Chapter IV

Government Commercial And Trading Activities

4.1 Overview of State Public Sector Undertakings

Introduction

4.1.1 The State Public Sector Undertakings (PSUs) consist of State Government Companies and Statutory Corporations. The State PSUs are established to carry out activities of commercial nature while keeping in view the welfare of people. In Jharkhand, the PSUs occupy a minor place in the state economy. The PSUs registered a turnover of ₹ 1565.52 crore for 2009-10 as per their latest finalised accounts as of September 2010. This turnover was equal to 1.88[1] *per cent* of State Gross Domestic Product (GDP) for 2009-10. Major activities of State PSUs/Statutory Corporation are concentrated in power sector. The State PSUs incurred aggregate loss of ₹ 442.43 crore as per their latest accounts finalised during 2009-10. They had employed 8385 employees as of 31 March 2010. The State PSUs do not include 31 Departmental Undertakings (DUs), which carry out commercial operations but are a part of Government departments. Audit findings of these DUs are incorporated in Audit Report (State Finances) Government of Jharkhand for the year ended 31 March 2010.

4.1.2 As on 31 March 2010, there were ten Government companies and one Statutory Corporation (all working). No company was listed on the stock exchange(s).

4.1.3 During the year 2009-10, one PSU[2] was established and no PSU/Statutory Corporation closed down.

Audit Mandate

4.1.4 Audit of Government Companies is governed by Section 619 of the Companies Act, 1956. According to Section 617, a Government company is one in which not less than 51 *per cent* of the paid up capital is held by Government(s). A Government Company includes a subsidiary of a Government Company. Further, a company in which not less than 51 *per cent* of the paid up capital is held in any combination by Government(s), Government Companies and Corporations controlled by Government(s) is treated as if it were a Government Company (deemed Government Company) as per Section 619-B of the Companies Act.

4.1.5 The accounts of the State Government Companies (as defined in Section 617 of the Companies Act, 1956) are audited by Statutory Auditors, who are appointed by CAG as per the provisions of Section 619(2) of the Companies Act, 1956. These accounts are also subject to supplementary audit conducted by CAG as per the provisions of Section 619 of the Companies Act, 1956.

[1] Percentage is based on advance estimate figure of GDP.

[2] Karanpura Energy Limited, a subsidiary of Jharkhand State Electricity Board.

4.1.6 Audit of Statutory Corporations is governed by its respective legislations. CAG is the sole auditor for Jharkhand State Electricity Board.

Investment in State PSUs

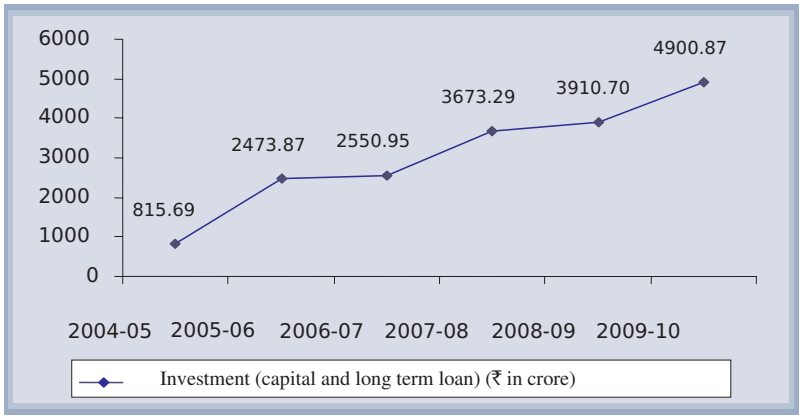
4.1.7 As on 31 March 2010, the investment (capital and long-term loans) in 11 PSUs (including one Statutory Corporation) was ₹ 4900.87 crore as per details given below.

(₹ in crore)

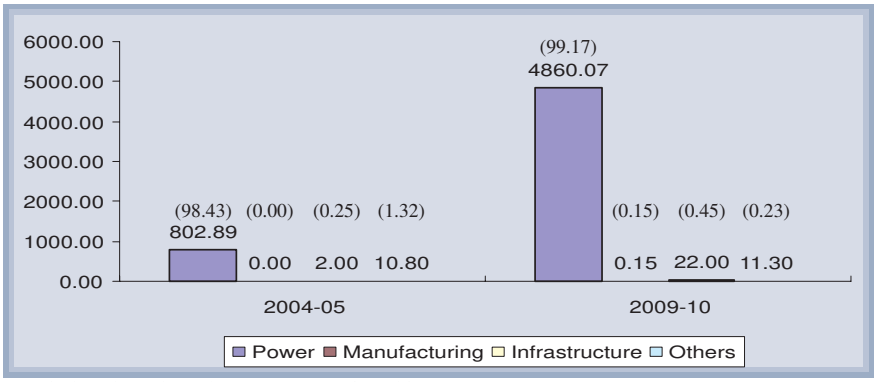
Government Companies			Statutory Corporations			Grand Total
Capital	Long term loans	Total	Capital	Long term loans	Total	
140.60	674.18	814.78	-	4,086.09	4,086.09	4,900.87

A summarised position of Government investment in State PSUs is detailed in ***Appendix-4.1***.

4.1.8 As on 31 March 2010, of the total investment in PSUs, 2.87 *per cent* was towards capital and 97.13 *per cent* in long-term loans. The investment has grown by 500.82 *per cent* from ₹ 815.69 crore in 2004-05 to ₹ 4900.87 crore in 2009-10 as shown in the graph below.



4.1.9 The investment in various important sectors and percentage thereof at the end of 31 March 2005 and 31 March 2010 are indicated below in the bar chart.



(Figures in brackets show the percentage of total investment)

The thrust of PSU investment was mainly in power sector during the past six years which increased 505.32 *per cent* from ₹ 802.89 crore in 2004-05 to

₹ 4860.07 crore in 2009-10 due to loan amounting to ₹ 4086.09 crore given by Government and others to JSEB and also including investment in Karanpura Energy Limited and TVNL which was transferred to Jharkhand in August 2007. The other sectors have also shown marginal growth during 2009-10.

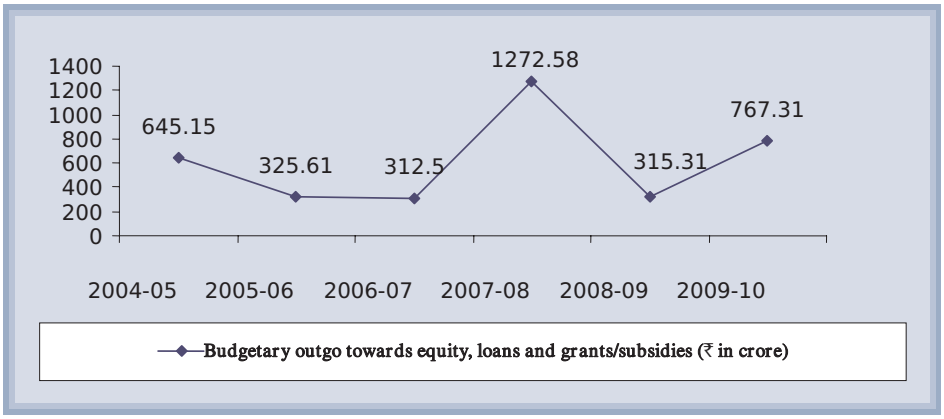
Budgetary outgo, grants/subsidies, guarantees and loans

4.1.10 The details regarding budgetary outgo towards equity, loans and grants/subsidies in respect of State PSUs at the end of March 2010 are given in ***Appendix-4.3***. The summarised details are given below for three years ended 2009-10.

(₹ in crore)

Sl. No.	Particulars	2007-08		2008-09		2009-10	
		No. of PSUs	Amount	No. of PSUs	Amount	No. of PSUs	Amount
1.	Equity Capital outgo from budget	2	4.10	2	10.40	4	2.75
2.	Loans given from budget	1	347.34	1	224.91	1	362.76
3.	Grants/Subsidy received	1	921.14	1	80.00	2	401.80
4.	Total outgo[?]	3	1272.58	3	315.31	6	767.31

4.1.11 The details regarding budgetary outgo towards equity, loans and grants/subsidies for past six years are given in a graph below.



The budgetary outgo during the year has increased from ₹ 315.31crore in 2008-09 to ₹ 767.31 crore in the year 2009-10 mainly because of budgetary support in respect of subsidy given to JSEB.

Reconciliation with Finance Accounts

4.1.12 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 the State. In case the figures do not agree, the concerned PSUs and the Finance Department should carry out reconciliation of differences. The position in this regard as at 31 March 2010 is stated below.

[3] Total outgo represents total number of PSUs.

(₹ in crore)

Outstanding in respect of	Amount as per Finance Accounts	Amount as per records of PSUs	Difference
Equity	19.30	140.55	121.25
Loans	6137.33	4592.51	1544.82

4.1.13 We observed that the difference occurred in respect of seven[4] PSUs including JSEB (Statutory Corporation) and was pending reconciliation since 2001-02. The Accountant General had taken up the issue with Secretary to the Finance Department of the Government of Jharkhand and JSEB to reconcile the differences after examination. The Government and the PSUs should take concrete steps to reconcile the differences in a time-bound manner.

Performance of PSUs

4.1.14 The financial results of PSUs, financial position and working results of working Statutory Corporations are detailed in ***Appendices-4.2*** *and* ***4.5.*** A ratio of PSU turnover to State GDP shows the extent of PSU activities in the State economy. Table below provides the details of turnover of working PSUs *vis-à-vis* State GDP for the period 2004-05 to 2009-10.

(₹ in crore)

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Turnover[5]	1,216.37	1,216.12	30.77	364.90	1,552.32	1565.52
State GDP	57,939	62,239	73,579	87,620	75,710.78	83077.90[6]
Percentage of turnover to State GDP	2.10	1.95	0.04	0.42	2.05	1.88

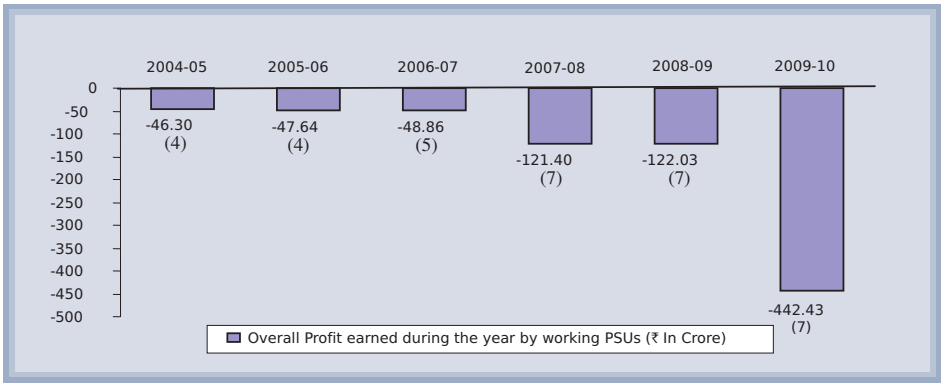
The percentage of turnover of PSUs to the State GDP has declined from 2.05 *per cent* in 2008-09 to 1.88 *per cent* in 2009-10, although there was an increase in turnover and state GDP during the current year as compared to previous year.

4.1.15 Profit (losses) earned (incurred) by State PSUs during 2004-05 to 2009-10 are given below in a bar chart.

[4] Tenughat Vidyut Nigam Ltd., Jharkhand Industrial Infrastructure Development Corporation Ltd., Jharkhand Tourism Development Corporation Ltd., Jharkhand Silk Textile & Handicraft Development Corporation Ltd., Greater Ranchi Development Agency Ltd., Jharkhand Hill Area Lift Irrigation Corporation Ltd. & Jharkhand State Electricity Board.

[5] Turnover as per the latest finalized accounts as of 30 September 2010.

[6] The figure of GDP for 2009-10 based on advance estimate at current prices (as of June 2010).



As per the latest accounts finalised, out of 11 working PSUs, four PSUs earned a profit of ₹ 4.05 crore and three PSUs incurred loss of ₹ 446.48 crore. The above included heavy losses incurred by Tenughat Vidyut Nigam Limited (TVNL) (₹ 70.94 crore) and JSEB (₹ 374.13 crore) for their accounts for the years 1993-94 and 2001-02 finalised in the year 2000-01 and 2010-11 respectively. The accounts in respect of all these PSUs are in arrears. Remaining four PSUs either did not carry out their activities or prepared its accounts so far.

4.1.16 The losses of PSUs are mainly attributable to deficiencies in financial management, planning, implementation of their activities, their operations and monitoring. A review of latest Audit Reports of CAG shows that the State PSUs incurred losses to the tune of ₹ 2978.89 crore and infructuous investment of ₹ 74.71 crore which were controllable with better management. Year wise details from Audit Reports are stated below.

(₹ in crore)

Particulars	2007-08	2008-09	2009-10	Total
Net loss	121.40	122.02	442.43	685.85
Controllable losses as per CAG's Audit Report	1779.36	57.25	1142.38	2978.89
Infructuous Investment	57.81	16.49	0.41	74.71

4.1.17 The above losses pointed out by Audit Reports of CAG are based on test check of records of PSUs. The actual controllable losses would be much more. The above table shows that with better management, the losses can be minimised (or eliminated or the profits can be enhanced substantially). The PSUs can discharge their role efficiently only if they are financially self-reliant. The above situation points towards a need for professionalism and accountability in the functioning of PSUs.

4.1.18 Some other key parameters pertaining to State PSUs are given below.

4.1.21 The number of arrears of accounts of the PSUs had increased over the years. The number of arrears of accounts during 2005-06 in respect of six PSUs was 18 which had increased to 46 in 2009-10 in respect of 11 PSUs. The increased number of accounts in arrears was due to inclusion of Tenughat Vidyut Nigam Limited (TVNL) consequent upon its transfer from Bihar to Jharkhand in August 2007 which had its accounts in arrears since 1994-95. The Jharkhand Silk Textile and Handicrafts Development Corporation Limited (JHARCRAFT) had its arrears of accounts for four years. The Karanpura Energy Limited had its arrears of accounts for two years during the year 2009-10. However, the JSEB and Jharkhand Tourism Development Corporation had also its accounts in arrears since 2002-03 and 2004-05 respectively.

4.1.22 The State Government had invested ₹ 4,408.34 crore (Equity ₹ 28.25 crore, loans: ₹ 1,826.20 crore, grants: ₹ 2,553.89 crore) in 11 PSUs including one Statutory Corporation during the years for which accounts have not been finalised as detailed in ***Appendix-4.4***. In the absence of accounts and their

[7] Turnover of PSUs as per the latest finalised accounts as of 30 September.

[8] JSFDC, JIIDCO, JPHC and JTDC.

subsequent audit, it can not be ensured whether the investments and expenditure incurred have been properly accounted for and the purpose for which the amount was invested has been achieved or not and thus Government's investment in such PSUs remain outside the scrutiny of the State Legislature. Further, 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 Companies Act, 1956.

