

Chapter II

Performance Audit relating to Government Companies

2.1 Performance of Power Generating Undertakings in West Bengal

Executive Summary

Power is an essential requirement for all facets of life and has been recognised as a basic requirement. In West Bengal, the generation of power is managed by the West Bengal Power Development Corporation Limited (WBPDC), Durgapur Projects Limited (DPL), Calcutta Electric Supply Corporation Limited (CESC), Dishergarh Power Supply Company Limited (DPSC) and West Bengal State Electricity Distribution Company Limited (WBSEDCL).

As on 31 March 2010, West Bengal had installed capacity of 10,476.53 MW. Out of this, 5,620.53 MW was in State sector PSUs (WBPDC, DPL and WBSEDCL). The turnover of the State owned companies was ₹13,568.46 crore in 2009-10, which was equal to 62.60 per cent and 3.69 per cent of the State PSUs turnover and State Gross Domestic Product respectively. The State PSUs employed 31,015 employees as on 31 March 2010.

Capacity addition and project management

Net capacity addition (2,815.13 MW) during 2005-10 was less than the addition planned by the State (4,020 MW). The State was not in a position to meet the demand as the power generated as well as purchased fell short to the extent of 6,022.95 MUs to 10,499.29 MUs during 2005-10.

The 11 units implemented during the review period were not completed within scheduled time. Main slippage in time schedule were due to delayed finalisation and approval of drawings, delay in execution of work of main plant by the contractors and delay in supply of materials. Time overrun varied from seven to 84 months in commercial operation of projects, which led to cost overrun amounting to ₹3,035.42 crore over the estimated cost of DPR.

Contract management

During 2005-10, contracts valuing ₹10,825.61 crore were executed. Due to tardy progress of work, both WBPDC and DPL had to forego subsidy of ₹84.26 crore and ₹4.47 crore respectively, under Accelerated Generation and Supply Programme (AG&SP) scheme. Further, at

DPL all statutory clearances were obtained (September 2002) for a 250 MW plant, but notice inviting tender was issued in July 2004 for a 300 MW plant, which resulted in delay in execution of the project by 23 months besides rendering BHEL, technically unsuitable.

Operational performance

Performance of the existing generation stations depends on efficient use of material, manpower and capacity of the plants so as to generate maximum energy possible without affecting the long term operations of the plants. Our scrutiny of operational performance revealed the following:

Procurement of fuel

Short receipt of coal (19.54 per cent) at DPL (31.21 lakh MT) and WBPDC (99.29 lakh MT) against the total linkage approved by Standard Linkages Committee during the four years upto 2008-09 led to shortfall in achievement of the generation targets by 3,115.28 MUs. Similarly, after fuel supply agreement (FSA) the Companies received less than the agreed quantity of coal in 2008-09. Short receipt of 64.56 lakh MT of coal (28.29 per cent) resulted in shortfall in achievement of generation target by 3,531.46 MU.

Consumption of fuel

Use of coal having less gross calorific value coupled with Station Heat Rate (SHR) above the West Bengal Electricity Regulatory Commission (WBERC) norms and leakages of steam in the ageing units of power plants caused excess consumption of coal to the tune of 84.94 lakh MT (₹1,384.47 crore) during 2005-10 in DPL and WBPDC (BkTPP and KTPS).

Deployment of manpower

WBPDC, DPL and WBSEDCL had 31,015 employees as on 31 March 2010. DPL incurred an extra expenditure of ₹32.82 crore in 2005-10 due to excess manpower in comparison to sanctioned strength. In WBSEDCL separate manpower allocation for generation activities was not done. At WBPDC the manpower was within the norms prescribed by WBERC.

Shortfall in generation

Targets for generation of power for each year are fixed by the generation company and approved by the West Bengal State Electricity Regulatory Commission. It was observed that the State PSUs were able to generate a total of 1,00,706.99 MU of power during 2005-06 to 2009-10 against a target of 1,09,612.33 MU fixed resulted in net shortfall of 8,905.34 MU.

Plant load factor

PLF of WBPDCCL remained less than national average PLF in all the years under review. PLF of DPL also could not reach national average level during 2005-10. The PLF of the two Companies ranged between 59.48 per cent to 67.84 per cent and 41.57 per cent to 61.94 per cent respectively against national average PLF of 73.71 per cent to 78.61 per cent.

Outages

The percentage of forced outages varied from 2.15 to 9.04 per cent and 3.55 to 10.96 per cent for BkTTP and KTPS respectively during 2005-10. At DPL, the percentage of forced outages remained in the range of 19.54 to 29.25 during that period. This indicated non adherence to preventive maintenance schedules leading to increased incidence of breakdowns.

Auxiliary consumption

The generation of 729.31 MU at WBPDCCL and DPL valuing ₹140.90 crore could not be dispatched to the grid as the actual auxiliary consumption of power stations ranged from 9 per cent to 12.47 per cent against WBERC norms of 9 to 10.50 per cent.

Renovation and modernisation

It was observed that the incomplete refurbishment as required under residual life assessment study at Unit VI of DPL led to generation loss of 604.83 MU valuing ₹152.81 crore. In respect of KTPS (WBPDCCL), the work of R&M was stopped (September 2006) after incurring an expenditure of ₹56.42 crore. This resulted in generation loss of 363.51 MU valued at ₹61.08 crore.

Financial management

Dependence on borrowed funds (secured loans) increased at WBPDCCL during review period as borrowing increased from ₹696.58 crore in 2005-06 to ₹3,539.52 crore (408 per cent) as at the end of 2009-10. This entailed interest burden of ₹588.01 crore during review period, ultimately increasing the operating cost of WBPDCCL. Heavy capital expenditure coupled with interest commitment of loans without adequate returns

due to delay in commercial operation of the plant caused significant increase in cost of operation.

Purulia pump storage project

PPSP (900 MW) was envisaged to meet the energy demand during peak hour period. During 2007-08 to 2009-10 it failed to bridge the peak hour shortage of 766.02 MW to 1,407.33 MW in the state due to operation of the plant from 41.77 per cent to 55.65 per cent only out of the possible hours. It consumed more power for pumping of water required for generation than power generated. It generated 1,930.80 MU against consumption of 2,472.12 MU during the period 2007-08 to 2009-10.

Environmental issues

Against the MOE&F norm for use of less than 34 per cent ash content coal, KTPS and BkTTP received 450.94 lakh MT coal with ash content between 28 to 39 per cent. DPL received 91.88 lakh MT of coal with ash content varying from 30 to 44 per cent during the review period. Failure to arrest water pollutant within prescribed norms under Water (Prevention and Control of Pollution) Cess Act, 1977 cost WBPDCCL and DPL ₹1.19 crore and ₹77 lakh respectively as cess which was avoidable.

