00	227.06	48.90	16.90
22.	Tamil Nadu Infrastructure Fund Management Corporation Limited (TN Infra Management)	2018-19	2019-20	(-)8.71	(-)8.81	5.28	32.30	14.24	14.24	(-)18.06
23.	Tamil Nadu Industrial Development Corporation	2018-19	2019-20	174.50	154.29	12.82	72.03	545.94	537.62	465.59

Sl. No.	Sector/Name of the Company	Period of accounts	Year in which accounts finalised	Net profit/loss before interest & tax	Net profit/loss after interest & tax	Turn over	Paid-up capital	Capital employed	Net worth	Accumulated profit/loss
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Limited (TIDCO)									
24.	State Industries Promotion Corporation of Tamil Nadu Limited (SIPCOT)	2018-19	2019-20	238.93	153.88	358.82	123.91	1314.52	1,314.52	1,190.61
25.	TIDEL Park Limited (TIDEL, Chennai)	2018-19	2019-20	69.65	48.95	79.05	44.00	405.84	405.84	361.84
26.	Nilakottai Food Park Limited (Nilakottai)	2018-19	2019-20	0.08	0.06	---	0.68	1.06	0.91	0.23
27.	Guindy Industrial Estate Infrastructure Upgradation Company (Guindy Industrial Estate)	2018-19	2019-20	0.03	0.03	0.26	0.01	0.01	0.01	---
28	Tamil Nadu Road Infrastructure Development Corporation (TN Road Infrastructure)	2018-19	2019-20	(-)0.95	(-)0.95	3.42	5.00	6.25	6.25	1.25
29	Tamil Nadu Road Development Company Limited (TNRDC)	2018-19	2019-20	20.09	2.83	37.11	10.00	239.33	34.77	24.77
30.	IT Expressway	2018-19	2019-20	37.80	23.25	68.93	44.05	249.79	143.49	99.44
31.	TIDEL Park Coimbatore Limited (TIDEL,Coimbatore)	2018-19	2019-20	21.07	3.33	47.06	177.11	297.86	150.34	(-)26.77
32.	TICEL Bio Park Limited (TICEL Bio Park)	2018-19	2019-20	10.94	0.96	30.19	118.44	146.53	94.41	(-)24.03
33.	Tamil Nadu Polymer Industries Park Limited (TNPIP LIMITED)	2018-19	2019-20	0.06	(-)0.10	---	5.37	5.21	5.21	(-)0.16
34.	Madurai Thoothukudi Industrial Corridor Development Corporation Limited (MTICD Limited)	2018-19	2019-20	(-)0.12	(-)0.12	---	0.05	0.05	(-)0.42	(-)0.47
35.	Tamil Nadu Small Industries Corporation Limited (TANSI)	2018-19	2019-20	9.04	7.27	43.95	20.00	117.80	117.80	97.80
36.	Tamil Nadu Textiles Corporation Limited (TN Textiles)	2018-19	2019-20	0.85	0.38	25.50	1.54	7.11	1.60	0.06
37.	Tamil Nadu Zari Limited (TN Zari)	2018-19	2019-20	0.65	0.41	33.56	0.34	2.92	2.92	2.58
38.	Tamil Nadu Handicrafts Development Corporation Limited (TN Handicrafts)	2018-19	2019-20	0.89	0.40	41.38	3.22	10.02	10.02	6.80
39.	Tamil Nadu Salt Corporation Limited (TN Salt)	2018-19	2019-20	(-)1.53	(-)2.09	37.97	6.34	4.00	3.66	(-)2.68