4.1.23 The administrative departments have the responsibility to oversee the activities of these entities and to ensure that the accounts are finalized and adopted by these PSUs within the prescribed period. Though the concerned administrative departments and officials of the Government were informed regularly of the arrears in finalization of accounts, no significant remedial measures were taken. As a result of this the net worth of these PSUs could not be assessed in audit. The position of arrears of accounts of the PSUs was also appraised by the Principal Accountant General in April 2010 to the Chief Secretary / Principal Secretary, Finance Department and requested to expedite the backlog of arrears of account in a time bound manner.

4.1.24 In view of the above state of arrears, the Government may impress upon the respective PSUs to expedite the process of finalization of accounts and bring them up to date at the earliest.

Accounts Comments and Internal Audit

4.1.25 As of 30 September 2010 five Companies forwarded their nine audited accounts to PAG during the year 2009-10. Of these, seven accounts of four companies were selected for supplementary audit. In respect of JHALCO, the Company had forwarded its two accounts for the year 2007-08 and 2008-09, of which, a non-review certificate for the year 2007-08 was issued. The audit of accounts for the year 2008-09 was in progress. The audit reports of statutory auditors appointed by CAG and the supplementary audit of CAG indicate that the quality of maintenance of accounts needs to be improved substantially. The details of aggregate money value of comments of CAG are given below.

(₹ in crore)

Sl. No.	Particulars	2008-09		2009-10	
		No. of accounts	Amount	No. of accounts	Amount
1.	Decrease in profit	1	0.37	2	0.74
2.	Increase in loss	3	3.13	1	0.03
3.	Non-disclosure of material facts	-	-	2	-

(The aggregate money value are based on CAG's comments only)

4.1.26 During the year 2009-10, eight accounts of five PSUs were finalised. Out of which, the statutory auditors had given unqualified certificates for one accounts and qualified certificate for seven accounts. The compliance of companies with the Accounting Standards remained poor as there were two instances of non-compliance in two accounts during the year.

4.1.27 Some of the important comments in respect of accounts of companies are stated below.

Jharkhand State Forest Development Corporation Limited (2008-09) and (2007-08)

- No provision for the amount of collection cost and khaliyan expenses as operational expenses of kendu leaves payable to kendu leaves pluckers has been made in the accounts, though valuation of closing stock of kendu leaves was inclusive of collection cost and khaliyan expenses. This resulted in understatement of Operational expenses as well as Current liabilities & provisions and overstatement of Inventories as well as profit by ₹ 13.17 lakh.
- Provision for gratuity and leave encashment had not been made in the accounts after actuarial assessment of liability contravening the provisions of Accounting Standard 15.
- Non provision of stock of kendu leaves destroyed by fire and rain which is required to be made till it is written off has resulted in understatement of provision and overstatement of closing stock by ₹ 35.30 lakh. Consequently, the net profit is also overstated to that extent.
- The accounts for the year ended 31 March 2007 have not been adopted in the Annual General Meeting as required under section 166 read with section 210 of the Companies Act 1956. Further, the Statutory Auditor has also not mentioned in his report that the previous year's accounts have not been placed before the Annual General Meeting.

Jharkhand Police Housing Corporation Limited (2008-09)

- Tax on declared dividend for the financial year 2002-2003 and 2003-04 (assessment year 2003-04 and 2004-05) amounting to ₹ 2.48 lakh and ₹ 2.56 lakh respectively has not been deposited with the appropriate authority, as required by sec115-O of the Income Tax Act, 1961.
- Dividend payable for the financial year 2002-2003 and 2003-04 amounting to ₹ 19.80 lakh and ₹ 20 lakh respectively had neither been paid nor transferred to a special bank account named as unpaid Dividend A/c with any scheduled bank, as required by sec. 205A(8) of the Companies Act, 1956.

Jharkhand State Mineral Development Corporation Limited (2004-05)

- The Assets & Liabilities of the undivided Bihar State Mineral Development Corporation Ltd (BSMDC Ltd) were divided on 17 July 2009 between the successor Companies in the ratio of 24.33 *per cent* (Bihar) and 75.67 *per cent* (Jharkhand) of net assets based on the financial statement as on 31 March 2002 of BSMDC Ltd, with effect from the date of establishment of Jharkhand State Mineral Development Corporation Ltd (JSMDC Ltd) i.e. 7 May 2002. Accordingly, JSMDC Ltd had made payment of ₹ 8.90 crore to BSMDC Ltd on 24 September 2009. This significant and material event occurring after balance sheet date requiring disclosure as per Accounting Standard - 4 had not been reported.

4.1.28 JSEB, a statutory corporation has also forwarded their six accounts for the period 2001-02 to 2006-07 (including revised accounts of 2001-02) for sole audit by CAG. The audit of revised accounts for 2001-02 was completed and audit of remaining accounts wer being conducted. The audit report of the

sole audit of CAG indicates that the quality of maintenance of accounts needs to be improved substantially. The details of aggregate money value of comments of CAG are given below.

(₹ in crore)

Sl. No.	Particulars	2009-10	
		No. of accounts	Amount
1.	Decrease in profit	-	-
2.	Increase in loss	1	8.50
3.	Non-disclosure of material facts	1	-
4.	Errors of classification	1	-
Total		**1**	**8.50**

(The aggregate money value are based on CAG's comments only)

4.1.29 Some of the important comments in respect of accounts of statutory corporation are stated below.

Jharkhand State Electricity Board (2001-02)

- As per the guidelines of Government of India (GoI), a sum of ₹ 2,343.00 crore had to be accounted towards fixed assets, investments and current assets (excluding loans and advances to staff and the amount recoverable from employees). But the Board had accounted a total sum of ₹ 2,284.80 crore towards assets including the assets not distributed by the Ministry of Power, Government of India. This resulted in understatement of assets by ₹ 58.20 crore.
- As per the guidelines of GoI, a sum of ₹ 2,583.88 crore had to be accounted for by the Board towards current liabilities (excluding staff related liabilities and electricity duty and other levies payable to Government) and capital liabilities (excluding State Government loans). But the Board accounted a sum of ₹ 1,552.45 crore towards liabilities including the liabilities not distributed by the Ministry of Power, GoI. This resulted in understatement of liabilities by ₹ 1,031.43 crore.
- Sundry receivables included ₹ 0.86 crore and ₹ 1.55 crore towards cost of water sold to M/s Bihar Aluminium Steel Alloy Limited (now liquidated) and Central Coalfields Limited respectively. Non-creation of provision for doubtful receivables resulted in understatement of provision and overstatement of receivables.
- A sum of ₹ 0.84 crore and ₹ 1.67 crore have been shown as 'assets not in use' in SRHP and PTPS respectively for which details were not available with the units which had resulted in overstatement of assets. Further, two VENTRA locomotives valued at ₹ 0.90 crore lying at PTPS were out of use due to fire hazards therein since June 1998 / March 2000 had not been transferred to this head.
- Loans and advances included an amount of ₹ 4.16 crore on account of pay revision advance which had required to be debited against existing liability instead of showing as advance. Misclassification resulted in overstatement of loans & advances and staff related liability each to that extent.
- Sundry receivables included a sum of ₹ 4.64 crore shown as receivable from railway for missing coal wagons, but non-reversal of missing wagon

claims when these wagons were received subsequently resulted in overstatement of receivables to the extent of ₹ 2.34 crore.

- Loans and advances included liability of ₹ 38.97 crore and also advance of ₹ 28.83 crore against I.O.C with respect to P.T.P.S., Patratu. Due to non-adjustment of advance against supply made, other current liabilities and loans & advances was both overstated to the extent of ₹ 28.83 crore.
- Interest and finance charges included interest on GPF calculated @ 9.5 *per cent* on the opening balance only and interest at the applicable rate was not provided which worked out to ₹ 4.99 crore. This resulted in understatement of interest of ₹ 4.99 crore and finance charges and staff related liabilities to that extent.
- State Government loans had not been considered for compilation of interest and finance charges as the same were not distributed by MOP. This fact was needed to be disclosed in Notes on Accounts.

4.1.30 The Statutory Auditors (Chartered Accountants) are required to furnish a detailed report upon various aspects including internal control / internal audit systems in the companies audited in accordance with the directions issued by the CAG to them under Section 619(3) (a) of the Companies Act, 1956 and to identify areas which needed improvement. An illustrative resume of major comments made by the Statutory Auditors on possible improvement in the internal audit/ internal control system in respect of three companies[9] on the accounts finalised during the year 2009-10 are given below.

Sl. No.	Nature of comments made by Statutory Auditors	Number of companies where recommendations were made	Reference to serial number of the companies as per Appendix 2
1.	Absence of internal audit system commensurate with the nature and size of business of the company	02	A-01, A-03
2.	Non maintenance of proper records showing full particulars including quantitative details, situations, identity number, date of acquisitions, depreciated value of fixed assets and their locations	01	A-02

Recoveries at the instance of audit

4.1.31 During the course of propriety audit in 2009-10, recoveries of ₹ 3.33 crore were pointed out to the management of various PSUs/Corporation, of which, no recovery for the same were affected by PSUs/Corporation so far.

Disinvestment, Privatisation and Restructuring of PSUs

4.1.32 No PSU is under disinvestment, privatisation and restructuring in the State.

[9] Sl. No. A-01, A-02 & A-03 in Appendix–2.

Reforms in Power Sector

4.1.33 The State has Jharkhand Electricity Regulatory Commission (Commission) formed in April 2003 under Section 82 of the Electricity Act, 2003 with the objective of rationalisation of electricity tariff, advising in matters relating to electricity generation, transmission and distribution in the State and issue of licenses. During 2009-10, JERC did not issue any order on annual revenue requirements but issued 12 other orders.

4.1.34 Memorandum of Understanding (MoU) was signed in April 2001 between the Union Ministry of Power and the State Government as a joint commitment for implementation of reforms programme in power sector with identified milestones. The progress achieved so far in respect of important milestones is stated below.

Sl. No.	Milestone		Achievement
1.	100 *per cent* reduction of T&D losses		62.84 *per cent* (2009-10)
2.	100 *per cent* metering of all consumers	Single Phase (Urban)	88.66 *per cent* upto March 2010.
		Three Phase (LTCT & whole current)	96.89 *per cent* upto March 2010.
		HT	98.08 *per cent* upto March 2010

Section 'A' Performance Review

4.2 Power Generating Undertakings in Jharkhand

Introduction

4.2.1 Power is an essential requirement for all facets of life and has been recognised as a basic human need. The availability of reliable and quality power at competitive rates is very crucial to sustain growth of all sectors of the economy. The Electricity Act 2003 provides a framework conducive to the development of the Power Sector, promote transparency and competition and protect the interest of the consumers. In compliance with Section 3 of the *ibid* Act, the Government of India (GOI) prepared the National Electricity Policy (NEP) in February 2005 in consultation with the State Governments and Central Electricity Authority (CEA) for development of the Power Sector based on optimal utilisation of resources like coal, gas, nuclear material, hydro and renewable sources of energy. The Policy aims at, *inter alia*, laying guidelines for accelerated development of the Power Sector. It also requires CEA to frame National Electricity Plan once in five years. The Plan would be short term framework of five years and give a 15 years' perspective.

Average electricity requirement in Jharkhand in 2005-06 was 5,344 Million Units (MUs) of which only 2,065 MUs were generated leaving a shortfall of 3,279 MUs, which works out to 61.36 *per cent* of the requirement. Similarly, the electricity requirement in 2009-10 was 6,833 MU against which the energy actually available from generation was 2,945 MU, the shortfall being 3,888 MU *i.e.*, 56.9 *per cent* of the requirement. The total installed power generation capacity in the State was 1,390 Mega Watt (MW) (derated capacity 1,320 MW) in 2005-06 which remained the same at the end of 2009-10.

In Jharkhand, generation of power is carried out by Jharkhand State Electricity Board (JSEB), created in March 2001 as a result of Bihar Reorganisation Act, 2000 and by Tenughat Vidyut Nigam Limited (TVNL), a wholly owned Company incorporated on 26 November 1987 under the Companies Act, 1956 under the administrative control of the Energy Department of the Government of Jharkhand. The Management of JSEB is vested with a Board comprising of four members including the Chairman, Member (Finance) appointed by the State Government. The day-to-day operations in JSEB are carried out by the Chairman, who is the Chief Executive of the JSEB, with the assistance of General Manager-cum-Chief Engineer heading the Thermal Power Station at Patratu, (PTPS)(770 MW) and Project Manager heading the Swarnarekha Hydel Power Station (SRHP) at Sikidiri (130 MW).

The Management of TVNL is vested with a Board of Directors comprising five members including the Chairman appointed by the State Government. The day-to-day operations in TVNL are carried out by the Managing Director, with the assistance of General Manager who heads the Station at Lalpania. The installed capacity of TVNL is 420 MW.

The revenue from sale of power generated in its power stations by JSEB in 2009-10 was ₹ 196.26 crore while it was ₹ 377.73 crore in TVNL. Number of

employees in PTPS and in SRHP in March 2010 was 1,486 and 148 respectively. In TVNL, the manpower was 651.

Scope and Methodology of Audit

4.2.2 The present review conducted during February 2010 to April 2010 covers the performance of the power generation in JSEB and TVNL during the period from 2005-06 to 2009-10. All the three power generating stations in the State were selected for the review. The review mainly deals with Planning, Project Management, Financial Management, Operational Performance, Environmental Issues and Monitoring by Top Management. The audit examination involved scrutiny of records at the head office of JSEB, its thermal power station at Patratu and hydel power station at Sikidiri; at the head office of TVNL and its thermal power station at Lalpania.

The methodology adopted for attaining the audit objectives with reference to audit criteria consisted of explaining audit objectives to top management, scrutiny of records at Head Office and selected units, interaction with the auditee personnel, analysis of data with reference to audit criteria, raising of audit queries, discussion of audit findings with the Management and issue of draft review to the Management for comments.

Audit Objectives

4.2.3 The objectives of the performance audit were:

Planning and Project Management

- To assess whether capacity addition programme taken up / to be taken up to meet the shortage of power in the State is in line with the National Policy of Power for All by 2012;
- To assess whether a plan of action is in place for optimisation of generation from the existing capacity;
- To ascertain whether the contracts were awarded with due regard to economy and in transparent manner; and
- To ascertain whether the execution of projects were managed economically, effectively and efficiently.

Financial Management

- To assess whether all claims including energy bills and subsidy claims were properly raised and recovered in an efficient manner; and
- To assess the soundness of financial health of the generating undertakings.

Operational Performance

- To assess whether the power plants were operated efficiently and preventive maintenance as prescribed was carried out minimising the forced outages;
- To assess whether requirements of each category of fuel worked out realistically, procured economically and utilised efficiently;

- To assess whether the manpower requirement was realistic and its utilisation was optimal; and
- To assess whether the life extension (renovation and modernisation) programme were ascertained and carried out in an economic, effective and efficient manner.

Environmental Issues

- To assess whether the various types of pollutants (air, water, noise, hazardous waste) in power stations were within the prescribed norms and complied with the required statutory requirements; and
- To assess the adequacy of waste management system and its implementation.

Monitoring and Evaluation

- To ascertain whether adequate MIS existed in the entity to monitor and assess the impact and utilise the feedback for preparation of future schemes.