Conclusion and Recommendations

West Bengal State sector companies could not keep pace with growing demand of power in the State. The project management was ineffective as there were instances of time and cost overrun in all the projects implemented during 2005-10. Delay in completion also caused increase in interest cost during construction period. Operational performance of the plants was adversely affected due to short receipt as well as inferior quality of coal, low heat rate causing excess consumption of coal. Heavy capital expenditure coupled with interest commitment on loans caused significant increase in cost of operations. The top management did not take corrective measures to ensure adherence to norms/targets in respect of input efficiency parameters. The review contains seven recommendations which include effective planning and monitoring, ensuring consumption of coal within the prescribed norms, timely taking up of renovation and modernisation activities and ensure compliance to environmental laws, etc.

Introduction

2.1.1 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 crucial to sustain growth of all sectors of the economy. The Electricity Act 2003 provides a framework conducive to development of the power sector, promote transparency and competition and protect interests of consumers. In compliance with Section 3 of the *ibid* Act, the Government of India (GOI) prepared the National Electricity Policy (NEP) in February 2005 for development of power sector based on optimal utilisation of resources. The Policy aims at, *inter alia*, laying guidelines for accelerated development of the power sector.

2.1.2 During 2005-06, electricity requirement in West Bengal was assessed as 35,502.53 Million Units (MU) whereas 29,479.58 MU were available. The State had a shortfall of 6,022.95 MU which works out to 16.96 *per cent* of the total requirement. The total installed power generation capacity in the State of West Bengal as on 1 April 2005 was 7,661.40¹ Mega Watt (MW) against the peak demand of 4,768 MW. As on 31 March 2010 the comparative figures of requirement and available capacity were 49,530.79 MU and 39,031.50 MU with deficit of 10,499.29 MU (21.20 *per cent*) while the installed capacity was 10,476.53² MW. Thus there was a growth in demand of 14,028.26 MU during review period. The net capacity addition during the same period was 2,815.13³ MW. Out of the addition, 900 MW related to a load management unit Purulia Pump Storage Project (PPSP). PPSP used power during off-peak period to pump water to an overhead tank and utilised the same to generate power during peak period only. The total power generated was less than the power used for pumping water and therefore made no addition to the overall power availability⁴. The balance 1,915.13 MW of capacity addition was insufficient to meet the increased demand due to low Plant Load Factor (PLF).

The Calcutta Electric Supply Corporation (CESC) is a major private sector electrical utility in West Bengal and had been generating and distributing power in Kolkata and Howrah. They are the sole distributor of power to Kolkata and Howrah across a licensed area of 567 Sq. kms. CESC own and operate four⁵ thermal power plants having generation capacity of 975 MW (April 2005) which increased to 1,225 MW (March 2010).

2.1.3 In West Bengal generation of power is carried out by West Bengal Power Development Corporation Limited (WBPDCL), Durgapur Projects Limited (DPL), Dishergarh Power Supply Company Limited (DPSC), Calcutta Electric Supply Corporation (CESC) and West Bengal State Electricity Distribution

¹ Installed capacity of state PSUs was 3,569.20 MW

² Installed capacity of state PSUs was 5,620.53 MW

³ State PSUs 2,471.33 MW, CPSUs 500 MW, CESC 250 MW Others 13.80 MW including deration of 420 MW

⁴ As discussed in paragraph No. 2.1.38

⁵ Budge Budge, Southern, Titagarh and New Cossipore generating station

Company Limited (WBSEDCL)⁶. DPSC and CESC are privately owned companies while DPL, WBPDC and WBSEDCL are state-owned undertakings incorporated in September 1961, July 1985 and February 2007 respectively, under the Companies Act, 1956 as wholly owned government companies under the administrative control of the Department of Power & Non Conventional Energy Sources, Government of West Bengal. Erstwhile West Bengal State Electricity Board (WBSEB) was unbundled with effect from 25 January 2007 and two companies namely West Bengal State Electricity Distribution Company Limited (WBSEDCL) and West Bengal State Electricity Transmission Company Limited (WBSETCL) were vested with distribution and transmission activities respectively. The two companies started functioning from 1 April 2007. The WBSEDCL was also entrusted with the activities of hydro generation activities of the State. Further, the DPL has two other functional areas (coke oven, water works) which are distinct from its generation activities. The management of the companies is vested with a Board of Directors comprising of 12 directors each in case of WBPDC and WBSEDCL and 10 directors in case of DPL, all appointed by the State Government. The day-to-day operations are under the overall control of the respective Managing Directors, who are also the chief executives of the companies, with the assistance of General Managers / Project Managers (who head each power station). The companies had the following generating stations as on March 2010:

Sl. No.	Company	Location	Nature of station	Installed Capacity (MW)
1	WBPDC	Bakreshwar	Thermal	1,050
2	WBPDC	Kolaghat	Thermal	1,260
3	WBPDC	Santaldih	Thermal	490
4	WBPDC	Bandel	Thermal	450
5	WBPDC	Sagardighi	Thermal	600
6	DPL	Durgapur	Thermal	701
7	WBSEDCL	PPSP	Pump-storage	900
8	WBSEDCL	Jaldhaka	Hydro	35
9	WBSEDCL	Rammam	Hydro	51
10	WBSEDCL	Teesta Canal Falls	Hydro	67.50
11	WBSEDCL	Mini Micro Hydel Stations ⁷	Hydro	15.21
12	WBSEDCL	Sagar Island	Diesel	0.82

West Bengal predominantly has thermal power generation system with an insignificant share of hydro power. The hydro-thermal mix in West Bengal is 8:92 against a minimum desired level of 40:60 prescribed by CEA.

The aggregate turnover of the companies was 13,568.46⁸ crore in 2009-10, which was equal to 62.60 per cent and 3.69 per cent of the total turnover of

⁶ A successor company of the erstwhile West Bengal State Electricity Board (WBSEB)

⁷ Fazi Hydel Project (2.45 MW), Little Rangit Hydel Power Station (2 MW), Massanjore (4 MW), Mungpoo-Kalikhola (3 MW), Richington Hydel Power Station (2 MW), Sidrapong (0.60 MW) and Singtom (1.16 MW).

⁸ Figures for the Companies as a whole as included at Sl. No. 44, 46 and 47 of column No. 6 of Annexure 2

state PSUs and State Gross Domestic Product respectively. The companies employed 31,015⁹ employees as on 31 March 2010.