Sl. No.	Sector/Name of the Company	Period of accounts	Year in which accounts finalised	Net profit/loss before interest & tax	Net profit/loss after interest & tax	Turn over	Paid-up capital	Capital employed	Net worth	Accumulated profit/loss
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
40.	Tamil Nadu Sugar Corporation Limited (TASCO)	2018-19	2019-20	(-)8.33	(-)11.08	34.38	218.24	18.86	16.79	(-)201.45
41.	Tamil Nadu Cements Corporation Limited (TANCEM)	2018-19	2019-20	4.02	3.31	482.95	111.32	653.17	49.25	(-)62.07
42.	Perambalur Sugar Mills Limited (PSM) (subsidiary of TASCO)	2018-19	2019-20	(-)5.76	(-)15.02	45.81	209.10	(-)51.60	(-)93.52	(-)302.62
43.	Tamil Nadu Minerals Limited (TAMIN)	2018-19	2019-20	(-)117.49	(-)124.14	56.25	15.74	(-)74.79	(-)108.88	(-)124.62
44.	Tamil Nadu Magnesite Limited (TANMAG)	2018-19	2019-20	8.57	3.82	35.22	16.65	99.02	99.02	82.37
45.	Tamil Nadu Industrial Explosives Limited (TIEL)	2018-19	2019-20	(-)1.40	(-)15.72	0.01	27.03	(-)191.47	(-)202.09	(-)229.12
46.	Tamil Nadu Medicinal Plant Farms and Herbal Medicine Corporation Limited (TAMPCOL)	2018-19	2019-20	6.78	4.85	42.25	3.00	24.04	24.04	21.04
47.	Tamil Nadu Paints and Allied Products Limited (TAPAP)	2018-19	2019-20	0.31	0.23	1.70	0.02	2.67	2.67	2.65
48.	Tamil Nadu Newsprint and Papers Limited (TNPL)	2018-19	2019-20	388.56	94.39	4,082.71	69.21	1,415.28	168.29	99.08
49.	Tamil Nadu Tourism Development Corporation Limited (TTDC)	2018-19	2019-20	5.04	4.58	114.56	10.43	61.98	57.51	47.08
50.	Poompuhar Shipping Corporation Limited (PSC)	2018-19	2019-20	55.23	37.15	878.30	20.53	74.97	74.97	54.44
51.	Electronics Corporation of Tamil Nadu Limited (ELCOT)	2018-19	2019-20	80.37	54.59	71.32	25.93	173.15	173.03	147.10
52.	Pallavan Transport Consultancy Services Limited (PTCS)	2018-19	2019-20	(-)0.22	(-)0.22	0.65	0.10	(-)2.10	(-) 2.10	(-)2.20
53.	Metropolitan Transport Corporation Limited (MTC)	2018-19	2019-20	(-)486.50	(-)661.09	1,483.79	822.03	(-)2,739.02	(-)3,591.55	(-)4,413.58
54.	State Express Transport Corporation Limited (SETC)	2018-19	2019-20	(-)190.02	(-)291.08	638.72	638.82	(-)1,103.07	(-)1,700.90	(-)2,339.72
55.	Tamil Nadu State Transport Corporation (Coimbatore) Limited (TNSTC, Coimbatore)	2018-19	2019-20	(-)573.19	(-)723.80	1,436.33	892.60	(-)2,689.29	(-)3,851.37	(-)4,743.97
56.	Tamil Nadu State Transport Corporation (Kumbakonam) Limited (TNSTC, Kumbakonam)	2018-19	2019-20	(-)384.41	(-)542.93	1,924.20	819.24	(-)2,000.92	(-)2,915.15	(-)3,734.39
57.	Tamil Nadu State Transport Corporation (Salem) Limited (TNSTC, Salem)	2018-19	2019-20	(-)385.39	(-)491.31	1,030.39	522.15	(-)1,883.14	(-)2,421.67	(-)2,943.82