Audit criteria

4.2.4 The audit criteria adopted for assessing the achievement of the audit objectives were:

- National Electricity Plan, norms / guidelines of Central Electricity Authority (CEA) regarding planning and implementation of the projects;
- standard procedures for award of contract with reference to principles of economy, efficiency and effectiveness;
- targets fixed for generation of power ;
- parameters fixed for plant availability, Plant Load Factor (PLF) etc;
- performance of best achievers in the regions / all India averages;
- prescribed norms for planned outages; and
- Acts relating to Environmental laws.

Financial Position and Working Results

4.2.5 The financial position of TVNL for the years ending 2005-06 to 2009-10, given below is provisional.

(₹ in crore)

Particulars	2005-06	2006-07	2007-08	2008-09	2009-10
A. Liabilities					
Paid up Capital	105.00	105.00	105.00	105.00	105.00
Borrowings (Loan Funds)					
Secured					
Unsecured	1870.91	1964.79	2051.50	2138.21	2224.92
Current Liabilities & Provisions	298.84	462.14	735.80	1030.90	1484.96
Total	**2274.75**	**2531.93**	**2892.30**	**3274.11**	**3814.88**
B. Assets					
Gross Block	1310.33	1317.77	1350.26	1351.90	1360.75
Less: Depreciation	389.02	432.85	477.01	522.26	567.54
Net Fixed Assets	921.31	884.93	873.24	829.64	793.21
Capital works-in-progress	66.52	82.53	90.55	92.67	102.29
Investments	28.04	73.75	143.90	169.34	177.91
Current Assets, Loans and Advances	904.58	1155.34	1408.21	1790.51	2247.59
Accumulated losses	354.30	335.38	376.40	391.95	493.88
Total	**2274.75**	**2531.93**	**2892.30**	**3274.11**	**3814.88**

We observed that TVNL had investments of ₹ 177.91 crore in fixed deposits as at the end of the year 2009-10 which should have been utilised for gainful purposes. Had the Current Assets, Loans and advances, major portion of which comprised the dues arising from unpaid energy bills of JSEB and BSEB (₹ 1,910.05 crore in 2009-10), been realised, the same could have been utilised for capacity addition. Also, Capital works-in-progress of ₹ 102.29 crore represented the amount spent on railway siding (MGR) remaining under construction since the year 1988; delay in completion of which deprived the company of the benefit of the substantial capital expenditure for a long period.

JSERC allowed return on equity (ROE) (₹ 105 crore) at 14 *per cent* during the period of review. However, ROE upto 30 *per cent* of the project cost was admissible. Accordingly, 30 *per cent* of project cost worked out to ₹ 406.70 crore upto which ROE could have been allowed. TVNL proposed to raise its equity capital to ₹ 1,100 crore by converting the outstanding loan of ₹ 608.90 crore and part of accumulated interest of ₹ 949.52 crore. The Board of TVNL amended the Memorandum of Association and Articles of Association after incorporating the change in the capital clause and fee of ₹ 1.58 crore had been paid (January 2006) to the Registrar of Companies for increase in authorised capital to ₹ 1,100 crore in January 2006. Though over 4 years have elapsed, approval of the Government has not yet been received. As such the matter remained pending for abnormally long time leading to recurring loss to the Company which should have been avoided if expeditious action had been taken by the GOJ. Thus, due to under capitalisation, additional revenue of ₹ 199.94[10] crore was not available to TVNL which, if available, could have been utilised for capacity addition.

4.2.6 The accounts of JSEB for the years 2002-03 to 2009-10 have not yet been finalised/audited. In the absence of certified accounts, we are unable to comment on the financial position of the Board. Effective control and decision making by the JSEB management was also not feasible in absence of authentic financial position.

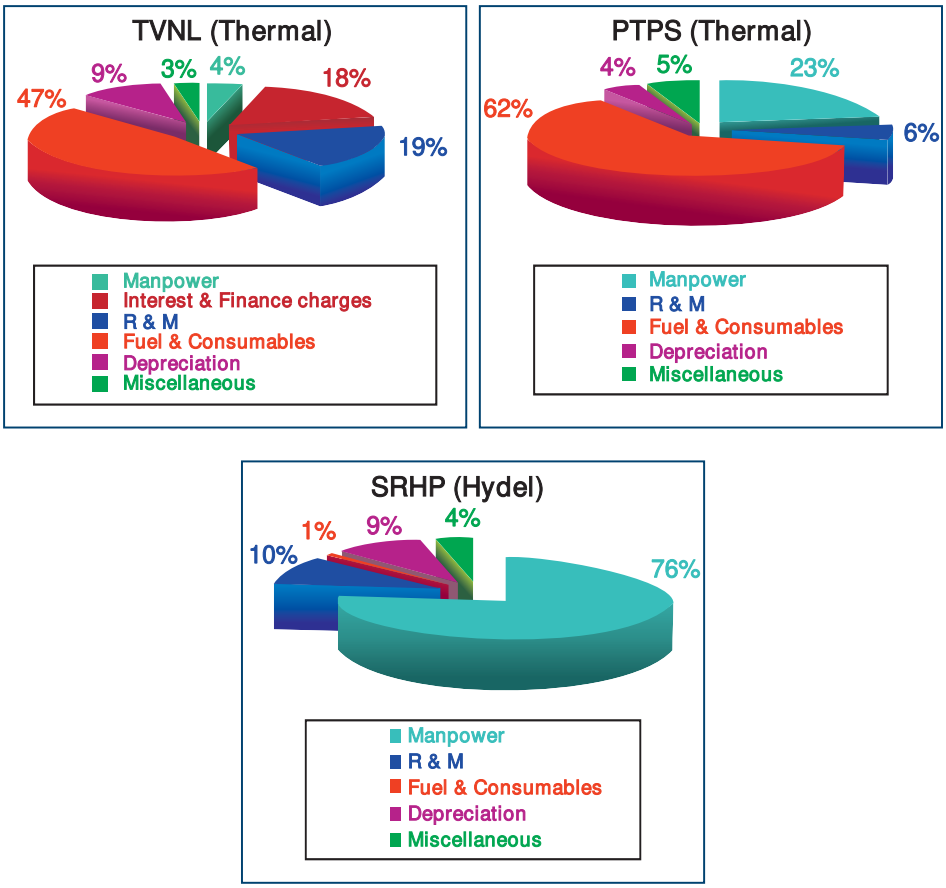
[10] ₹ 284.69 crore {₹ 56.94 crore (14 per cent of ₹ 406.70 crore) x 5}- ₹ 84.75 crore actually allowed by JSERC.

4.2.7 The details of working results of PTPS, SRHP and TVNL like cost of generation of electricity, revenue realization, net surplus/loss and earnings and cost per unit of operation are given in ***Appendix-4.6.*** Since the Board is undertaking transmission and distribution of power also, the figures pertaining to generation activity exclusively were not available with the Board. Therefore, the revenue realisation from sale of power to consumers has been taken as generation revenue.

Elements of Cost

4.2.8 The percentage break-up of costs for TVNL, PTPS and SRHP for the year 2009-10 is given below in the pie-chart.

Components of various elements of cost



In TVNL, Fuel & Consumables, Repair & Maintenance and Depreciation together accounted for 75 *per cent* of total cost and thus constituted major element of cost. The interest and finance charges were 18 *per cent* which was also high. As loans of TVNL were from Government of Bihar and Jharkhand on which interest was not being paid by TVNL, there was no cash outflow for payment of interest on these loans.

In PTPS, Fuel & Consumables constituted 62 *per cent* of total cost being major element of cost which was relatively high as compared to the cost of

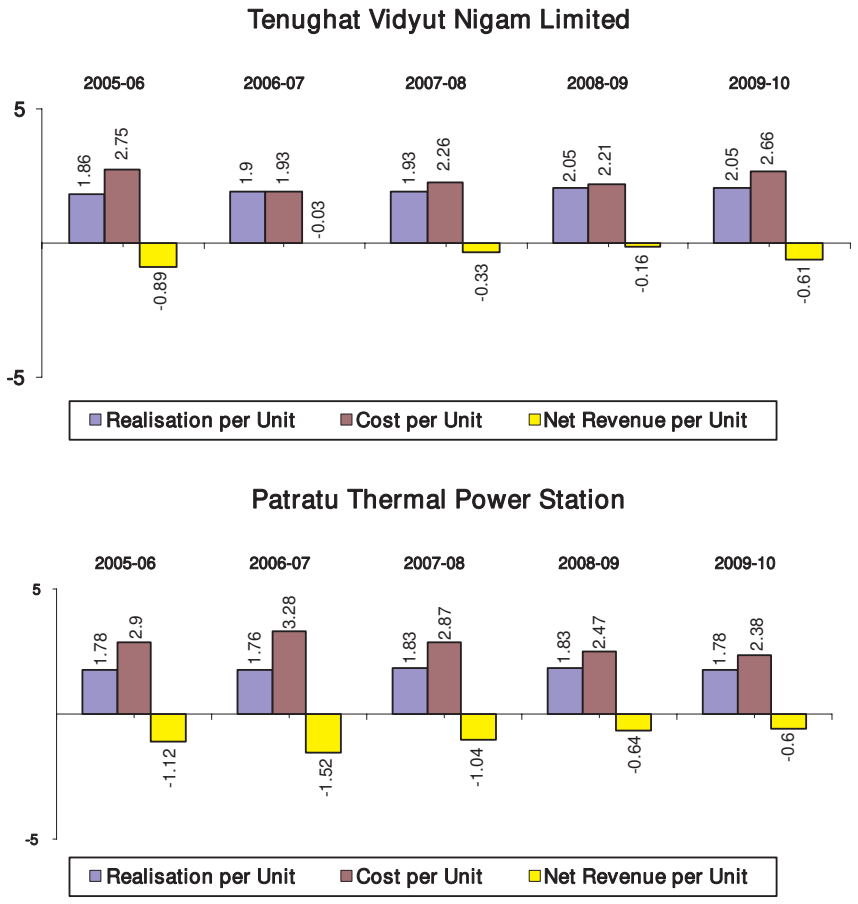
fuel & consumables of TVNL *i.e.,* 47 *per cent,* the other power generating undertaking in the State.

Elements of revenue

4.2.9 Sale of power constitutes the major element of revenue of TVNL which was 97 *per cent* of the total revenue.

Recovery of cost of operations

4.2.10 TVNL as well as PTPS were not able to recover its cost of operations. During the last five years ending 2009-10, the net revenue was as shown in the graph below:



Had the total revenue earned by TVNL and PTPS been sufficient to cover the cost, an additional amount of ₹ 321.26 crore and ₹ 338.1 crore respectively could have been available for capacity addition / life extension programmes. The main reasons for high cost of generation had been poor maintenance of the old and outlived plants, low plant availability, poor capacity utilisation, high level of auxiliary consumption *etc.*

Audit Findings

4.2.11 Audit explained the audit objectives to the JSEB and TVNL during an 'entry conference' held on 9 March 2010. The audit findings were reported to the Principal Secretary, Energy Department, GOJ as well as management of JSEB and TVNL on 7 July 2010. The audit findings were discussed with the Principal Secretary, Energy Department, GOJ in the 'exit conference' held on 7 October 2010. The views of the Management have been taken into consideration during finalisation of the performance audit review.

The results emerging from performance audit are discussed in the succeeding paragraphs.

Operational Performance

4.2.12 The operational performance of JSEB/TVNL for the five years ending 2009-10 is given in the ***Appendices-4.7 & 4.8.*** The operational performance of JSEB/TVNL was evaluated on various operational parameters as described below. It was also seen whether JSEB/TVNL was able to maintain pace in terms of capacity addition with the growing demand for power in the State.

Audit findings in this regard are discussed in the subsequent paragraphs. These audit findings show that the losses were controllable and there was scope for improvement in performance.

Planning

4.2.13 National Electricity Policy aims to provide availability of over 1,000 Units of per capita electricity by 2012, for which it was estimated that need based capacity addition of more than 1,00,000 MW would be required during 2002-2012 in the country. The Government has laid emphasis on the full development of hydro potential being cheaper source of energy as compared to thermal. The power availability scenario in the state indicating own generation, purchase of power, peak demand and net deficit was as under:

During the period 2005-10, the actual generation in the state was substantially less than the peak as well as average demand as shown below:

Year	Generation (MW)	Peak Demand (MW)	Average Demand (MW)	Percentage of actual generation to Peak Demand	Percentage of actual generation to Average Demand
2005-06	236	706	610	33	39
2006-07	355	751	660	47	54
2007-08	275	847	720	32	38
2008-09	360	859	740	42	49
2009-10	336	897	780	37	43

As may be seen from the above, the actual generation ranged between only 38 *per cent to 54 per cent* of the average demand and 32 to 47 *per cent* of the peak demand.

However, the total supply even after import was not sufficient to meet the peak demand, as shown below.

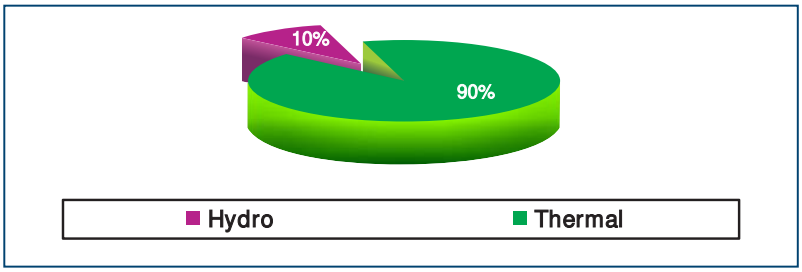
Year	Peak Demand (MW)	Peak Demand met (MW)	Sources of meeting peak demand (MW)		Peak Deficit (Percentage of Peak Demand)
			Own	Import	
2005-06	706	696	236	460	1.5
2006-07	751	723	355	368	4.0
2007-08	847	753	275	478	11.0
2008-09	859	856	360	496	0.5
2009-10	897	842	336	506	6.0

There remained a shortfall of 3 MW to 94 MW (about 0.5 *per cent* to 11 *per cent* of the peak demand) even after import. It was observed that during 2005-06 to 2009-10, though the Board incurred expenditure of ₹ 202.54 crore as Unscheduled Interchange (UI) charges during 2005-06 to 2009-10, still there was peak deficit in the State. Consequently, rotational load shedding was forced on the populace.

This section deals with capacity additions and optimal utilisation of existing facilities. Environmental aspects have been discussed in subsequent paragraphs at later stage.

Capacity Additions

4.2.14 The State had total installed capacity of 1,320 MW at the beginning of 2005-06 which remained the same at the end of 2009-10. The break up of generating capacities, as on 31 March 2010, under thermal and hydro is shown in the pie chart below.



We observed that against energy requirement of 780 MW in the State during 2009-10, the actual generation in the State was 336 MW. Despite acute shortage of power, no project was either under construction or committed for capacity addition during the review period. However, six projects of 7,070 MW for which coal blocks were assigned in respect of three TPS each by JSEB and TVNL were at initial stage as discussed subsequently.

4.2.15 The particulars of the generation capacity, peak demand *vis-à-vis* energy supplied during review period are given below.