2.1.4 Reviews (including sectoral reviews) on the workings of the power generating companies included in the Reports of the Comptroller and Auditor General of India, Commercial, Government of West Bengal are as detailed below:

Year of Audit Report	Subject of review	Company / Power Station
1997-98	Overall activities (including generation of power)	DPL
2004-05	Environment management systems	WBPDC, DPL and erstwhile West Bengal State Electricity Board
2005-06	Operational Performance	Kolaghat Thermal Power Station of WBPDC
2007-08	Fuel management	Bandel & Santaldih Thermal Power Stations of WBPDC

The reviews in the Audit Reports upto 2005-06 were not discussed by COPU. The review on Fuel Management of WBPDC is yet to be discussed (November 2010).

Scope and Methodology of audit

2.1.5 The present review conducted during February to May 2010 covers the performance of the companies during the period from 2005-06 to 2009-10. The review mainly deals with planning, project management, financial management, operational performance, environmental issues and monitoring by top management relating to generation activities only of the State sector PSU Companies. Audit examination involved scrutiny of records at the Head Office and two¹⁰ out of five generating stations at WBPDC, generating unit at DPL and four¹¹ hydro generating stations of WBSEDCL. The selection was based on installed generation capacity as on 31 March 2010. The audit covered 72.32 *per cent* i.e. 4,064.50 MW out of the total installed capacity of 5,620.53 MW.

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, 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.

⁹ WBSEDCL – 21,894, DPL – 4,102 and WBPDC – 5,019 as per Sl. No. 44, 46 and 47 of column No. 8 of Annexure 1.

¹⁰ Bakreshwar Thermal Power Project (BkTTP) and Kolaghat Thermal Power Station (KTPS).

¹¹ PPSP, Jaldhaka, Rammam and Teesta Canal Falls Hydel plants.

Audit objectives

2.1.6 The objectives of the performance audit were to assess:

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;
- To ascertain whether the execution of projects were managed economically, effectively and efficiently; and
- To ascertain whether hydro projects were planned and formulated after taking into consideration safety aspects and the optimum design to get maximum power.

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 power plants were operated efficiently and preventive maintenance as prescribed was carried out minimising forced outages;
- To assess whether requirements of each category of fuel worked out realistically, procured economically and utilised efficiently;
- To assess whether manpower requirement was realistic and its utilisation optimal;
- To assess whether the life extension (renovation and modernisation) programme was ascertained and carried out in an economic, effective and efficient manner; and
- To assess the impact of renovation and modernisation / life extension activity on the operational performance of the Unit.

Environmental issues

- To assess whether various types of pollutants (air, water, noise, hazardous waste) in power stations were within prescribed norms and complied with statutory requirements.

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

2.1.7 Audit criteria adopted for assessing achievement of 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, PLF etc;
- comparison with best performers in the regions/ all India averages;
- prescribed norms for planned outages; and
- Acts relating to environmental laws.

Financial position and Working results

2.1.8 The financial position of WBPDCCL for the five years ending 2009-10 is given below. In addition to generation activities, DPL has three functions (distribution, coke-oven and water works) while WBSEDCL has distribution license. However, no separate segment accounts are prepared by DPL and WBSEDCL in respect of generation activities. Individual financial positions of these Companies are given in the **Annexure 7**.

West Bengal Power Development Corporation Limited

	Particulars	2005-06	2006-07	2007-08	2008-09	2009-10
		(₹ in crore)				
A	Liabilities					
(i)	Paid Up Capital	1,998.60	2,448.60	3,122.60	3,322.60	3,961.33
(ii)	Reserves & Surplus (including Capital Grants but excluding Depreciation Reserve)	182.55	431.88	516.74	634.85	660.50
(iii)	Borrowings (Loan Funds)					
(a)	Secured	696.58	1,811.99	2,352.02	2,972.77	3,539.52
(b)	Unsecured	5,314.64	2,842.13	2,959.98	3,224.76	3,013.68
(iv)	Current Liabilities & Provisions	1,099.98	1,107.24	1,169.39	1,600.23	2,061.25
	Total-A	9,292.35	8,641.84	10,120.73	11,755.21	13,236.28
B	Assets					
(i)	Gross Block	5,284.97	5,303.83	5,344.35	9,436.93	11,833.87
(ii)	Less: Depreciation	2,545.11	2,712.22	2,851.28	2,987.07	3,375.21
(iii)	Net Fixed Assets	2,739.86	2,591.61	2,493.07	6,449.86	8,458.66
(iv)	Capital Work-in-progress	1,400.75	3,622.39	5,076.86	2,587.27	1,005.89
(v)	Investments	28.80	25.80	27.44	29.69	29.39
(vi)	Current Assets, Loans & Advances	5,122.94	2,402.04	2,523.36	2,688.39	3,742.34
	Total -B	9,292.35	8,641.84	10,120.73	11,755.21	13,236.28

- Equity capital increased from ₹ 1,998.60 crore (2005-06) to ₹ 3,961.33 crore (2009-10) due to fresh infusion of equity capital by the State Government for different projects.
- Increase in current liability from ₹ 1,099.98 crore (2005-06) to ₹ 2,061.25 crore (2009-10) was mainly due to increase in sundry creditors, liability for expenses, liability for projects and provision for pension, gratuity etc.
- Increase in net fixed assets was due to capitalisation of new projects like Sagardighi Thermal Power Project (SgTPP) (Unit 1&2), Bakreswar Thermal Power Project (BkTPP) Unit 4&5 and Santaldih Thermal Power Station (STPS) (Unit 5).
- The net fixed asset in DPL increased due to capitalisation of new project (Unit 7) during 2007-08.
- The accumulated losses reflected in 2005-06 and 2006-07 in the accounts of WBSEDCL relate to the erstwhile WBSEB¹², which was restructured to form two companies, WBSEDCL and WBSETCL¹³. The reduction in accumulated losses was due to losses being absorbed by the State Government (January 2007) during restructuring.

2.1.9 The details of working results like cost of generation of electricity, revenue realisation, net surplus/ loss and earnings and cost *per* unit of operation for WBPDC and DPL from 2005-06 to 2009-10, are given in **Annexure 8**. The figures for DPL considered by us are as furnished by the Management. WBSEDCL has distribution activities beside hydro generation

¹² WBSEB-West Bengal State Electricity Board.

¹³ WBSETCL- West Bengal State Electricity Transmission Company Limited.