Sl. No.	Sector/Name of the Company	Period of accounts	Year in which accounts finalised	Net profit/loss before interest & tax	Net profit/loss after interest & tax	Turn over	Paid-up capital	Capital employed	Net worth	Accumulated profit/loss
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
58.	Tamil Nadu State Transport Corporation (Villupuram) Limited (TNSTC, Villupuram)	2018-19	2019-20	(-)276.87	(-)383.13	1,947.21	698.83	(-)2,198.73	(-)2,666.48	(-)3,365.31
59.	Tamil Nadu State Transport Corporation (Madurai) Limited (TNSTC, Madurai)	2018-19	2019-20	(-)452.92	(-)563.60	1,253.42	843.15	(-)2,314.38	(-)2,978.24	(-)3,821.39
60.	Tamil Nadu State Transport Corporation (Tirunelveli) Limited (TNSTC, Tirunelveli)	2018-19	2019-20	(-)455.03	(-)577.58	867.86	611.85	(-)2,061.28	(-)3,044.17	(-)3,656.02
61.	Arasu Cable TV Corporation Limited (Arasu Cable TV)	2018-19	2019-20	(-)16.67	(-)21.90	332.53	25.00	55.73	8.89	(-)16.11
62.	Tamil Nadu Police Transport Corporation Limited (TN Police Transport)	due	due	---	---	---	---	---	---	---
63.	Tamil Nadu Warehousing Corporation (TANWARE)	2018-19	2019-20	28.92	17.53	60.31	7.61	110.86	7.61	---
64.	TN Fibrenet Corporation Limited (TANFINET)	2018-19	2019-20	---	---	---	0.50	0.50	0.50	---
	TOTAL B-I			**(-)1,629.11**	**(-)3,825.16**	**18,542.81**	**8,514.56**	**(-)6,479.10**	**(-)18,543.72**	**(-)27,058.28**
	II. Non-functional Government companies									
65.	Tamil Nadu Agro Industries Development Corporation Limited (TN AGRO)	2012-13	2015-16	0.91	(-)2.73	---	6.01	(-)52.65	(-)73.61	(-)79.62
66.	Tamil Nadu Poultry Development Corporation Limited (TAPCO)	2015-16	2017-18	---	---	---	1.27	(-)9.10	(-)9.10	(-)10.37
67.	Southern Structurals Limited (SSL)	2018-19	2019-20	(-)1.29	(-)14.32	---	34.54	(-)259.79	(-)259.79	(-)294.33
68.	Tamil Nadu Goods Transport Corporation Limited (TN Goods)	1989-90		0.07	---	---	0.33	(-)1.00	(-)1.00	(-)1.33
	TOTAL B-II			**(-)0.31**	**(-)17.05**	**---**	**42.15**	**(-)322.54**	**(-)343.50**	**(-)385.65**
	TOTAL B-I+II			**(-)1,629.42**	**(-)3,842.21**	**18,542.81**	**8,556.71**	**(-)6,801.64**	**(-)18,887.22**	**(-)27,443.93**

Sl. No.	Sector/Name of the Company	Period of accounts	Year in which accounts finalised	Net profit/loss before interest & tax	Net profit/loss after interest & tax	Turn over	Paid-up capital	Capital employed	Net worth	Accumulated profit/loss
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
C.	**OTHER SECTOR**									
69.	Tamil Nadu Police Housing Corporation Limited (TN Police Housing)	2018-19	2019-20	10.90	7.64	59.67	1.00	45.61	45.61	44.61
70.	Tamil Nadu State Marketing Corporation Limited (TASMAC)	2018-19	2019-20	40.63	13.47	36,755.55	15.00	(-)65.99	(-)65.99	(-)80.99
	TOTAL C			**51.53**	**21.11**	**36,815.22**	**16.00**	**(-)20.38**	**(-)20.38**	**(-)36.38**
	GRAND TOTAL-A+B+C			**(-)1,287.64**	**(-)3,789.64**	**68,297.32**	**8,824.41**	**(-)5,461.89**	**(-)18,354.31**	**(-)27,178.72**
	Working Government Companies			**(-)1,287.48**	**(-)3,768.10**	**68,297.32**	**8,777.26**	**(-)5,121.66**	**(-)17,965.76**	**(-)26,743.02**
	Non-functional Government companies			**(-)0.16**	**(-)21.54**	**---**	**47.15**	**(-)340.23**	**(-)388.55**	**(-)435.70**

NOTE:

1. Loans outstanding at the close of 2018-19 represent long-term loans only.
2. Capital Employed represents Share Holders Funds PLUS Long Term Borrowings.

Glossary of Abbreviations

Abbreviation	Description
AACQ	Aggregated Annual Contracted Quantity
ACQ	Annual Contracted Quantity
ACS	Average Cost of Supply
ADB	Air Dried Basis
AQ	Agreed Quantity
ARR	Average Revenue Realised
AT&C Losses	Aggregate Technical and Commercial Losses
ATNs	Action Taken Notes
BIS	Bureau of Indian Standards
CAG	Comptroller and Auditor General of India
CAGR	Compounded Annual Growth Rate
CB	Coal Berth
CBMS	Coal Bill Management System
CCL	Central Coalfields Limited
CD	Customs Duty
CDB	Coal Data Book
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CGP	Captive Generating Plants
CICTPL	Chettinad International Coal Terminal Private Limited
CIL	Coal India Limited
CIMFR	Central Institute of Mining and Fuel Research
CMD	Chairman cum Managing Director
CMRI	Common Meter Reading Instrument
COPU	Committee on Public Undertakings
CREW	Chennai Radha Engineering Works (P) Limited
CRP	Code Review Panel
CS	Competitive Sector
CSIR	Council of Scientific and Industrial Research
CUCT	Common User Coal Terminal
DISCOM	Distribution Companies
DSM	Demand Side Management
DT	Distribution Transformer
EAC	Expert Appraisal Committee
EBIT	Earnings Before Interest and Taxes
EC	Environmental Clearance
ECL	Eastern Coalfields Limited
EDCs	Electricity Distribution Circles
EIA	Environment Impact Assessment
EMI	Equated Monthly Installment
EMP	Environment Management Plan
ETPS	Ennore Thermal Power Station