Sl.No	Description	2005-06	2006-07	2007-08	2008-09	2009-10
1.	Capacity at the beginning of the year (MW)	1320	1320	1320	1320	1320
2.	Peak demand (MUs)	6184.56	6578.76	7419.72	7524.84	7857.72
3.	Energy supplied (MUs)					
	a) Energy produced	2064.74	3111.48	2408.14	3152.60	2945.21
	b) Energy Purchased	4392.29	3879.58	5066.12	5039.56	4582.88
Total energy available for sale[11] (MU)		**6457.03**	**6991.06**	**7474.26**	**8192.16**	**7528.09**

[11] The figures do not take into account the Transmission and Distribution losses which were around 37 to 49 *per cent*.

4.2.16 To meet the demand for power in the state, GOJ proposed to set up three TPSs with 4,620 MW generation capacity through JSEB and three TPS units at Tenughat by TVNL with generation capacity of 2,450 MW. We observed that

- Thermal power station with installed capacity of 1,320 MW with the available infrastructure *i.e.*, land, water etc, at Patratu was proposed for which GOI had allotted (August 2006) a Coal Block at Banhardi to JSEB. Production from the coal block was to be started within 42 months in case of Open cast mining and in 54 months in case of Underground mining as per the allocation letter. However, Department of Mines and Geology, GOJ did not issue prospecting license due to non submission of documents e.g. land schedule, map of the coal block etc and application fee by JSEB. Subsequently, GOJ appointed (March 2010) PFC Consulting Ltd. (PFCCL) as consultant for selection of a JV partner for setting up the power project after 43 months from allotment of the coal block, at a fee of ₹ 21 crore. PFCCL had invited (26 April 2010) Expression of Interest and a pre-bid meeting was scheduled on 10 May 2010. The meeting was, however, not held till date (September 2010). Thus, JSEB had failed in adhering to the milestones fixed by the GOI which may result in deallocation of the coal block.

- JSEB proposed to set up a new TPS of 3x660 MW for which GOI allocated (July 2007) Urmapaharitola Coal Block jointly to JSEB & Bihar State Mineral Development Corporation (BSMDC). Accordingly, a Joint Venture Company viz. 'Jharbihar Colliery Limited' (JCL) between Jharkhand and Bihar was incorporated (June 2009). After one year, JCL issued (August 2010) work order to JINFRA Ltd for advisory services in selection of mine developer cum operator (MDO)/JV partner. In the meantime, MOC, GOI had issued (September 2009) show cause notice for de-allocating the coal block due to non adherence of the milestones as per terms of the allocation letter. The prospecting license had not yet been issued by the Department of Mines & Geology, GOJ due to non submission of map of coal block and other necessary maps, land schedule *etc*. Further, water for the new power plant was not yet allocated by GOJ due to which site selection for the plant could not be done and appointment of the consultant for land survey, preparation of feasibility report and JV partner for exploration of the coal block had been deferred. Thus, lapses on the part of JSEB and GOJ had resulted in delay in development of the coal block and in setting up of the power plant which may result in de-allocation of the Coal Block.

- JSEB formed a Special Purpose Vehicle (SPV), M/s Karanpura Energy Limited, for awarding the work of 2x660 MW greenfield thermal power project under the tariff based competitive bidding route within a time limit of two years from the date of allocation of coal block. Maurya Coal Block was allotted for the project by the Ministry of Power, GOI, in June 2009. The power generated from the end user power plant from this coal block had to be distributed to Jharkhand, Bihar and Uttar Pradesh in the ratio of 60:25:15. Power Finance Corporation (PFC) was appointed (February 2008) as consultant for selection of Developer(s) for the proposed thermal power project linked to Maurya Coal Block at a fee of ₹ 14 crore. PFC had

been paid ₹ 3.93 crore on issue of LOI/LOA. Mining lease for the Coal Block had not been obtained and site selection for the plant was yet to be made. Water Resource Department, GOJ had not yet allocated water for the power plant due to which selection of JV partner was not made. Further, non-allocation of water for the power project had virtually stalled the progress of development of the coal block and implementation of the power project which may result in deallocation of coal block.

- TVNL had planned to set up a TPS of 3x210 MW capacity for which Badam coal block was allotted by GOI (January 2003). TVNL appointed M/s Desein as consultant for the project, invited Global tender (2004) and finalised M/s Skoda Export Czech as the L-1 bidder. However, financial closure for the project was not reached as the GOJ did not furnish the Government guarantee for the proposed loan from PFC for financing the project. The tender was cancelled in May 2009 and the project was closed. Similarly, in another project of TVNL, Gondulpara Coal Block was allotted (January 2006) jointly with DVC for 3rd phase extension project of 1x500 MW. The Board of TVNL had approved (May 2009) the proposal for appointment of NTPC as consultant for conducting feasibility study, survey and preparation of DPR for the project which had not yet been approved by the GOJ. TVNL had formed a Joint Venture with EMTA for mining of Badam and Gondulpara coal blocks. Rajbar coal block was allotted (August 2006) for another 2x660 MW TPS. However, mining of these coal blocks had not started as forest clearances had not yet been obtained and land was not acquired. Thus, projects connected with Gondulpara and Rajbar coal blocks were at the initial stages of implementation.

We observed that the Coal Blocks allotted for establishment of the TPSs had not been developed as per milestones set by the GOI and hence allotment of the coal blocks may be cancelled by the GOI, jeopardising setting up of the proposed TPSs. Also, DPRs for the power projects had not been prepared and no progress had been made for implementation of the project. Thus, despite allotment of six coal blocks by the GOI for new power projects, no capacity addition for power generation in the State was achieved during the period of review.

Optimum Utilisation of existing facilities

None of the units due for R&M/LE Programme in the State was actually taken up due to non-availability of fund

4.2.17 In order to cope with the rising demand for power, not only the additional capacity need to be created as discussed above, a plan needs to be in place for optimal utilisation of existing facilities and also undertaking life extension programme/replacement of the existing facilities which have outlived their normal life or are near completion of their age besides timely repair/maintenance. The PTPS had 10 generating units and SRHP had two units. As per CEA norms Renovation and Modernisation (R&M)/Life Extension (LE) was to be taken up after 25 years or 1 lakh hours of operation of the plant.

We observed that the unit No. 1 to 9 of PTPS and two units of SRHP, established between 1966 to 1984, were about 26 to 44 years of age and fell due for R&M/LE long back from 1991-1997 (unit 1 to 6), 2002-2004 (unit 7 & 8), 2009 (unit 9) and 2002-2005 (unit 1 & 2 of SRHP) respectively. However, none of the units was actually taken up due to non-availability of

fund. This situation deserves immediate attention of top level management for corrective action in the matter.

Operational Performance

4.2.18 Operations of generating companies are dependent on input efficiency consisting of material and manpower and output efficiency in connection with Plant Load Factor, plant availability, capacity utilisation, outages and auxiliary consumption. These aspects have been discussed below.

Input Efficiency

Procedure for procurement of coal

4.2.19 The Central Electricity Authority (CEA) fixes power generation targets for TPSs considering capacity of plant, average plant load factor, and past performance. The Power Generating Company works out coal requirement on the basis of targets so fixed and past coal consumption trends. The coal requirement so assessed is conveyed to the Standing Linkage Committee (SLC) of the Ministry of Energy (MOE), Government of India, which decides the source and quantity of coal supply to TPSs on quarterly basis. On the basis of linkage source approved by SLC, the Power Generating Company enters into Coal Supply Agreement (CSA) with collieries.

4.2.20 On the basis of allocation, JSEB / TVNL was procuring coal from Central Coalfields Limited (CCL). However, no agreement stipulating the terms and conditions for supply of coal was entered into with CCL and coal was being procured on 'cash and carry' basis. As per the standard format of Fuel Supply agreement (FSA), full payment of the coal bills was to be made through Letter of Credit and to avoid this, Fuel Supply Agreement was not entered by TVNL. The reason for non entering into FSA by JSEB was misplacement of file relating to FSA for a long time which indicates lack of seriousness in entering into FSA.

4.2.21 The position of coal linkages fixed, coal received, generation targets prescribed and actual generation achieved during the period from 2005-06 to 2009-10 covering all the TPSs in the State was as under:

Particulars	2005-06	2006-07	2007-08	2008-09	2009-10	Total
Coal Linkage fixed (lakh MT)	34.41	40.80	32.70	34.20	43.80	185.91
Quantity of coal received (lakh MT)	20.71	36.84	19.42	31.02	28.64	136.63
Shortfall in quantity of coal received	13.70	3.96	13.28	3.18	15.16	49.28
Percentage of shortfall	39.81	9.71	40.61	9.30	34.61	26.51

It would be seen from the above that the total linkage of coal during the five years fixed by the SLC was 185.91 lakh MT for the State. Against this, only 136.63 lakh MT of coal was received, resulting in short receipt of 49.28 lakh MT (26.51 *per cent*) of coal. In absence of any agreement with the coal companies, the Management failed to procure allotted quantity of coal.

Further, various claims of PTPS and TVNL regarding quality and grade of coal, presence of foreign materials in coal supplied, weighment of coal etc. were not accepted by CCL. Such claims amounted to ₹ 4.57 crore and ₹ 17.25 crore in respect of PTPS and TVNL respectively as on 31 March 2010.

Transit loss in excess of norms

Allowing transit loss in excess of norms resulted into loss of 1.15 lakh MT of coal valuing ₹ 11.63 crore

4.2.22 As per CERC norms, 0.3 *per cent* transit loss for transportation of coal was to be allowed for pit head generating unit. TTPS, which was transporting coal by road, provided in the transport contract for transit loss of one *per cent* (up to January 2006), 0.8 *per cent* (February 2006 to October 2008) and 0.3 *per cent* (from November 2008). We observed that transit loss was allowed in excess of norms upto October 2008 in TTPS which resulted in loss of 22,284 MT of coal valuing ₹ 2.46 crore. In PTPS, where transportation of coal was done by rail, transit loss varied between 0.91 *per cent* and 3.13 *per cent* during the review period. Thus, 93,019.40 MT of coal valuing ₹ 9.17 crore was lost in transit in excess of norm during 2005-06 to 2009-10 in PTPS. The loss of 1.15 lakh MT of coal valuing ₹ 11.63 crore was controllable by the Management of JSEB/TVNL.

Quality of coal

4.2.23 Each thermal station is designed for usage of particular grade of coal. Usage of envisaged grade of coal ensures optimizing generation of power and economising cost of generation. We observed that the grade of coal received from collieries was not always of the specified grade required by the thermal stations and was either inferior or ungraded coal.

Excess expenditure of ₹ 169.21 crore was incurred due to payment for the higher grade of coal

TVNL plant was designed for 4200 Kcal/kg GCV coal of F grade. Coal received at TTPS during 2005-06 to 2009-10 was of E grade as per test report of laboratory conducted daily at TTPS. We observed that the grade of coal, determined on the basis of test of sample collected from colliery at the same laboratory of TTPS, were of higher grade in most cases for which TVNL had been paying. During 2005-06 to 2009-10, payments to CCL were made for 12.54 lakh MT of E grade coal, 6.57 lakh MT power coal and 56.45 lakh MT washery grade IV coal. Thus, excess expenditure of ₹ 169.21 crore had been incurred due to payment for the higher grade of coal. The plant management may take up steps to ensure supply of designated coal from CCL.

Loss of generation due to inadequate fuel stock

4.2.24 The minimum fuel stock fixed by TVNL was for 45 days which was not maintained at TVNL and it faced problems of shortage of fuel ***(Appendix- 4.9)***. We observed that the TPS of TVNL had to run at partial load during the year 2009-10 due to shortage of coal and non availability of coal in coal bunkers, resulting in loss of generation aggregating to 20.73 MU valued at ₹ 4.25 crore. This indicated defective planning in arranging supply/ availability of coal and poor monitoring in feeding coal to coal bunkers.

Consumption of fuel

Excess consumption of coal

4.2.25 The consumption of coal depends upon its calorific value. The norms fixed by JSERC for various power generation stations for production of one unit of power in the State *vis-à-vis* maximum and minimum consumption of coal during the period of five years ending 2009-2010 is depicted in the table below:

(in KGs)

Name of the Station	Norms fixed by JSERC	Average min consumption during the year	Average max consumption during the year
TVNL	0.577	0.655 (2007)	0.743 (2010)
PTPS	0.721	0.889 (2010)	0.960 (2006)

(Figures in brackets indicate the year in which the maximum/minimum consumption was obtained).

From the above, it may be seen that in PTPS and TTPS the consumption remained higher than the norms in all the years under review. This had resulted in excess consumption of coal in the TPSs as indicated in the tables below:

Sl.No.	Particulars	2005-06	2006-07	2007-08	2008-09	2009-10
1.	Unit generated (MUs)	2375.49	3329.78	2491.50	3236.86	3179.84
2.	Coal required as per norms (lakh MT)	14.07	19.48	15.98	20.84	20.53
3.	Coal consumed (lakh MT)	18.59	23.71	19.08	25.34	25.48
4.	Excess consumption (lakh MT) (3 – 2)	4.52	4.23	3.11	4.51	4.95
5.	Rate per MT (₹)(Average rate)	949.81	1003.62	1071.64	1109.16	1105.81
6.	Coal consumed per Unit (Kg.) [(3 x 1000) / 1]	0.783	0.712	0.766	0.783	0.801
7.	Value of excess coal (₹ in crore) (4 x 5)	42.93	42.43	33.28	49.99	54.77

Consumption of coal above the norms was 21.32 lakh MT valuing ₹ 223.40 crore

It may be observed from the above that consumption above the norms resulted in excess consumption of coal to the tune of 21.32 lakh MT valued at ₹ 223.40 crore.

The reasons for excess consumption, as analysed by us, were non functioning of high pressure heater since inception and unburnt coal in excess of norm as discussed below.

4.2.26 TTPS was designed for 2 *per cent* unburnt carbon in bottom ash and 0.5 *per cent* unburnt carbon in fly ash. Actual unburnt carbon in bottom ash during the period 2005-06 to 2009-10 ranged from 8.87 *per cent* to 10.83 *per cent* and unburnt carbon in fly ash from 3.74 *per cent* to 4.76 *per cent* resulting in 1.22 lakh MT excess unburnt carbon. This unburnt carbon generated from 3.06 lakh MT coal resulted in loss of ₹ 33.77 crore. PTPS was designed for 5 *per cent* unburnt bottom ash and one *per cent* unburnt fly ash. During 2006-07, unburnt bottom ash was 10.17 *per cent* and unburnt fly ash was 1.32 *per cent* leaving 3,044 MT unburnt carbon in excess of norms resulting in loss of ₹ 69.03 lakh. The reasons for excess unburnt carbon were low combustion due to poor operating condition of the plant.

Excess consumption of Secondary Oil

Excess oil consumption than norms resulted into expenditure of ₹ 110.49 crore

4.2.27 As per JSERC norms specific oil consumption was 2 ml/kwh for TVNL whereas for PTPS it ranged between 2 to 15.95 ml/kwh. However, the actual specific oil consumption ranged between 2.043 to 3.49 ml/kwh in TVNL and 9.15 to 25.86 ml/kwh in PTPS resulting in excess expenditure of ₹ 110.49 crore. Frequent tripping/ breakdown of the units at PTPS/TTPS and lighting up of the units resulted in excess oil consumption.