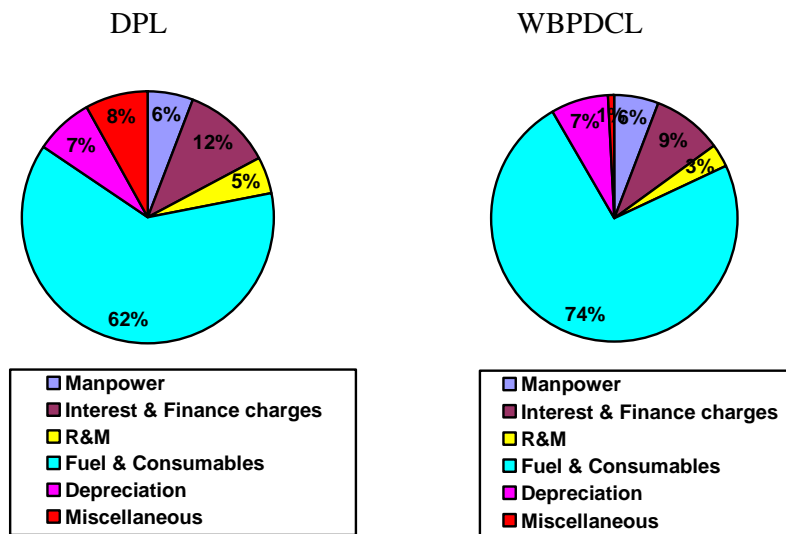
activities for which separate figures are not available. In absence of separate records relating to generation activities, the working results for the company have not been analysed in audit.

- As may be seen from **Annexure 8**, that in WBPDCCL the realisation per unit increased from ₹ 1.75 to ₹ 2.78 per unit in 2005-10. However, during the same period fixed cost per unit increased from ₹ 0.25 (2007-08) to ₹ 0.66 (2009-10) per unit mainly due to increase in interest & finance charges, employees cost and depreciation. The variable cost per unit in WBPDCCL increased from ₹ 1.45 to ₹ 2.16 per unit during review period mainly due to excess consumption of coal as discussed in para 2.1.23 and increase in price of coal.
- Similarly, in DPL the realisation per unit increased from ₹ 2.19 to ₹ 2.65 per unit in 2005-10. However, during the same period fixed cost per unit increased from ₹ 0.58 to ₹ 1.18 per unit mainly due to increase in interest & finance charges, employees cost and depreciation. The variable cost per unit in DPL increased from ₹ 1.51 to ₹ 2.42 per unit during review period mainly due to excess consumption of coal as discussed in para 2.1.23 and increase in price of coal.

Elements of cost

2.1.10 Fuel & Consumables and interest & finance charges constitute the major elements of cost in respect of both DPL and WBPDCCL. The percentage break-up of costs for 2009-10 is given below in the pie-chart.

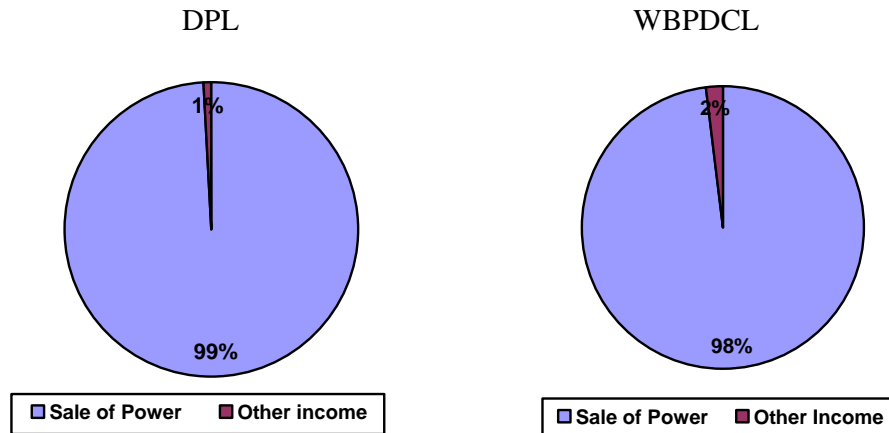
Components of various elements of cost



Elements of revenue

2.1.11 Sale of Power constitutes the major element of revenue. The percentage break-up of revenue for 2009-10 is given below in the pie-chart.

Components of various elements of revenue

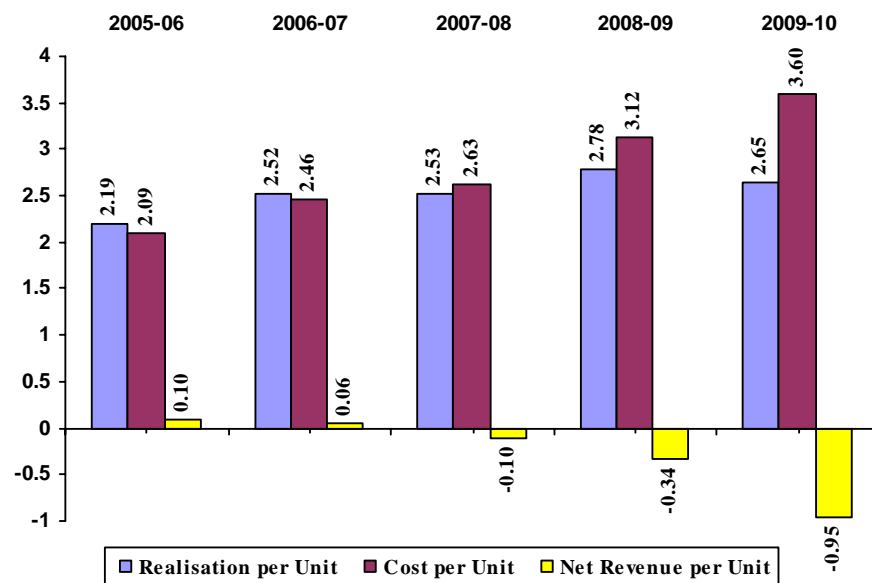


During the period covered in Audit, none of the generating companies received any subsidy from the state/central governments.