Abbreviation	Description
FSA	Fuel Supply Agreement
GCV	Gross Calorific Value
GIS	Geographic Information System
GOI	Government of India
GOs	Government Orders
GOTN	Government of Tamil Nadu
GSDP	Gross State Domestic Product
GST	Goods and Services Tax
HD	High Definition
HT	High Tension
IBM	Indian Bureau of Mines
ICR	Interest Coverage Ratio
IFL	Interest Free Loan
IT	Information Technology
ITC	Input Tax Credit
ITES	IT Enabled Services
JV	Joint Venture
KoPT	Kolkata Port Trust
KPL	Kamarajar Port Limited
KVA	Kilo Volt Ampere
KW	Kilo Watt
LC	Letter of Credit
LCOs	Local Cable Operators
LED	Light Emitting Diode
LT	Low Tension
M/s BMWPL	M/s Balaji Machine Works Private Limited
M/s MIL	M/s Mantra Industries Limited
MCL	Mahanadi Coalfields Limited
MGQ	Minimum Guaranteed Quantity
MMT	Million Metric Tonnes
MMTPA	Million Metric Tonnes per annum
MOC	Ministry of Coal
MoEF	Ministry of Environment and Forest
MoEFCC	Ministry of Environment, Forest and Climate Change
MOU	Memorandum of Understanding
MTPS	Mettur Thermal Power Station
MU	Million Units
MW	Mega Watt
NCDP	New Coal Distribution Policy
NCTPS	North Chennai Thermal Power Station
NOC	No Objection Certificate
Non-SLR bonds	Non-Statutory Liquidity Ratio bonds
NTECL	NTPC Tamil Nadu Energy Company Limited
NTPL	NLC Tamil Nadu Power Limited
O&M	Operations and Maintenance
OYH	Own Your House Scheme

Abbreviation	Description
PAN	Permanent Account Number
PDS	Public Distribution System
PEDC	Pudukottai Electricity Distribution Circle
PNB	Punjab National Bank
POC	Parallel Operation Charges
POs	Purchase Orders
PPT	Paradip Port Trust
PSC	Poompuhar Shipping Corporation
PSUs	Public Sector Undertakings
PV	Present Value
ROCE	Return on Capital Employed
ROE	Return on Equity
SC	Service Connection
SCC	Specific Coal Consumption
SCCL	Singareni Collieries Company Limited
SD	Standard Definition
SEB	State Electricity Boards
SEIAA	State Level Environment Impact Assessment Authority
SESCOT	State Engineering and Servicing Company of Tamil Nadu Limited
SHR	Station Heat Rate
SQ	Supplied Quantity
SS	Social Sector
STB	Set Top Box
TACTV	Tamil Nadu Arasu Cable TV Corporation Limited
TAMIN	Tamil Nadu Minerals Limited
TANCEM	Tamil Nadu Cements Corporation Limited
TANGEDCO	Tamil Nadu Generation and Distribution Corporation Limited
TANTRANSCO	Tamil Nadu Transmission Corporation Limited
TEDC	Tuticorin Electricity Distribution Circle
TIDEL	TIDEL Park Limited, Chennai
TIIC	Tamil Nadu Industrial Investment Corporation Limited
TNCSC	Tamil Nadu Civil Supplies Corporation Limited
TNEB	Tamil Nadu Electricity Board
TNERC	Tamil Nadu Electricity Regulatory Commission
TNPCB	Tamil Nadu Pollution Control Board
TNPFC	Tamil Nadu Power Finance and Infrastructure Development Corporation Limited
TNPHC	Tamil Nadu Police Housing Corporation Limited
TNVAT	Tamil Nadu Value Added Tax
TOR	Terms of Reference
UDAY	Ujwal DISCOM Assurance Yojana
UPCL	Udangudi Power Corporation Limited