Manpower Management

4.2.28 The CEA had recommended 1.76 person per mega watt of the installed capacity for the year 2005-06 & 2006-07 and 1.58 people per MW for the years 2007-08 to 2009-10. The position of actual manpower, sanctioned strength & manpower as per CEA recommendation in JSEB and TVNL are given below:

Sl. No.	Particulars.	2005-06	2006-07	2007-08	2008-09	2009-10
PTPS						
1	Sanctioned strength	4053	4053	4053	4053	4053
2	Manpower as per the CEA recommendations	1356	1356	1217	1217	1217
3	Actual manpower	2008	1737	1567	1540	1459
4	Excess manpower	652	381	350	323	242
5	Expenditure on salaries (₹ in lakh)	4797.29	4996.70	4415.87	4604.45	4432.10
6	Extra expenditure with reference to CEA norms (₹ in lakh) [(4/3) x (3–2)]	1557.68	1095.99	986.31	965.74	428.83
TVNL						
1	Sanctioned strength	631	631	631	631	631
2	Manpower as per the CEA recommendations	739	739	667	667	667
3	Actual manpower	651	651	654	651	651
4	Expenditure on salaries (₹ in lakh)	1073	1268	1259	1546	1806

Actual manpower in PTPS was in excess over the norms of CEA resulting in expenditure of ₹ 50.35 crore

Above table shows that actual manpower in PTPS was in excess over the norms of CEA during the years 2005-06 to 2009-10 resulting in extra expenditure of ₹ 50.35 crore. However, the Board has been able to reduce its excess manpower from 652 to 242 during review period. Despite having excessive manpower, the generating stations were regularly employing temporary / contract staff for regular jobs such as housekeeping, cleaning of coal handling plant, cleaning of condenser etc. We further observed that:

- In technical category, TVNL had shortage of 210 employees and adequate technical manpower was not available for the crucial operations of the plant. Though there was surplus manpower of 276 to 285 in unskilled and other cadres, TVNL had engaged 524 workmen through contractor on regular jobs incurring expenditure of ₹ 24.31 crore during 2005-06 to 2009-10. Moreover, TVNL had engaged 32 to 46 engineers and 47 to 59 workmen on direct contract basis for which ₹ 3.96 crore had been paid as salary during the review period. No action was taken to rationalise its staff strength or to utilise them optimally.

One unit of PTPS could not be operated due to shortage of technical manpower

- In PTPS, 915 posts were vacant in technical cadres. Due to shortage of technical staff normal operation of the plant was being affected. In fact, one unit of PTPS, though available for generation, could not be operated during January 2010 to March 2010 due to inadequate manpower resulting in loss of generation of 54.42 MU of power valuing ₹ 9.69 crore.

Output Efficiency

Shortfall in generation

4.2.29 The targets for generation of power for each year are fixed by JSEB/TVNL and approved by the CEA. It was observed in Audit that the State was able to generate a total of 14,613 MU of power during 2005-06 to 2009-2010 against a target of 20,883 MU fixed. This resulted in a net shortfall of 6,270 MU as shown in the following table:

Unit No. 6 of Kota TPS of PRVUNL achieved 101.10 *per cent* which was highest among all the State sector units.
(*Source: Performance Review of Thermal Power Stations 2008-09 by CEA*).

Year	Target	Actual	Shortfall
2005-06	3960	2375	1585
2006-07	4848	3330	1518
2007-08	3580	2492	1088
2008-09	4110	3236	874
2009-10	4385	3180	1205
Total	20883	14613	6270

The year-wise details of energy to be generated as per design, actual generation, plant load factor (PLF) are as given in ***Appendix-4.10***.

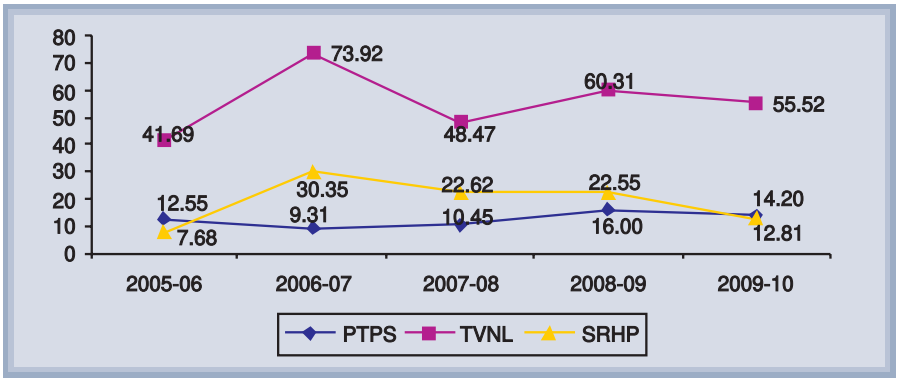
The details in the Appendix indicate that:

- The actual generation and actual PLF achieved were far below the energy to be generated and PLF as per design during all the five years upto 2009-2010.
- As against the total designed generation of 18,396 and 26,981 MU of energy by TVNL and PTPS during the five years ended 2009-2010, the actual generation was 10,311 and 4,302 MU leading to the shortfall of 8,085 and 22,679 MU respectively, which could have been technically produced.
- As the PLF had been designed considering the availability of inputs the above loss of generation (30,763.33 MU) during the period 2005-2006 to 2009-2010 indicated that resources and capacity were not being utilised to the optimum level due to design deficiencies, frequent breakdown of units and delay in timely rectification of defects as discussed in subsequent paragraphs.
- We observed that due to overloading of the transmission lines power generated at TVNL and PTPS could not be evacuated in full and generation was to be backed down. As a result TVNL had suffered generation loss of 244.06 MU involving revenue of ₹ 46.85 crore and PTPS had suffered loss of generation of 77.287 MU involving revenue of ₹ 13.67 crore.

Low Plant Load Factor (PLF)

4.2.30 Plant load factor (PLF) refers to the ratio between the actual generation and the maximum possible generation at installed capacity. According to norms fixed by Central Electricity Regulatory Commission (CERC), the PLF for thermal power generating stations should be 80 *per cent*, against which the

national average was 73.71 *per cent*, 77.03 *per cent*, 78.75 *per cent*, 77.22 *per cent and 77 per cent* during 2005-06 to 2009-10 respectively. Line graph depicting the PLF of PTPS, TVNL and SRHP over the review period have been indicated below.



The details of average realisation *vis-à-vis* average cost per unit, PLF achieved, average realisation at national PLF, PLF at which average cost would be recovered and the difference of PLF in *per cent* are given in the following table:

S.No.	Description	2005-06	2006-07	2007-08	2008-09	2009-10
PTPS						
1.	Average Realisation (Paise per Unit)	178	176	183	183	178
2.	Average Cost (Paise per Unit)	290	328	287	247	213
3.	Actual PLF (Per cent)	12.55	9.31	10.45	16.00	14.20
4.	Average Realisation at National PLF (Paise per Unit)	49.38	39.64	38.08	51.18	39.28
5.	PLF at which average cost stands recovered (*Per cent*) (2/1 X 3)	20.45	17.35	16.39	21.60	16.99
6.	Difference (*Per cent*) (5– 3)	7.90	8.04	5.94	5.60	2.79
TVNL						
1.	Average Realisation (Paise per Unit)	185.66	190	193.09	205	205
2.	Average Cost (Paise per Unit)	275	193	226	2210	266
3.	Actual PLF (Per cent)	41.69	73.92	48.47	60.31	55.52
4.	Average Realisation at National PLF (Paise per Unit)	155.54	185.21	139. 10	172. 60	191.80
5.	PLF at which average cost stands recovered (*Per cent*) (2/1 X 3)	61.75	75.09	56.73	65.02	72.04
6.	Difference (*Per cent*) (5– 3)	20.06	1.17	8.26	4.71	16.52

The estimated shortfall in generation works out to 3,806.28 MU and 21,579.72 MU as compared to national PLF in case of TVNL and PTPS respectively during 2005-06 to 2009-10 resulting in loss of contribution amounting to ₹ 945.84 crore and ₹ 3,876.08 crore respectively.

4.2.31 The main reasons for the low PLF, as observed in audit were low plant availability, low capacity utilisation and major shut downs and delays in repairs and maintenance. These are discussed in the following paragraphs.

Low plant availability

4.2.32 Plant availability means the ratio of actual hours operated to maximum possible hours available during certain period. As against the CERC norm of 80 *per cent* plant availability during 2004-2009 and 85 *per cent* during

2009-10, the average plant availability of power stations of TTPS and PTPS was 62.6 *per cent* and 22.91 *per cent* respectively during the five years up to 2009-10.

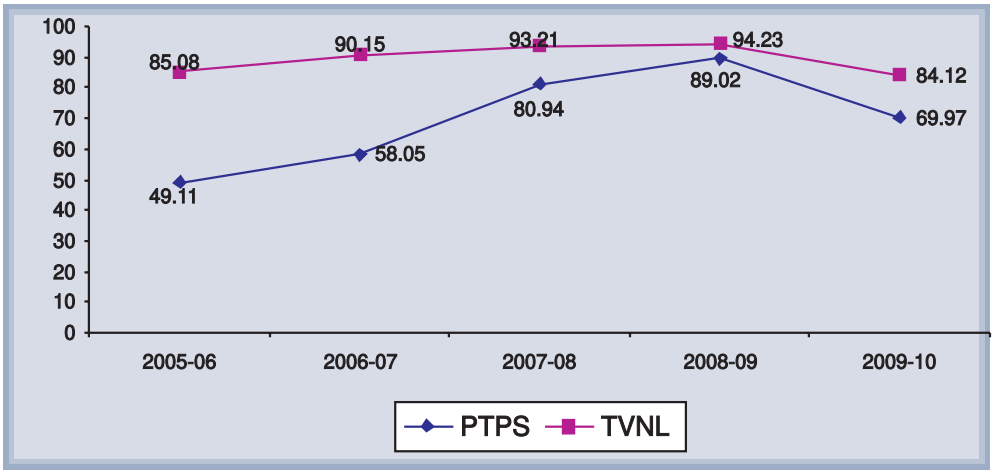
The details of total hours available, total hours operated, planned outages, forced outages and overall plant availability are shown below:

S.No.	Particulars	2005-06	2006-07	2007-08	2008-09	2009-10
TVNL						
1.	Total hours available	17520	17520	17520	17520	17520
2.	Operated hours	8607	14406	9138	11245	11526
3.	Planned outages (in hours)	Nil	Nil	Nil	Nil	Nil
4.	Forced outages (in hours)	8912	3078	6222	6275	5994
5.	Plant availability (*per cent*)	49	82	52	64	66
PTPS						
1.	Total hours available	87600	87600	87840	87600	87600
2.	Operated hours	20456	14817	16153	23395	25578
3.	Planned outages (in hours)	747	669	573	2143	1607
4.	Forced outages (in hours)	66397 (75.80)	72114 (82.32)	71114 (80.96)	62062 (70.85)	60415 (68.97)
5.	Plant availability (*per cent*)	23.35	16.91	18.39	26.71	29.20

The low availability of Power plants was due to longer duration of outages caused by inordinate delays in repair and maintenance. In TVNL there were no planned outages and preventive maintenance was not done. Also, planned outages taken in PTPS were very less ranging between 0.65 to 2.45 *per cent* against 10 *per cent* allowed by CEA. Consequently, number of trippings in the TPSs was very high. During the years 2005-06 to 2009-10, 367 trippings occurred in the plant and 13,170 hours were spent on the maintenance resulting in production loss of 1,939.16 MU. This could have been substantially controlled had the preventive maintenance of the plant been done. Besides, capital maintenance had also not been planned and administrative formalities like obtaining approval and placement of order were done keeping the plant idle which if previously planned could have reduced the period of capital maintenance.

Low Capacity Utilisation

4.2.33 Capacity utilisation means the ratio of actual generation to possible generation during actual hours of operation. The audit analysis revealed that 30.03 *per cent* and *15.88 per cent* of the installed capacity in PTPS and TVNL respectively remained unutilised.



The main reasons for the low utilisation of available capacity during 2005-10, as analysed in audit were:-

- Running of units with partial load / without load;
- Reduced capacity of old generating unit; and
- Constraints on transmission capacity

Outages

Forced outages in excess of norms resulted into loss of 3.16 lakh hours with consequent generation of 30,884 MU valuing ₹ 5600 crore

4.2.34 Outages refer to the period for which the plant remained closed for attending planned/forced maintenance. Audit observed following deficiencies in planned and forced outages:

- CEA had allowed 10 *per cent* outages for maintenance and repair of the plants. We observed, that most of the outages occurred in PTPS and TVNL were not planned outages and capital maintenance was carried out during the forced outages consuming unduly high time in capital maintenance. There was no system of preventive maintenance in PTPS and only breakdown maintenance was being done. The forced outages were due to bending of rotor, tube leakage, low pressure in boiler, flashing in breaker, heavy electrical jerk, flame failure, very high and low drum level *etc.* The forced outages in TVNL ranged between 17.57 to 50.87 *per cent* and in PTPS the same was 68.97 to 82.32 *per cent.*
- Had the forced outages in TVNL kept within the CEA norm availability of the plant for generation would have increased for additional 21,721 hours with consequent generation of 2,936.49 MU valuing ₹ 575.19 crore during 2005-06 to 2009-10.
- Similarly, in PTPS the availability of plant would have increased for additional 2.94 lakh hours with consequent generation of 27,947.43 MU valuing ₹ 5,024.92 crore during 2005-06 to 2009-10.

Auxiliary consumption of power

4.2.35 Energy consumed by power stations themselves for running their equipments and common services is called Auxiliary Consumption. JSERC norm for Auxiliary Consumption was 9 *per cent* in respect of TVNL. As the power stations of PTPS were old and outlived their normal life, JSERC had

Auxiliary consumption in excess of norms resulted into non-dispatch of 396.24 MU of energy valuing ₹ 73.58 crore to the grid

allowed higher norms of Auxiliary Consumption for PTPS which were 9 *per cent* for 2005-06 and 2006-07, 10.55 *per cent* for 2007-08 and 10.50 for 2008-09 and 2009-10.

- The actual auxiliary consumption of TVNL was 8.66 *per cent* to 14.67 *per cent* during 2005-06 to 2009-10. Auxiliary consumption in excess of norm was by 233.47 MU valuing ₹ 44.45 crore.
- In PTPS, the actual auxiliary consumption was 12.14 *per cent* to 16.56 *per cent* against the JSERC norms of 9 *per cent* to 10.55 *per cent* during 2005-06 to 2009-10. Auxiliary consumption in excess of norm was by 162.77 MU of energy valuing ₹ 29.13 crore.

Thus, excess energy consumption of 396.24 MU valuing ₹ 73.58 crore could not be dispatched to the grid. Reasons for the excess auxiliary consumption of power in PTPS was, continuous running of Cooling Tower fans, CW fans due to having in wet area and AC Seal oil pumps and other equipments at minus level after shut down of units. In TVNL, inefficient working of equipment like feed pumps, cooling water pumps, air fans, coal grinding mills, ash handling equipment, common auxiliaries etc. of the generating station led to high auxiliary consumption. However, these reasons were controllable and the plant management should have controlled them.