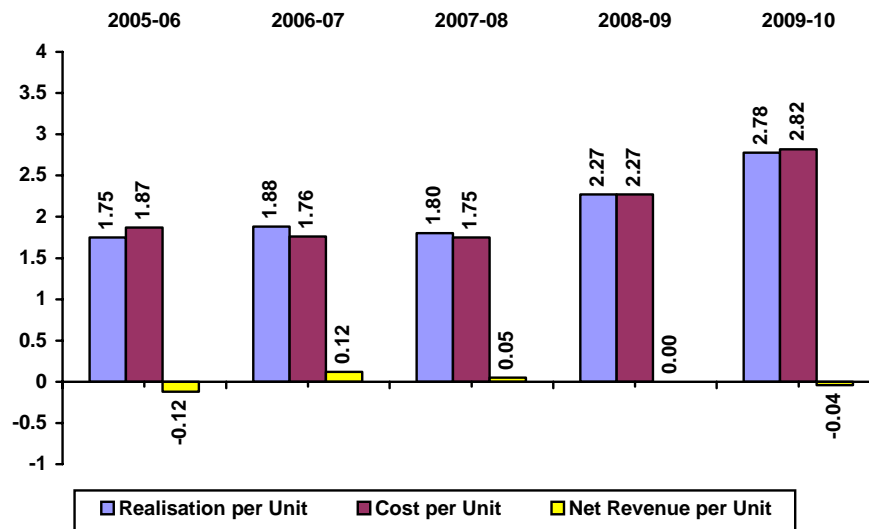
Recovery of cost of operations

2.1.12. The net revenue per unit of DPL and WBPDC are depicted below:

DPL



WBPDCCL



Analysis of financial position of the companies individually revealed that net revenue per unit at WBPDCCL increased from (-) ₹ 0.12 in 2005-06 to ₹ 0.12 in 2006-07 but declined to (-) ₹ 0.04 per unit in 2009-10. Had the total revenue earned by WBPDCCL been sufficient to cover the cost in 2005-06 and 2009-10, an additional amount of ₹ 233.57 crore could have been available for capacity addition/ life extension programmes. Similarly, at DPL, the net revenue per unit declined from ₹ 0.10 in 2005-06 to (-) ₹ 0.95 per unit in 2009-10. Had the total revenue earned by DPL been sufficient to cover the cost in 2007-08, 2008-09 and 2009-10, an additional amount of ₹ 336.81 crore could have been available for capacity addition/ life extension programmes. The main reasons for high cost of generation/ supply for DPL had been poor capacity utilisation, high level of auxiliary consumption, transmission & distribution losses and higher interest cost while for WBPDCCL the main reasons were attributed to high cost of generation, poor capacity utilisation, high level of auxiliary consumption and higher interest cost.

Audit findings

2.1.13 Audit explained the audit objectives to the companies during an 'entry conference' held on 29 January 2010. Subsequently, audit findings were reported to the companies and the State Government in June 2010. An 'exit conference' was held on 16 August 2010, which was attended by the Additional Chief Secretary, Department of Power & Non Conventional Energy Sources, Government of West Bengal and Managing Directors and General Manager (Power plant) of WBPDCCL, DPL and WBSEDCL. The companies also replied to audit findings in August 2010 and December 2010. Another exit conference was held on 9 December 2010 which was attended by Principal Secretary to the Department of Power & Non Conventional Energy Sources, Government of West Bengal, Managing Director of WBPDCCL and General Manager of DPL. The replies were duly endorsed by the State

Government. The views expressed by them have been considered while finalising this review. Our observations are discussed below.

Operational performance

2.1.14 Operational performance of the companies for the five years ending 2009-10 is given in the *Annexure 9*. Operational performance of the companies was evaluated on various operational parameters as described below. It was also seen whether the companies were able to maintain pace in terms of capacity addition with the growing demand for power in the State. Our findings in this regard are discussed in subsequent paragraphs. These findings show that the companies, on the whole, would not be in a position to meet the idealistic situation of “Power for all” by 2012. Further, the objective of supplying quality power at reasonable rates, as envisaged in the National Electricity Plan was also defeated mainly due to ineffective coal linkages and poor project management.

Planning

2.1.15 National Electricity Policy (NEP) aims to provide availability of over 1,000 Units of per capita electricity by 2012. This section deals with capacity additions and optimal utilisation of existing facilities. The power availability scenario in the state indicating own generation, purchase of power, peak demand and net deficit was as under:

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	3,299	4,768	3,733	69.19	88.37
2006-07	3,320	4,937	3,826	67.25	86.77
2007-08	3,512	5,373	4,044	65.36	86.84
2008-09	3,743	6,129	4,623	61.07	80.96
2009-10	4,255	6,652	4,979	63.97	85.46

The actual generation was 80.96 to 88.37 per cent of the average demand and 61.07 to 69.19 per cent of the peak demand

As may be seen from the above, actual generation was 80.96 to 88.37 per cent of the average demand and 61.07 to 69.19 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	Peak Demand met	Sources of meeting peak demand		Peak Deficit (Percentage of Peak Demand)
			Own ¹⁴	Import	
(in MW)					
2005-06	4,768	4,398.06	2,824	1,574.06	369.94 (7.76)
2006-07	4,937	4,176.10	2,696	1,480.10	760.90 (15.41)
2007-08	5,373	4,606.98	3,553	1,053.98	766.02 (14.26)
2008-09	6,129	5,312.11	4,013	1,299.11	816.89 (13.33)
2009-10	6,652	5,244.67	4,100	1,144.67	1,407.33 (21.16)

There remained a shortfall of 369.94 to 1,407.33 MW. The percentage of peak deficit increased from 7.76 per cent to 21.16 per cent of the peak demand even after import. Consequently, rotational load shedding is forced on the populace.

Capacity additions

2.1.16 The State had total installed capacity of 7,661.40 MW at the beginning of 2005-06 which increased to 10,476.53 MW at the end of 2009-10. The break up of generating capacities as on 31 March 2010, under thermal, hydro, central and IPP is shown in the table below:

Sector	Thermal	Hydro	IPP	Total
	(In MW)			
State	4,551.00	1,069.53	1,516.00 ¹⁵	7,136.53
Central	3,280.00	60.00	-	3,340.00
Total	7,831.00	1,129.53	1,516.00	10,476.53

To meet the energy generation requirement of 49,530.79 MU in the State, capacity addition of about 6,652 MW was required during 2005-06 to 2009-10. The projects categorised as 'Projects under Construction' (PUC) and 'Committed Projects'¹⁶ (CP) were earmarked for capacity addition during review period according to NEP and are detailed below.

Sector	Thermal	Hydro	Non conventional Energy	Total
	(In MW)			
PUC	1,170	900	NA	2,070
CP	NA	NA	NA	NA
Total	1,170	900	NA	2,070

The particulars of capacity additions envisaged in the state (including CESC), actual additions and peak demand vis-à-vis energy supplied in the State during

¹⁴ The own generation here may not tally with generation in previous table since the figures here relate to generation at the time of peak demand while generation in previous table relates to the whole year.

¹⁵ Includes CESC installed capacity of 1,225 MW

¹⁶ National Electricity Plan defines Committed Projects as projects for which formal approval to take up the same has been granted by the CEA.

review period are given below. The capacity additions of the State sector are given in **Annexure 10**.

Sl. No.	Description	2005-06	2006-07	2007-08	2008-09	2009-10
1	Capacity at the beginning of the year (MW)	7,661.40	7,661.40	7,581.40	8,731.72	10,006.53
2	Additions Planned for the year as per National Electricity Plan (MW)	420.00	250.00	1,400.00	-	-
3	Additions planned in the State sector (MW)	-	-	2,470.00	550.00	1,000.00
4	a) Actual Additions (MW)	-	-	1,150.32	1,374.81	710.00
	b) Deration (MW)	-	80.00	-	100.00	240.00
5	Capacity at the end of the year (MW) {1 + 4(a) – 4(b)}	7,661.40	7,581.40	8,731.72	10,006.53	10,476.53
6	Shortfall in capacity addition (MW) {4(a) – 3}	0.00	0.00	1,319.68	0.00	290.00
7	Peak demand (MW)	4,768	4,937	5,373	6,129	6,652
7A	Energy Requirement (MUs)	35,502.53	36,760.90	40,007.36	45,636.53	49,530.79
8	Energy supplied (MUs)					
	a) Energy produced					
	i) State PSUs	15,704.76	15,772.38	17,102.51	18,626.91	22,014.54
	ii) CESC	7,418.00	7,541.00	8,167.00	8,411.00	8,835.00
	b) Energy purchased					
	i) CPSU	6,283.82	6,475.56	7,401.08	8,718.01	8,127.96
	ii) CESC	73.00	72.00	75.00	73.00	54.00
9	Total Energy Supplied 8 (a)+8 (b)	29,479.58	29,860.94	32,745.59	35,828.92	39,031.50
10	Shortfall against energy requirement (7A-9)	6,022.95	6,899.96	7,261.77	9,807.61	10,499.29

The actual capacity addition 2,815.13 MW was less than 4,020 MW planned by the State

It may be seen from the above table that actual net capacity addition during the review (2,815.13 MW) was less than the addition planned by the State (4,020 MW). However, this included capacity addition of 900 MW at PPSP for load management, which consumed 2,472.12 MU during 2007-10 against 1,930.80 MU generated by it in the corresponding period. Due to consumption of more power than generation, it contributed to 1.96 per cent of shortfall during 2007-10. The detailed observations regarding PPSP are discussed in paragraph No. 2.1.39.

Project management

2.1.17 Preparation of an accurate and realistic Draft Project Report (DPR) after considering feasibility study, considering factors like creation of infrastructure facility, addressing bottlenecks likely to be encountered in various stages of project planning are critical activities in planning stage of the project.

Project management includes timely acquisition of land, effective action to resolve bottlenecks, obtain necessary clearances from Ministry of Forest and Environment and other authorities etc. However, time and cost over runs were noticed throughout the implementation of the projects during review period as discussed in succeeding paragraphs.

2.1.18 The following table indicates the scheduled and actual dates of completion of power stations, date of commencement of transmission, date of commissioning of power stations and time overruns.

Time overrun

Sl. No.	Phase-wise name of the Unit	Details	As per LOA	Actual dates	Time overrun (In months)
1	BkTPP, Unit 4 (210 MW)	Date of completion of unit	April 2007	March 2009	23
		Date of start of transmission		March 2008	11
		Date of commercial operation/ commissioning of unit		March 2009	23
2	BkTPP, Unit 5 (210 MW)	Date of completion of unit	July 2007	June 2009	23
		Date of start of transmission		March 2009	20
		Date of commercial operation/ commissioning of unit		June 2009	23
3	Sg TPP Unit-1 (300 MW)	Date of completion of unit	April 2007	September 2008	17
		Date of start of transmission		September 2008	17
		Date of commercial operation/ commissioning of unit		September 2008	17
4	Sg TPP Unit-2 (300 MW)	Date of completion of unit	July 2007	November 2008	16
		Date of start of transmission		November 2008	16
		Date of commercial operation/ commissioning of unit		November 2008	16
5	STPS extension Unit-5 (250 MW)	Date of completion of unit	April 2007	April 2009	24
		Date of start of transmission		April 2009	24
		Date of commercial operation/ commissioning of unit		April 2009	24
6	STPS extension Unit-6 (250 MW)	Date of completion of unit	September 2009	Not yet completed (November 2010)	14
		Date of start of transmission			
		Date of commercial operation/ commissioning of unit			
7	DPL, Unit 7 (300 MW)	Date of completion of unit	April 2007	April 2008	12
		Date of start of transmission		November 2007	7
		Date of commercial operation/ commissioning of unit		April 2008	12
PPSP					
8	Unit-I (225 MW)	Date of completion of unit	September 2000	July 2007	82
		Date of start of transmission		July 2007	82
		Date of commercial operation/ commissioning of unit		October 2007	85
9	Unit-II (225 MW)	Date of completion of unit	September 2000	August 2007	83
		Date of start of transmission		August 2007	83
		Date of commercial operation/ commissioning of unit		November 2007	86

Sl. No.	Phase-wise name of the Unit	Details	As per LOA	Actual dates	Time overrun (In months)
10	Unit-III (225 MW)	Date of completion of unit	January 2001	November 2007	82
		Date of start of transmission		November 2007	82
		Date of commercial operation/ commissioning of unit		February 2008	85
11	Unit-IV (225 MW)	Date of completion of unit		December 2007	83
		Date of start of transmission		December 2007	83
		Date of commercial operation/ commissioning of unit		January 2008	84

It would be seen from the above that out of 11 projects implemented during review period, none was completed in time. An analysis of unit selected in audit revealed that slippages in time schedule were avoidable at various stages of implementation as under:

- Delay in approval of engineering drawing/ documents by WBPDC/ DPL and project consultant, which had cascading effect in delaying the project.
- Delay in approval of sub-vendors as per contract (at BkTPP of WBPDC and DPL).
- Delay in supply of materials (BkTPP of WBPDC and DPL).
- Delay in awarding the works in case of PPSP.

Government attributed (December 2010) delay in completion of BkTPP to delayed submission of drawings, approval of sub-vendors and supply of materials etc. for which WBPDC was not responsible. However, the overall responsibility for completion of projects rested with the Company and the company should have safeguarded its interests better through closer coordination with the contractors at every stage.

The CEA had identified (April 2007) delay in supply of materials and poor project management as the major reasons for shortfall / slippages in the 10th plan. However, it was observed that projects implemented during the 11th plan were also plagued by the same problems, as detailed in **Annexure 11**.

Time overruns between seven to 84 months in the execution of power projects also led to cost overrun as discussed in succeeding paragraphs. This resulted in increase in cost of power generation from envisaged ₹ 2.20 per unit to ₹ 3.93 per unit and from ₹ 3.52 crore per MW to ₹ 4.81 crore per MW at BkTPP Unit 4 & 5. Similarly at DPL, there was an increase in cost of power generation from envisaged ₹ 2.11 per unit to ₹ 2.89 per unit and from ₹ 4.15 crore to ₹ 4.58 crore per MW. It would contribute to non achievement of objective of supplying power at affordable price as enshrined in NEP.