Wanakbari Thermal Power Station of GSECL achieved the lowest auxiliary power consumption at 7.05 *per cent* during 2008-09. (*Source: Performance Review of Thermal Power Stations 2008-09 by CEA*)

High transformation loss of energy

Due to poor maintenance of switch yard and bus bar 103 MU of energy of ₹ 18.40 crore was lost

4.2.36 As per the Monthly Progress Report on Operation & Maintenance in PTPS, 103 MU of energy valuing ₹ 18.40 crore was shown as Transformation and other losses in the process of transfer of energy from generating units to switch yard, bus bar *etc.* The above loss of energy was due to poor maintenance of switch yard and Bus bar *etc.* which could have been controlled. Also, CEA has not allowed such loss.

Repairs & Maintenance

4.2.37 To ensure long term sustainable levels of performance, it is important to adhere to periodic maintenance schedules. The efficiency and availability of equipment is dependent on the strict adherence to annual maintenance and equipment overhauling schedules. Non adherence to schedule carry a risk of the equipment consuming more coal, fuel oil and a higher risk of forced outages which necessitate undertaking R&M works. These factors lead to increase in the cost of power generation due to reduced availability of equipments which affect the total power generated.

As per CEA capital maintenance of boilers was to be done every alternate year within a period of 30 days and capital maintenance of turbo generator was to be done once in five years along with boilers and should not exceed 50 days.

4.2.38 Capital maintenance of boiler and turbo generator of unit 1 & 2 of TVNL was done only twice after their commissioning in 1996 with delay of 31 to 37 months and only at the time when the units had undergone forced

outages due to major faults. Time taken in the capital maintenance was between 7 to 23 months which were much higher than the norm.

4.2.39 We observed that capital maintenance of PTPS unit No. 3, 5, 6, 8 and 9 was not carried out for 8 to 15 years though the units had already outlived their normal life. Delay in capital maintenance of the units ranged between 6 years to 10 years. There was no preventive maintenance and only breakdown maintenance were carried out. Consequently, condition of the plants deteriorated and the units suffered frequent breakdown resulting in generation loss.

Shut down in absence of preventive maintenance resulted in generation loss of 582.38 MU valued at ₹ 104.60 crore

4.2.40 Unit No. 3 and 5 were shut down since August 2003 and April 2004 respectively. There was no system of preventive maintenance in PTPS and only breakdown maintenance was being done. The average PLF of unit No. 3 & 5 were 17.54 and 6.97 *per cent* respectively. CEA had directed that the units had to be restored and 60 *per cent* PLF and stabilised power generation was to be achieved first by adopting better O&M practices before taking up R&M of the units. Restoration of unit No. 3 & 5 was proposed in July 2007 at an estimated cost of ₹ 25.29 crore and ₹ 35.88 crore respectively. The Board approved the proposal and tender was invited in August 2008. However, the tender was cancelled in February 2010 due to non availability of fund. Thus, the units, with a combined installed generation capacity of 130 MW remained shut down for more than 6 years and suffered generation loss of 582.38 MU valuing ₹ 104.60 crore.

4.2.41 The units No. 9 & 10 (110 MW each) of PTPS were shut down since August 2006 after a fire accident. The cost for restoration of the units was initially estimated at ₹ 98 crore. The Board decided for restoration of the units by BHEL, the Original Equipment Manufacturer (OEM) on turn key basis at negotiated rate and placed open order in September 2006. The estimated expenditure for restoration of the Units was revised by the Board (June 2007) to ₹ 244.14 crore. The purchase order/work orders for ₹ 160.52 crore were placed on BHEL (August 2007) and the units were to be commissioned by August 2008 and October 2008 respectively. However, the units have not been commissioned yet.

Non providing adequate fund resulted in delay in restoration of generating units which remained idle entailing generation loss of 661.91 MUs of ₹ 141.10 crore

Though the expenditure was to be financed by GOJ/loan from Power Finance Corporation (PFC), we observed that the funds were not tied up before commencement of the project. The GOJ had provided only ₹ 116.75 crore, JSEB failed to make timely payment to BHEL and could not execute other works required for restoration of the units. Total expenditure of ₹ 190.91 crore (July 2010) had been incurred. Meanwhile, the estimated cost on completion of the work had gone up to ₹ 350 crore including taxes and duties. Thus, inappropriate estimation of the cost of work and failure of GOJ in providing adequate fund resulted in delay in restoration of the 220 MW capacity generating units which remained idle for three and half years entailing generation loss of 661.91 MUs valuing ₹ 141.10 crore.

Thus, periodic maintenance as well as capital maintenance of the plants was not done which resulted into low efficiency and availability of equipment, high forced outages and higher consumption of coal and fuel oil as discussed in the respective paragraphs of the report. Main reasons for the same was non-availability of fund as the GOJ did not provide adequate fund in a timely

manner for the purposes and JSEB had no internal resource to meet the expenditure.

Renovation & Modernisation

4.2.42 Renovation & Modernisation (R&M) and refurbishment activities involve identification of the problems of unit of TPS, preparation of techno economic viability reports and preparation of detailed project reports (DPR) to lay down benefits to be achieved from these works.

R&M activities are aimed at overcoming problems in operating units caused due to generic defects, design deficiency and ageing by re-equipping, modifying and augmenting them with latest technology/systems. R&M activities are undertaken in TPS operating at Plant Load Factor (PLF) of 40 *per cent* and above after assessing the performance and requirement of the units. As per CEA norms Renovation and Modernisation (R&M)/Life Extension (LE) was to be taken up after 25 years or one lakh hours of operation of the plant. The 11 units of PTPS and SRHP being 26 to 44 years of age, were due for R&M/LE programme, none of the units were actually taken up. In this regard, we observed the following:

- JSEB decided in August 2003 for conducting Residual Life Assessment (RLA) in respect of unit No. 1 to 8 of PTPS. However, RLA of unit No. 4 and 7 only had been conducted during 2003-04 and 2005-06 respectively though R&M of units No.4 and 7 had not yet been done. RLA of Boiler and Turbine of unit No. 8 had also been conducted (May 2010).
- Unit No. 8 was under shut down since October 2005. Renovation, Modification & Uprating (RM&U) of capacity from 110 MW to 120 MW of unit No. 7 & 8 was proposed by the Board at an estimated cost of ₹ 500 crore. However, RM&U of the unit had not yet been taken up.
- The two units of SRHP, which were due for R&M / LE in 2002 / 2005 was proposed for R&M in the budget of the Board for the year 2005-06. However, the R&M of the two units of SRHP had not been done as the requisite fund was not provided by the GOJ.

Thus, R&M/LE of the 9 units of PTPS and 2 units of SRHP, though due, were not taken up. Main reasons for the same were non-provision of adequate fund for capital repair & maintenance, R&M/LE of the old and outlived units by the GOJ. GOI had earmarked ₹ 300 crore at concessional rate of interest under AGS & P scheme for Patratu TPS during 10th Five Year Plan period. The fund was to be made available to JSEB through PFC/REC. The Board did not send proposal to GOJ for availing the loan under AGS & P scheme and did not avail of the concessional loan extended by the GOI for restoration/R&M of the units.

Operation & Maintenance

4.2.43 The operation and maintenance (O&M) cost includes expenditure on the employees, repair & maintenance including stores and consumables, consumption of capital spares not part of capital cost, security expenses, administrative expenses etc of the generating stations besides corporate

expenses apportioned to each generating stations etc., but exclude the expenditure on fuel.

4.2.44 Further, as per the 'Generation Tariff Regulation, 2004 for plants set up before April 2004, O&M expenditure should be 2.50 *per cent* of the capital cost with an escalation of 6 *per cent* per annum. Accordingly, JSERC had approved the O&M expenditure of ₹ 316.01 crore only for the years 2005-06 to 2009-10 though the actual expenditure incurred during the period was ₹ 437.31 crore *i.e.*, higher by ₹ 121.30 crore as per the JSERC norm. Thus, disallowance of the O&M expenditure over the JSERC norm resulted in loss of ₹ 121.30 crore.

Financial Management

4.2.45 Efficient fund management is the need of the hour in any organisation. This also serves as a tool for decision making, for optimum utilisation of available resources and borrowings at favourable terms at appropriate time. The power sector companies, should, therefore, streamline their systems and procedures to ensure that

- Funds are not invested in idle inventory,
- Outstanding advances are adjusted / recovered promptly, and
- Funds are not borrowed in advance of actual need.

The main sources of funds were realisations from sale of power, subsidy from State/Central Government, loans from State Government/Banks/Financial Institutions (FI), etc. These funds were mainly utilised to meet cost of generation, payment of power purchase bills, debt servicing, employee and administrative costs, and system improvement works of capital and revenue nature.

4.2.46 The details of cash inflow and outflow in respect of TVNL for the years 2005-06 to 2009-10 are given below:

TVNL

(₹ in crore)

S.No.	Particulars	2005-06	2006-07	2007-08	2008-09	2009-10
Cash Inflow						
1.	Net Profit/(loss)	(116.14)	(2.72)	(41.02)	(15.55)	(101.76)
2.	Add: adjustments	128.84	129.70	130.88	131.96	132.10
3.	Operating Activities	201.03	186.68	205.40	217.03	321.57
4.	Investing Activities	19.53	8.90	2.54	4.28	1.52
5.	Financing Activities	5.00	-	-	-	-
Total		**238.26**	**322.56**	**297.78**	**337.72**	**353.43**
Cash Outflow						
6.	Operating Activities	199.38	263.23	202.46	279.99	330.87
7.	Investing Activities	18.54	44.87	63.82	16.74	2.32
8.	Financing Activities	15.47	12.53	35.66	18.09	17.39
Total		**233.39**	**320.63**	**301.94**	**314.82**	**350.58**
Net Increase/Decrease in cash equivalent		4.87	1.93	(4.14)	22.90	2.85

We observed from the above that there was increase in cash equivalent during review period excepting 2007-08. Net cash outflow from operating activities during the period 2006-07, 2008-09 and 2009-10 was mainly due to poor

recovery/delay in recovery of power supply bills. Cash position was also adversely affected due to locking up of funds in inventory not required immediately and heavy capital expenditure without adequate returns. Therefore, there was an urgent need to optimise internal resource generation by enhancing the PLF to national level and vigorous pursuance of outstanding dues as well as effective recovery of energy bills. On the other hand, the Company could not utilise the available funds for the intended purposes and kept substantial funds in fixed deposits.

Following deficiencies in financial management were noticed:

- JSEB had been preparing budget estimate every year for capital expenditure. As it did not have its own resource, the budget provisions were made assuming that fund will be received from GOJ. Budget provision during 2005-06 to 2009-10 and funds received from GOJ are indicated below:

Year	Budget provision	Fund received
2005-06	183.00	103.13
2006-07	359.00	Nil
2007-08	470.00	63.88
2008-09	1237.00	Nil
2009-10	101.06	61.75

- It is evident from above that the fund received from the GOJ was not commensurate with the budget provision. JSEB had made provision of ₹ 2,350.06 crore in its annual budget for capital schemes during 2005-06 to 2009-10 against which ₹ 228.76 crore only was received from GOJ. Also, JSEB did not arrange fund from internal/other sources nor it was arranged from the Financial Institutions. As such, the planned capital schemes/projects were either not started or were not completed and capital maintenance of the units could not be done in a planned and timely manner.
- As per the guidelines of CERC, the Thermal Power Stations (TPS) had to maintain spares of ₹ 4 lakh for each MW of installed capacity. As per the CERC guidelines, the value of spares to be maintained by the TPSs worked out to ₹ 16.80 crore in TVNL. However, TTPS held a stock of spares valued at ₹ 45.83 crore to ₹ 66.75 crore at the end of the years 2005 to 2009 which was in excess of the norm. As at the end of 2009, TTPS held a stock of spares valued at ₹ 66.75 crore which was in excess of the CERC norm by ₹ 49.95 crore. This resulted in blocking up of funds involving substantial loss of interest.

Power Purchase Agreement with JSEB

4.2.47 TVNL entered into a Power Purchase Agreement (PPA) with JSEB (July 2005). The applicable rate for sale of energy to JSEB would be the rate decided by JSERC at delivery point as per the PPA. The tariff decided by the JSERC would be a single part tariff including fixed charge and variable charge and there was no provision for recovery of capacity charges. Further, in a situation where TVNL would be generating net energy lower than that

approved by JSERC for fixation of tariff, it would not be able to recover the entire fixed cost. We observed that

- TVNL could not generate the quantity of energy approved by JSERC and the net generation was substantially lower in 2005-06 and in the years 2007-08 to 2009-10. Consequently, there was under recovery of fixed cost by ₹ 97.92 crores.
- As per Tariff Policy notified by MOP in January 2006, the PPA should ensure adequate and bankable payment security arrangements to the Generating companies. However, in the PPA with JSEB, no payment security mechanism in the form of 'Escrow Account'or 'Letter of Credit' was stipulated. Consequently, huge amount of ₹ 555.50 crore remained outstanding as on 31.03.2010 due to non-payment of energy bills by JSEB. Thus, substantial working capital remained blocked during the period, recovery of which needs vigorous pursuance.

In absence of specific provision in the PPA, TVNL could not realize the DPS claim of ₹ 1106.06 crore

- As JSEB was not making full payment of energy bills to TVNL, the board of TVNL decided to levy Delayed Payment Surcharge (DPS) with effect from July 2003. Despite the decision of the Board of TVNL, no provision for levy of DPS was made in the PPA by the management. However, TVNL continued raising the DPS claims every month. As JSEB did not pay for any DPS claim, ₹ 1,106.06 crore remained outstanding as on 31.3.2010. Thus, in absence of specific provision in the PPA, TVNL would not be able to realise the amount.

Tariff Fixation

4.2.48 The power generating company is required to file the application for approval of Generation Tariff for each year 120 days before the commencement of the respective year or such other date as may be directed by the JSERC. The Commission accepts the application with such modifications /conditions as may be deemed just and appropriate and after considering all suggestions and objections from public and other stakeholders, issue an order containing targets for controllable items and the generation tariffs for the year within 120 days of the receipt of the application.

The Commission sets performance targets for each year of the Control Period for the items or parameters that are deemed to be controllable which include Station Heat Rate, Availability, Auxiliary Energy Consumption, Secondary Fuel Oil Consumption, Operation and Maintenance Expenses, Plant Load Factor, Financing Cost which includes cost of debt (interest), cost of equity (return) and Depreciation. Any financial loss on account of under performance on targets for above parameters is not recoverable through tariffs.

Delay in filing tariff petition resulted in loss of ₹ 5.68 crore

In this connection, we observed that TVNL had filed petition for FY 2005-06 in September 2005 *i.e.,*after a delay of 10 months on which the JSERC issued the Tariff Order in March 2006 fixing the power tariff at ₹ 1.90 per unit. As TVNL delayed filing the Tariff petition, the Commission implemented the tariff *w.e.f.* 1 January 2006 instead of 1 April 2005. As a result, TVNL had to sell power during the period April 2005 to December 2005 at pre revised rates. Thus, delay in filing tariff petition resulted in loss of revenue of ₹ 5.68 crore.