The time overrun varied between seven to 84 months in commercial operation of power projects

Estimated cost, actual expenditure, cost escalation and percentage increase in the cost in respect of the projects implemented in the state sector during review period are tabulated below:

Cost overrun

Sl. No.	Phase-wise name of the Unit	Estimated cost as per DPR	Awarded Cost	Actual expenditure as on 31 March 2010	Expenditure over and above estimate (6) = (5 - 3)	Percentage increase as compared to DPR (6) / (3)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
(₹ in crore)						
1	BkTPP (Unit 4 & 5)	1,479.00	1,132.78	2,020.32	541.32	36.60
2	SgTPP (Unit 1 & 2)	2,101.00	1,958.06	2,887.72	786.72	37.45
3	STPS Extension Unit-5	1,061.00	1,103.09	1,603.33	542.33	51.11
4	STPS extension Unit-6	1,082.11	928.52	724.39	Work-in Progress	
5	DPL Unit 7	1,246.80	844.00	1,375.00	128.20	10.28
6	PPSP	1,178.00	2,952.65	2,214.85	1,036.85	88.02
	Total	8,147.91	8,919.10	10,825.61	3,035.42	

It would be seen from above that there was a cost overrun ranging from 10.28 per cent to 88.02 per cent as compared to estimated cost. Reasons for cost escalation in respect of units selected in audit as analysed by us were as under:

- Delay of 15 to 54 months (from the date of government approval) in awarding major works leading to placement of orders at higher costs.
- Delay of five to 38 months in completion of various elements of the awarded work (**Annexure 11**).
- Due to time overrun, the interest during construction at DPL and BkTPP increased by ₹ 75.56 crore and ₹ 161.19 crore respectively leading to higher capitalised value of assets and higher depreciation increasing the per unit cost of generation.

While accepting increased IDC cost incurred by DPL the Government stated (December 2010) that extra expenditure was due to additional work executed. The contention is not correct since apart from IDC remaining additional cost was incurred on account of payment of service tax (₹ 19.13 crore) and variation of foreign exchange rates (₹ 33.51 crore) due to delay in completion of the unit.

Contract management

2.1.19 Contract management is the process of efficiently managing contracts (including inviting bids and award of work) and execution of work in an effective and economic manner.

During review period contracts valuing ₹ 10,825.61 crore were executed of which contract valuing ₹ 5,610.17 crore (51.82 per cent) were examined. The following were the major observations relating to contract management:

- CEA had observed (September 2007) that while other Central Government undertakings/ State power generating agencies had taken up turnkey projects of same capacity and same drawing design at a much lower cost, WBPDCCL had awarded the projects at a higher cost. During selection of supplier/ erection contractors, no comparison was made with respect to cost incurred by other Central/ State power generating undertakings in other states for implementation of same capacity and design projects by the Company. The increased cost in respect of BkTPP Unit 4 & 5, SgTPP Unit-1 & 2 and STPS Unit-5 worked out to ₹ 1,113.64 crore. This amount could have been avoided out of the total cost overrun of ₹ 1,870.37 crore in respect of the above three projects.
- Due to tardy progress of work, both WBPDCCL and DPL had to forego subsidy of ₹ 84.26 crore and ₹ 4.47 crore receivable respectively, under Accelerated Generation and Supply Programme (AG&SP) scheme.

Government stated (December 2010) that DPL had made an attempt to avail of the AG&SP subsidy. However, it was observed that the company could not complete the project within March 2007, which was a prime condition for availing of the AG&SP subsidy.

- The work for construction of silo for fly ash disposal at BkTPP was awarded to BHEL at a cost of ₹ 5.25 crore on turnkey basis. However, it could not be completed (November 2010) even after expiry of six years from the issue of LOA (November 2004). It was further observed that due to non completion of silo the construction of fly ash handling system was delayed by more than 12 months at Unit 4 & 5 of BkTPP, after synchronisation (March 2009/ June 2009). As a result 100 *per cent* fly ash generated was being sent to the ash pond (meant for 20 *per cent* bottom ash collection). This led to early filling up of ash pond than it would have if only 20 *per cent* ash was collected in the pond. Consequently, the ash from the pond had to be excavated (deposited from April 2009 to March 2010) at an additional cost of ₹ 6.99 crore. No compensation for the same had been claimed from the contractor (BHEL) till date (November 2010).
- At DPL it was observed that the ash pond envisaged in the DPR (at an estimated cost ₹ 34.14 crore) was not constructed. However, fly ash mechanism system was installed (March 2010) at an expenditure of ₹ 21.60 crore but DPL entered into an annual maintenance contract and incurred ₹ 1.54 crore for wash out of ash in the form of slurry, indicating non functioning of the ash handling system. Besides, DPL spent ₹ 7.51 crore for excavating 7,19,603 MT of wet ash.
- Non completion of fly ash disposal system at BkTPP also led to clinker formation and stoppage of operation of the Unit-4 for three months (December 2008 to February 2009) leading to loss of infirm power of 3.63 MU. This also led to delay in commercial operation date (COD) of the unit for that period.

- It was observed at DPL that though DPR was envisaged for Unit 7 of 250 MW and all statutory clearances were obtained (September 2002) for a 250 MW plant, notice inviting tender was, however, issued in July 2004 for “1 x 250MW+20 *per cent* extension” i.e. 300 MW plant, which resulted in delay in execution of the project by 23 months besides it rendered BHEL, the largest domestic PSU in the field of power plant construction technically unsuitable, as it had facilities to manufacture either a 250 MW plant or a 500 MW plant.

Government stated (December 2010) that BHEL participated in the tendering process of 250 MW + 20 *per cent*. However, it was observed that BHEL submitted their bid for 250 MW plant only and all necessary clearances were obtained for 250 MW plant but tender was floated for 300 MW plant.

Contract management at hydel power stations

- The Lodhama Interconnection Scheme (LICS) is a part of augmentation of Rammam Stage-II of WBSEDCL. It seeks to tap the Lodhama-Khola discharge during non monsoon period of eight months, divert the discharge to the existing tank and use the existing penstock to direct the water to the existing generator. The LICS is divided into two parts i.e. (1) Construction of diversion structure and desilting basin at Lodhama intake and (2) Construction of tunnel for Lodhama interconnection. It was also estimated that this scheme will augment 30.86 MU of annual generation of electricity. The total cost of the project including interest during construction (IDC) was estimated at ₹ 39.90 crore. The scheme was financed by Power Finance Corporation (PFC) to the extent of 50 *per cent*, for an amount of ₹ 19.95 crore and the balance 50 *per cent* was to be financed from own resources. The LICS was expected to be completed by October 2005 as per work order. After expenditure of ₹ 30.04 crore upto March 2010, the work was yet to be completed (November 2010). Due to this, the Company was deprived of additional generation of 136.29 MU (March 2010). Management attributed (August 2010) the delay to local disturbances and deviation of geological features from those envisaged. However, we observed that there was frequent stoppage of work by executing contractors and lack of monitoring/ correspondence with local authorities for timely completion of work.
- Jaldhaka Hydel Project (JHP) consists of two power houses with a total installed capacity of 35 MW. An additional unit of 9 MW was foreseen at initial design stage and penstock (branch) for the same had already been installed up to main inlet valve. The original completion date of the unit was considered to be August 2007. It was estimated that the annual gross generation from this unit would be 25.3 MU. Against the estimated cost of ₹ 12.38 crore, Letter of Award (LOA) was issued (August 2007) at a contract price of ₹ 24.29 crore (revised subsequently to ₹ 27.72 crore) with completion period of 23 months from placing of order i.e. by July 2009. The project has not been completed till date (November 2010) due to procedural delays like delay in preparation of