Environment Issues

4.2.49 In order to minimize the adverse impact on the environment, the GOI had enacted various Acts and statutes. At the State level, Jharkhand State Pollution Control Board (JSPCB) is the regulating agency to ensure compliance with the provisions of these Acts and statutes. Ministry of Environment and Forests (MoE&F), GOI and Central Pollution Control Board (CPCB) are also vested with powers under various statutes.

Audit scrutiny relating to compliance with the provisions of various Acts in this regard revealed the following:

Operation of plant without consent

4.2.50 The plant of TVNL was granted Air and Water consent under the Air (Prevention & Control of Pollution) Act, 1981 and Water (Prevention & Control of Pollution) Act, 1974 to operate the TPS for the period from January 2005 to December 2005 with certain conditions. Request of TVNL for renewal of Air and Water consent for the subsequent periods had not been acceded to by the JSPCB. Though TVNL had stated that most of the conditions were being complied by TVNL, conditions of 100 *per cent* ash water recirculation, Silo system to provide dry ash to the users outside the premises had not yet been complied. Thus, the plant was running without consent since January 2006 due to non-compliance of conditions set out by the JSPCB for which TVNL had been issued show-cause notices several times since 2005. In fact, TVNL had been threatened with closure of its TPS in the interest of public health and environment.

4.2.51 JSPCB had allowed (January 2007) PTPS to run production of electricity only upto 80 MW on the ground that SPM level and TSS of effluent water were above the norms. Since the SPM level and TSS of effluent water discharged could not be brought into the limit, JSPCB had not yet increased the production capacity beyond 80 MW and the TPS had been generating electricity with disregard to limit fixed by JSPCB.

Air Pollution

4.2.52 Coal ash, being a fine particulate matter, is a pollutant under certain conditions when it is airborne and its concentration in a given volume of atmosphere is high. Control of dust levels *i.e.*, Suspended Particulate Matters (SPM) in flue gas is an important responsibility of thermal power stations. Electrostatic Precipitator (ESP) is used to reduce dust concentration in flue gases. Control of dust level is dependent on effective and efficient functioning of ESPs.

Non-achievement of specified SPM levels

4.2.53 The SPM level in the Flue gas in PTPS was 241 µg/NM^3 to 910 µg/NM^3 against the JSPCB norm of 150 µg/NM^3. The high SPM level required replacement/modification of the ESPs. However, ESP of unit No. 10 only was modified in 2003 and there was no proposal for modification of the ESPs of the remaining units. In TVNL, the recorded SPM levels for the years under review ranged from 217 to 235 µg/NM^3 as against the designed level of 150 µg/NM^3.

Ash disposal

4.2.54 MoE&F issued a notification (September 1999) which provided that all existing thermal power plants have to achieve ash utilization level of 100 *per cent* in a phased manner by 2013-14. Also the thermal plant should supply fly ash to building material manufacturing units free of cost at least for 10 years. Ministry of Power, GOI directed the thermal power stations to ensure adequate dry fly ash collection & storage facilities to the users free of cost and the users were to lift the dry ash from there. In PTPS, fly ash is mixed with water to make slurry and pumped out to ash ponds. PTPS committed before the GOI in February 2006 to install dry ash storage facilities within 2 years. As per direction of Hon'ble High Court of Jharkhand, PTPS was required to construct dry fly ash collection system by October 2007 so that fly ash could be used for manufacturing value added products. The Hon'ble High Court had directed the Pollution Control Board to monitor the measures taken by the JSEB and take suitable action. JSEB appointed (August 2005) a consultant for setting up a dry fly ash collection system & SILO for unit No. 1 to 6 in PTPS and placed the work order (August 2008) after three years at a lump sum price of ₹ 21.00 crore. The work was to be completed by April 2009. However, the work was not yet complete.

4.2.55 TVNL had not yet constructed the dry fly ash collection system & SILO and placed only the order for preparation of DPR for dry fly ash collection system and SILO. TVNL had not sold ash to any brick or cement manufacturer during the period 2005-10. However, 18.96 MT of pond ash out of total 24.48 lakh MT of ash generated had been utilised by TVNL for filling of low lying areas at a cost of ₹ 11.65 crore. Since the ash pond had already been filled there was need for evacuation of the ash pond for which substantial expenditure was required.

This suggests that effective action had not been taken by PTPS/TVNL to construct the Dry Ash Collection System. Had the Dry Ash Collection System been constructed as per direction of MOEF, MOP, disposal of dry ash could have been made at minimal expenditure and a substantial portion of the expenditure of ₹ 11.65 crore incurred by TVNL on evacuation of ash could have been avoided.

Noise Pollution

4.2.56 Noise Pollution (Regulation and Control) Rules, 2000 aim to regulate and control noise producing and generating sources with the objective of maintaining ambient air quality. To achieve the above, noise emission from equipment be controlled at source, adequate silencing equipment should be provided at various noise sources and a green belt should be developed around the plant area to diffuse noise dispersion. The TPSs are required to record sound levels in all the areas stipulated in the rules referred to above.

We observed that no silencing equipments were installed to control the noise level and system for recording the sound levels was not in place in PTPS and TVNL as required under the rules. Also, recording of noise level at PTPS and TVNL were not being done.

Water pollution

4.2.57 The waste water of the power plant is the source of water pollution. As per the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the TPSs are required to obtain the consent of JSPCB which *inter-alia* contains the conditions and stipulations for water pollution to be complied with by the TPSs.

As per norms prescribed by JSPCB, total suspended solids (TSS) in effluents from the TPSs should not exceed 100µg/litre. We noticed that TSS in effluent discharges from the following TPSs exceeded the standards for the years mentioned against them:

Sl.No.	Name of the TPS	Norms	2005-06	2006-07	2007-08	2008-09	2009-10
			Actual	Actual	Actual	Actual	Actual
1.	Patratu Thermal Power Station	100	462	164	77	94	2071
2.	Tenughat Thermal Power Station	100	16	2567	220	424	250

TSS present in effluent discharges from PTPS was 462 µg/litre in 2005-06 which increased to 2071 in 2009-10. In TTPS the percentage of TSS ranged between 16 to 2567 µg/litre during the period. The main reasons for exceeding the TSS standards were absence of sedimentation tanks, ineffective functioning of effluent treatment plants and leakage in pipes carrying ash slurry and non-maintenance of the Ash Pond area as per guidelines of Pollution Control Board. As the reasons are controllable, effective and time bound steps could have avoided the non-repairable damage caused to the water bodies.

Monitoring by top management

MIS data and monitoring of service parameters

4.2.58 JSEB/TVNL plays an important role in the State economy. For such a giant organisation to succeed in operating economically, efficiently and effectively, there should be documented management systems of operations, service standards and targets. Further, there has to be a Management Information System (MIS) to report on achievement of targets and norms. The achievements need to be reviewed to address deficiencies and also to set targets for subsequent years. The targets should generally be such that their achievement would make an organisation self-reliant. Audit review of the system existing in this regard revealed the following.

- Though JSEB/TVNL had an MIS system whereby information on various operational parameters/targets was sent to its headquarters on a monthly/quarterly basis, no follow up action was taken by the Board/company headquarters on regular basis.
- We observed that the post of the Chairman of TVNL remained vacant for different periods of about 25 months during the period under review. As a result the meetings of the Board of Directors could not be held regularly and only 10 Board meetings could be held in the year 2005-06 to 2009-10 as against 20 Board meetings required under the Companies Act, 1956. Also no

AGM was held during the year 2006-07 to 2009-10.Thus, Apex level monitoring of the affairs of the company was not done effectively. It was further observed that unit No. 1 of TTPS was under forced outage from 31 May 2007 due to damage of rotor. Overhauling work of the rotor was to be awarded to BHEL with approval of the Board. As the post of Chairman was vacant, approval of the Board could be obtained only in December 2007 delaying the commissioning of the unit by 7 months with resultant loss of power generation. Thus, normal operation of the plant was affected and generation loss of ₹ 140.77 crore was suffered by the company.

- Appointment of Managing Director of TVNL was being made on ad-hoc basis, The GOJ appointed the Member (Technical), JSEB as Director (Technical) cum Managing Director in November 2004 for a maximum period of six months which was extended till October 2007. Thereafter, General Manager cum Chief Engineer, JSEB was appointed as Managing Director of TVNL in December 2007 for three months, who was holding the post till date with periodical extensions. The post of Managing Director remained vacant for 207 days during the period under review. As a result of the failure to fill up the top management post and appoint a regular incumbent as MD, the quality of management suffered and important decisions were delayed.

Conclusion

- There was no addition in power generation capacity during 2005-2010 to meet the power demand in line with the National Policy of Power for All by 2012.
- Adequate funds for the projects for capacity additions, R&M/life extension, capital maintenance of the units and for restoration of the shut down units were not made available by the GOJ.
- Manpower was not rationalized and there was no recruitment policy in TVNL
- Generation from the existing TPSs of JSEB/TVNL was abysmally low due to inefficient operation/lack of maintenance of the power plants.
- There was no system of preventive maintenance in JSEB and planned shut downs were not taken in TVNL for capital maintenance.
- Renovation and modernisation/Life extension and adequate capital maintenance of the old and outlived plants of the State had not been done.
- Effective monitoring was not done at TVNL as the post of Chairman remained vacant for a considerable period and ad-hoc appointments were made in the post of Managing Director.

Recommendations

We suggest that:

- GOJ should implement the proposed projects for capacity addition, particularly those planned with the available infrastructure in PTPS/TVNL without any delay.

- GOJ/JSEB should provide/arrange adequate fund for restoration/ renovation & modernisation of the units of PTPS and undergoing restoration of the shut down units of PTPS should be completed without delay.
- Rationalisation of manpower should be done to achieve its optimum utilisation.
- Scheduled preventive maintenance as well as prompt breakdown maintenance in the operating units should be conducted to control forced outages and maximise generation in PTPS/TVNL.
- Planned shut down should be taken for capital repair/maintenance in JSEB/TVNL.
- GOJ and the Board should undertake renovation and modernisation/Life extension as well as capital maintenance of the units of JSEB/TVNL in a planned and timely manner.
- GOJ should ensure effective monitoring at Board level in TVNL and the post of Managing Director be filled up as per the selection process.

Section 'B' Transaction Audit Observation

Important audit findings emerging out of test check of transactions of the State Government companies/ corporation are included in this Chapter.

Government Companies

Jharkhand Police Housing Corporation Limited

4.3 Irregular award of work

Lack of financial propriety in the construction of portable huts and avoidable payment of transportation charges of ₹ 1.84 crore to the contractor.

The Government of Jharkhand (GOJ) entrusted (March 2006) Jharkhand Police Housing Corporation Limited (JPHCL) the project for construction of 46 portable huts to provide shelter to Central Para Military Force personnel at a cost of ₹ 31.60 crore. The construction of portable huts included construction of foundation and plinth, supply and erection and this composite work was not covered by the Schedule of Rates (SoR). According to the resolution of GOJ (February 2002), JPHCL was required to invite tenders for the works which were not covered under SoR.

We, however, observed (October 2009) that the work was awarded (March 2006) to M/s Sintex Industries Ltd (SIL), Kalol, Gujrat (contractor) on the basis of a suo-moto proposal received from them to complete the work at DGS&D[1] rate contract. The contractor neither provided Schedule 'C'[2] nor JPHCL obtained it from the available sources to find the economic parallel rate contracts under DGS&D. The committee of JPHCL, constituted on 29 March 2006, did not consider purchase of the items from any parallel rate contract holders who were located in nearby places like Kolkata and accepted (31 March 2006) proposal of SIL, Kalol, Gujarat.

According to the circular (October 2003) of Finance Department, GOJ, the articles on DGS&D rate contract should be purchased locally to minimize the net cost to the Government. The circular also stated that if in the list of DGS&D firms, there were authorized dealers in the State of Jharkhand then the articles would be purchased from such dealers only. We observed that an amount of ₹ 1.84 crore was paid to the contractor on account of transportation of portable huts from Kalol, Gujrat to Jharkhand. This could have been avoided, had the contract been awarded to the local contractor or through inviting tender. Previously, the local dealer of the contractor had also supplied the portable huts without charging any transportation cost to Jharkhand Armed Police (JAP) I battalion at Ranchi. We further observed that as per the DGS&D rate contract the station of dispatch of portable huts was Kalol, Gujarat, but 30 numbers of portable huts were dispatched from Uleberia, West

[1] Director General of Supplies and Disposal

[2] Schedule 'C' provides the list of parallel rate contract holders

Bengal and the contractor charged excess transportation cost from Kalol, Gujarat though the items were shipped from Uleberia, West Bengal.

We further observed that the quality inspection which was required to be done by DGS&D was dispensed with at the behest of the contractor itself which suggested that in view of the urgency, the quality inspection by DGS&D officials be dispensed with. In the absence of quality inspection, the quality of the portable huts constructed was poor and there were numerous complaints about inferior quality from users. The main constituents of the work of construction of portable huts were construction of plinth and foundation and supply and erection. But measurements were recorded only for the construction of plinth and foundation work and no measurement was recorded for supply and erection of portable huts. Stock account of portable huts was also not maintained. After completion of erection work, inspection was to be carried out at consignee's end but no such inspection was conducted by JPHCL.

Thus, award of the work of construction of portable huts without tendering was in violation of prescribed rules and regulations and allowing unnecessary transportation charges to the contractor of ₹ 1.84 crore led to non safeguarding the financial interests of Government and a sum of ₹ 28.70 crore was paid to the contractor without inspection to ensure that the work was completed as per DGS&D specification.

The Management accepted (October 2010) that Schedule 'C' relating to parallel rate contract holders and other alternative proposal of any agency other than SIL for purchase of portable huts was not available in the records of the JPHCL. It further stated that its Technical Committee had assessed the technical work experience of the contractor by scrutinizing various work orders of different departments and by visiting the site of portable huts constructed at Jharkhand Armed Police (JAP-I), Ranchi. It also stated that the portable huts were handed over after the site engineers of JPHCL had examined and satisfied themselves.

The reply was not correct as by the time Technical Committee submitted its report in March 2006, the work of JAP-I, Ranchi was not started and all the work orders by different departments were given to the contractor following the prescribed procedure of inviting tenders /quotations. Also, the measurement book (MB) did not show that the materials had actually arrived and handing/taking over note by JPHCL engineers was not given. Further, certificate that the work has been completed as per DGS&D specification was also not recorded in the MB.

The matter was reported (June 2010) to the Government; its reply was awaited (October 2010).

Statutory Corporation

Jharkhand State Electricity Board

4.4 Lack of financial propriety

Lack of financial propriety in purchase of meter boxes/cable and non-installation of the meter boxes resulted in blocking of ₹ 10.50 crore with loss of interest of ₹ 3.13 crore.

The Board procured 1, 20, 000 (November 2005) single phase electronic meters. In order to check the theft of energy and to enhance the revenue realization, the Board decided (May 2006) to install these single phase meters with meter box at the consumers' premises and authorised the General Manager-cum-Chief Engineer (GM-cum-CE) at the Electric Supply Area (ESA) Offices for procurement of the meter boxes.

Accordingly, Electric Supply Area (ESA) office at Dumka invited tender (June 2006) for procurement of 20,000 single phase meter boxes in which M/s D.N. Engineering, Deoghar, at quoted price of ₹ 501 per meter box was adjudged the lowest tenderer. However, purchase orders for 32,700 meter boxes were placed at the rate of ₹ 501 per meter box (March 2007) on 11 parties splitting the total quantity. Similarly, in the tender (May 2007) for purchase of 50 kms cable M/s Raja Enterprises was the L-1 with a price of ₹ 72,000 per km. However, purchase orders (P.Os) for 50 kms cable were split up and placed (July 2007) on three tenderers. The repeat orders for the additional quantity of 150 kms cables, were also placed (June 2008) on M/s Raja Enterprises at the same price.

The Chief Engineer (Store & Purchase) further directed (May 2007) other ESAs to procure meter boxes by completing the tender process and to negotiate with the L-1 bidder for bringing down the price equal to or below the price at which ESA Dumka procured the meter box. However, ESA, Medininagar and Dhanbad adopted the L-1 price *i.e.* ₹ 501 per meter box and ₹ 72,000 per km of cable as the bench mark fixed by the CE (S&P) and placed orders for meter boxes and cable on nomination basis without inviting tender. The Board procured a total quantity of 1,51,443 meter boxes and 783 kms of metering cable by issuing 58 P.Os and 37 P.Os respectively at a total cost of ₹ 13.23 crore during July 2007 to November 2008.

We observed (May 2009/January 2010) that the Member (T) delegated (June 2007) the financial power of ₹ 2 crore to GM-cum-CE, which was in contravention of the rule 9(b) of "Delegations of Financial Power" (financial delegations) of JSEB which authorized only the Central Purchase Committee (CPC) of the Board to delegate such financial power. As per the terms & conditions of financial delegations (Sl. No. 5), the work should not be split up into parts to bring them within delegated powers but contrary to this, 85 nos. of P.Os valuing ₹ 7.67 crore were split up and placed by GM-cum-CE of 5 ESAs to bring the value within the delegated financial power of ₹ 10 lakh. The GM-cum-CE was delegated with financial power of ₹ 10 lakh in each case for purchase of store (Rule 9 (b) (2) of financial delegations) but contrary

to this 10 P.Os above ₹ 10 lakh were placed by GM-cum-CE of 3 ESAs[3] for total value of ₹ 5.57 crore. Further, as per CVC guidelines[4] for tendering principle, price bid of those bidders who were technically qualified should be opened only. Contrary to this, ESA, Dumka considered price bids of 6 tenderers who were technically disqualified and orders were placed on them.

Out of 1,51,443 meter boxes and 783 kms of metering cables, only 22,059 meter boxes and 224.78 kms of cable were installed (October 2010) and balance 1,29,384 meter boxes and 558.22 kms cable valuing ₹ 10.50 crore were lying idle for about 16 to 38 months which resulted in blocking of funds of ₹ 10.50 crore and consequential loss of interest of ₹ 3.13 crore[5] The requirement of meter boxes and cables was not assessed before finalising the procurement and thus the purchase decisions were hasty and lacked financial propriety.

The Board in its interim reply (September 2010) has accepted that procurement of excess quantity was not justified in respect of ESA Dumka and also the meter boxes procured in all 5 ESA were lying unutilised ranging between 50 *per cent* and 91.40 *per cent.* The Board further stated that the action was being initiated against all erring officers involved in making such futile procurement without adhering to the rules and regulations.

We suggest that the purchase of bulk quantity of equipment should be made in a centralised manner by the purchase wing of the Board after properly assessing the requirement and adhering to the laid down policy / rules of the Board.

The matter was reported to the Board/Government in January 2010; their replies were awaited (October 2010).

4.5 Loss of revenue due to short levy of demand charges

The Board was deprived of revenue to the tune of ₹ 0.94 crore due to delay in assessment of load and not adhering to the prescribed procedure for HTSS consumer.

M/s Bimaldeep Steel (P) Ltd[6], 11 KV High Tension Service (HTS) consumer with contract demand of 600 KVA at Electric Supply Area, Jamshedpur, requested (June 2008) the Board for extension of load to 4800 KVA at 33 KV under HTSS tariff which was sanctioned (August 2008). The consumer further requested (November 2008) for extension of load to 7000 KVA which was also sanctioned (November 2008). An agreement was executed (February 2009) with the consumer and the General Manager-Cum-Chief Engineer, Jamshedpur accorded the approval (April 2009) for energisation of the electric connection to consumer in anticipation of final approval of tapping of the line by the Board. The connection was energized in (April 2009) by tapping the line.

[3] Medninagar, Jamshedpur & Hazaribag.

[4] Vide O.O.No. 44/09/03.

[5] Calculated at 13 *per cent* interest rate, at which the Board borrows fund from the State Government.

[6] Consumer No. HJAP-163

We observed (January 2010) that the Board granted (May 2009) permission for tapping the line without assessing the exact load requirement of the tonnage of induction furnace in contravention of the tariff schedule of JSEB which stipulated that in the case of High Tension Special Service (HTSS) consumer having induction furnace, the supply to the induction furnace should be made available only after ensuring that the loads sanctioned were corresponding to the load requirement of tonnage of furnace and no supply would be given below this norms. The demand charges should be levied on actual demand recorded in the meter during the month or 100 *per cent* of the contract demands whichever was higher. Though measurement of capacity of the induction furnace crucibles had already been made by the Board in March 2009, the Board fixed the load requirement at 10,800 KVA only in October 2009 i.e. after a delay of seven months. The Board also instructed the Area Office to complete the necessary formalities for a minimum contract demand of 11,000 KVA at 33 KV line. We further observed that despite the Board's instructions, the Electric Supply Area (ESA) did not contemplate any formalities for finalization of agreement with the consumer and continued levying the demand charges based on the contract demand of 7000 KVA recorded from April 2009 onwards. As a result, the realization of demand charges was lower by ₹ 0.94 crore[7] during the period April 2009 to May 2010 due to energisation of supply without assessing the exact required load as per the capacity of the induction furnace.

The Board accepted (September 2010) the facts and stated that the load of the consumer had been enhanced to 11000 KVA (June 2010) and raised additional supplementary bill of ₹ 1.31 crore[8] for the excess demand charge on the consumer. The Board further stated that against the claim, the consumer had filed a writ petition and as an interim relief the court had directed not to disconnect the line of the petitioner, if he had paid his current bill. The facts remained that due to non adhering to the prescribed procedure for sanctioning of power supply and non finalisation of agreement with the consumer, the Board could not realise the revenue of ₹ 0.94 crore.

The matter was reported to the Government (March 2010); its reply was awaited (October 2010).

4.6 Avoidable expenditure

Avoidable expenditure of ₹ 1.36 crore due to non synchronisation of information in computerised bills.

The Electric Supply Area (ESA), Jamshedpur of Jharkhand State Electricity Board (Board) outsourced (August 2002) the entire operations of computerised energy billing right from meter reading to generation of monthly energy bills, bill distribution, meter surveillance, hard board (paper bond) binding, preparation of consumer's assessment ledger, Revenue Statement – I and other reports, list of defaulter consumers/disconnected consumers etc to three agencies namely M/s Crystal Computer Informatics Centre Pvt. Ltd., Ranchi, M/s Prakriti Enterprises, Patna under Electric Supply Division(ESD),

[7] Worked out at contract demand of 10,800 KVA.

[8] Worked out by the Board at contract demand of 11,000 KVA for the period April 2009 to May 2010.

Jamshedpur and M/s Info Softdata Services Pvt. Ltd., Jamshedpur under ESD, Adityapur.

The agreements (September 2002) entered with M/s Crystal Computer Informatics Centre, M/s Info Softdata Services and M/s Prakriti Enterprises stipulated that besides other works, preparation of Revenue Statement- I and other compiled reports containing all the information in respect of all the consumers in the Division. We observed (January 2010) that M/s Crystal Computer Informatics Centre and M/s Info Softdata Services had been preparing Revenue Statement-I, category wise and tariff wise and M/s Prakriti Enterprises was preparing the Revenue Statement I, division wise and also sub-division wise. The payment for preparation of the revenue statement was made @ ₹ 0.09 per consumer/per month/per copy separately for each category as per the agreement. Accordingly, the Board made payment separately for preparation of Revenue Statement- I (category wise, tariff wise) to two agencies[9] and also (division-wise and sub division-wise separately) to one agency[10]. The information contained in the Revenue Statement-I either category-wise/tariff-wise or division-wise/subdivision wise was similar and only one statement either category wise or tariff wise prepared in respect of all the consumers would have served the purpose. Further, the Board also made payment to M/s Info Softdata for Revenue Statement-IV as category wise and tariff wise separately which was replicated information. The Board paid ₹ 12 lakh to these agencies during the period 2007-08 to 2008-09 for such reports which could have been avoided.

Further, these agencies prepared a number of compiled reports viz., (i) tariff-wise assessment of all consumers (ii) tariff-wise assessment of non-Government consumers (iii) billing status of non-Government and Government consumers (iv) tariff-wise collection of all consumers (v) tariff-wise collection of non-Government consumers (vi) tariff-wise assessment (vii) cash book collection (viii) category-wise running arrear analysis of non-Government consumers (ix) category-wise arrear analysis of non-Government and Government consumers (x) category-wise running arrear analysis of non-Government and Government consumers (xi) category-wise arrear analysis of non-Government consumers (xii) statement of accounts (xiii) category-wise total assessment of current month (xiv) category-wise units sold in current month (xv) meter reading and billing, tariff –wise and section-wise etc. and charging @ ₹ 0.09 per consumer/per month/per copy. The Board paid ₹ 1.24 crore for the period April 2007 to March 2009 for all such information generated by these agencies, which was already available in Consumer's Assessment Ledger and Revenue Statement-I and could have been utilised.

We further observed that the ESA/Board did not have any adequate mechanism to cross check or verify the necessity of information/report/ statement prepared by these agencies which were either similar or available in Consumer's Assessment Ledger. The ESA neither reviewed the optimum requirement of reports/statements nor made efforts to control the avoidable expenditure on production of these duplicate information and its multiple

[9] M/s Info Softdata Services Pvt. Ltd and M/s Crystal Computer Informatics Centre Pvt. Ltd.

[10] M/s Prakriti Enterprises.

copies for which Board had made the payment. The Chairman, JSEB had also directed (February 2008) to stop granting further extension to the agencies and to go for fresh tendering besides review the ongoing practice of computerized billing. However, no effective action was taken by the Board in this regard and extension was granted to all the three agencies at regular intervals till September 2009. The Board, however, made the payment to these agencies upto March/July 2009 and ordered (May 2010) to suspend all the payments to these agencies involved in computerized billing.

Thus, due to lackadaisical approach and inaction to synchronise the requisite information with reports generated through computerized billing, the Board incurred an avoidable expenditure of ₹ 1.36 crore.

The matter was reported to the Board/Government in June 2010; their replies were awaited (October 2010).

4.7 Injudicious Procurement

Injudicious procurement of copper control cables worth ₹ 2.29 crore and consequent loss of interest of ₹ 79 lakh.

Jharkhand State Electricity Board (Board) issued (December 2006) a purchase order in favour of M/s Insucon Cables and Conductors (P) Ltd., for supply of 140 kms, FRLS PVC copper conductor control cable of different sizes and cores for augmentation and construction of 33 KV bays at different locations under various transmission zones *i.e.* Ranchi, Dumka and Jamshedpur at a total landed cost of ₹ 2.53 crore. The delivery was completed in April 2007.

We observed (May 2009) that without assessing the further requirement and availability of 143.439 kms of copper control cables in stores (as on November 2007), two subsequent purchase orders were issued (December 2007) to M/s Ashoka Industries and M/s Insucon Cables & Conductors (P) Ltd. for supply of 136 kms of same material at a total cost of ₹ 2.29 crore on same terms and conditions. The delivery of the material was completed in February 2008. Subsequent to procurement of copper conductor control cables (February 2008), only 68.493 kms of cable were issued till October 2010. This requirement of copper conductor cables of the Board could have been met easily from the stock available (November 2007) in the various stores under these transmission zones. This indicated that there was no further requirement of the copper conductor control cables for which subsequent purchase orders were placed. Thus, the procurement of 136 kms of copper conductor control cables was injudicious which resulted in blocking of funds of ₹ 2.29 crore with consequential loss of interest of ₹ 79 lakh[11] as the Board was borrowing for its working capital.

The matter was reported to Board / Government in June 2010, their replies were awaited (October 2010).

[11] Interest calculated at 13 *per cent* per annum.

4.8 Wasteful procurement

Procurement of Space Clima Boiler Maintenance Platform followed by its non-utilisation resulted in infructuous expenditure of ₹ 40.47 lakh

A manufacturer, M/s Tractel Tirfor India Pvt Ltd. approached (July 2004) Jharkhand State Electricity Board (Board) with a proposal for supply of Space Clima Boiler Maintenance Platform for maintenance and cleaning of inner walls of boilers of Thermal Power Station to reduce boiler maintenance time and help to produce more electricity. To assess its usefulness and requirement, the GM, Patratu Thermal Power Station (PTPS) recommended the Board (January 2005) to procure one set on propriety basis. On further ascertaining (February 2005 and April 2005) its techno-economic feasibility with cost benefit analysis, the PTPS intimated (May 2005) that Space Clima would be useful for Station-B [12] only. Since the Board had no Space Clima available at PTPS, it was not possible for them to do any cost benefit analysis. JSEB further asked (December 2005) PTPS for its suitability for Russian make 50 MW boilers at station 'A'[13] of PTPS, but without waiting for the reply, CE (Generation) moved (December 2005) an agenda in Central Purchase Committee (CPC) for the said procurement.

We observed (March 2010) that the letter of intent (LOI) was issued (January 2006), prior to its approval by CPC. The scheduled delivery period of this equipment was 10-12 weeks from the date of receipt of LOI. However, the CPC approved its procurement (March 2006) and ordered (June 2006) for procurement of one set of Space Clima at a landed cost of ₹ 40.47 lakh. The material was received (June 2006) at PTPS.

We further observed that the Space Clima Boiler Maintenance Platform was procured as a proprietary item without any tender process and ascertaining its techno-economic feasibility for the units of stations A and B of PTPS but this equipment remained idle for almost four years till March 2010. On being pointed out in audit, the Board issued it (April 2010) for residual life assessment study purpose (RLA). Thus, an expenditure of ₹ 40.47 lakh incurred on its purchase proved infructuous.

The Board stated (September 2010) that the equipment had been issued from the store (April 2010) and being used in boiler of unit no. 8 for residual life assessment (RLA) study purpose and would also be utilized for maintenance of boilers of 110 MW station B as per requirement. The reply of the Board does not hold good and as the equipment was issued not for the purpose it was purchased. The equipment was kept idle in stores for almost four years and was issued from the store for RLA study after pointing out by audit. The warranty/guarantee of the equipment against any bad workmanship and defects had already been elapsed in May 2007.

[12] comprising four units of 110 MW each of PTPS.

[13] comprising 6 units (4 units of 50 MW and 2 units of 100 MW each).

The matter was reported (June 2010) to the Government; their reply was awaited (October 2010).

Ranchi,
The

(RAKESH KUMAR VERMA)
Principal Accountant General (Audit)
Jharkhand

Countersigned

New Delhi,
The

(VINOD RAI)
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