DPR (19 months), delay in issue of LOA (23 months) and tardy progress of work. Even after incurring a total expenditure of ₹ 12.79 crore (March 2010), WBSEDCL was not able to augment the energy generation to the extent of 65.36 MU (March 2010). Management attributed (August 2010) the delay to local disturbances and shortcomings on the part of major contractors. However, the Company did not impose penalty (upto maximum 10 per cent of contract value - ₹ 2.77 crore) for short comings on the part of contractor.

Input efficiency

Procedure for procurement of coal

2.1.20 The generating companies work out coal requirement on the basis of targets fixed by WBERC and past coal consumption trends. Coal requirement so assessed was conveyed to the Standing Linkage Committee (SLC) of the Ministry of Energy (MOE), Government of India, which decided the source and quantity of coal supply to TPS on quarterly basis. The generating companies in West Bengal received coal supply on the basis of such linkage determined by the SLC, though no separate coal supply agreements were entered into, except with Bengal Emta Coal Mines Limited (BECML)¹⁷ till March 2009. However, from April 2009, the generating companies directly entered into Fuel Supply Agreements (FSA) with coal companies in accordance with New Coal Distribution Policy notified by the Government of India in October 2007.

Government stated (December 2010) that all power stations have problems of availability of quality coal according to requirement. DPL tried to monitor coal procurement through departmental action. However, in the absence of quality coal supply by indigenous suppliers, possibility of import could have been explored.

2.1.21 The position of coal linkages fixed, coal received, generation targets prescribed and actual generation achieved during the period from 2005-06 to 2009-10 are given below while the TPS selected for audit are detailed in **Annexure 12.**

Year	Company	Coal Linkage	Actual Received	Short Received	Generation Target	Generation Achieved	Shortfall
		(in lakh MT))			(MU)		
2005-06	WBPDCD	117.75	100.50	17.25	14,759.46	15,109.00	
	DPL	20.25	17.04	3.21	1,950.00	2,175.88	-
2006-07	WBPDCD	124.80	110.72	14.08	15,079.62	15,613.88	
	DPL	19.80	15.50	4.30	2,000.00	1,781.06	218.94
2007-08	WBPDCD	151.50	119.67	31.83	15,624.75	16,805.12	
	DPL	22.35	13.86	8.49	2,501.95	1,569.76	932.19
2008-09	WBPDCD	171.90	135.77	36.13	17,945.32	17,149.91	795.41
	DPL	39.50	24.29	15.21	4,219.17	3,050.43	1,168.74
2009-10 ¹⁸	WBPDCD	199.00	142.45	56.55	23,062.07	20,887.13	2,174.94
	DPL	29.20	21.19	8.01	4,219.69	2,863.17	1,356.52

¹⁷ A group company where 26 per cent share-holding is held jointly by WBPDCD, DPL and WBSEDCL and balance 74 per cent is held by private party.

¹⁸ Based on firm fuel supply agreement with coal companies.

The analysis of the units selected in Audit revealed the following:

- Though BkTPP received between 83 and 93 *per cent* of coal requirement under linkage agreement during 2005-06 to 2008-09, it generated in excess of its targets each year. This was due to operation of the plant at a high plant load factor¹⁹ and gross calorific value (GCV) of coal being more than the designed GCV. In 2009-10, BkTPP received only 68 *per cent* of the coal to be supplied which led to loss of generation of 143.25 MU valued at ₹ 25.50 crore.
- At KTPS, coal received ranged between 82 to 90 per cent during 2005-06 to 2008-09 leading to loss of generation of 1,172.79 MU valued at ₹ 200.76 crore. Even after FSA in 2009-10 KTPS received only 83 *per cent* of the coal to be supplied leading to loss of generation of 595.45 MU valued at ₹ 108.97 crore.
- Similarly, at DPL, coal received fell short of requirement between 16 to 38 *per cent* during 2005-06 to 2008-09 leading to loss of generation of 2,319.87 MU valued at ₹ 615.92 crore. Even after FSA in 2009-10 DPL received only 73 per cent of the coal to be supplied leading to loss of generation of 1,356.52 MU valued at ₹ 359.48 crore.

Government attributed short receipt of coal to transportation problem which was the responsibility of the Railways. However, better coordination with the Railway authorities could have improved the position.

Quality of coal

2.1.22 Each thermal station is designed for usage of particular grade of coal. Usage of envisaged grade of coal ensures optimal generation of power and economic cost of generation. The grade of coal received from collieries was not always that specified as required by thermal stations. In accordance with the information furnished by management during the period from 2005-06 to 2009-10, BkTPP and KTPS received 112.86 lakh MT inferior grade coal for which claims of ₹ 610.36 crore were raised on the coal companies. Out of this, ₹ 263.94 crore were not admitted by the coal companies. This was because claims were to be raised on the basis of a third party sampling, and deviations in grade beyond the grade stated by the third party were not accepted by the coal companies. Similarly, DPL received 19.78 lakh MT inferior grade coal from BECML, against which an amount of ₹ 31.01 crore only was recovered out of a claim of ₹ 141.58 crore. This was due to the fact that as per agreement between the parties joint sampling at unloading point was to be done. However, BECML did not depute its officials for joint sampling despite requests from DPL.

Besides the above, during the period covered in review, an amount of ₹ 39.38 crore on account of stone and shale could not be recovered by DPL, due to non existence of agreements with ECL and MCL. Further, an amount of ₹ 5.69 crore was not allowed by BECML, even though agreement existed

¹⁹ The ratio between installed capacity and actual generation achieved.

due to the reasons as discussed above. BkTPP and KTPS could not recover ₹ 28.80 crore, though agreements for identifying and claiming the value of stone and shale, had been entered into with coal companies. This was due to the reason that the agreement provided for claim of stones of size exceeding 250 mm, the generating stations of WBPDCCL had not segregated stones over 250 mm and under 250 mm and raised their claim for the entire bulk.

While accepting our views Government attributed (December 2010) receipt of inferior quality of coal to absence of coal supply agreement and grade slippage not having been accepted by ECL.

Excess consumption of coal

The consumption of coal in excess of norm at BkTPP, KTPS and DPL was 84.94 lakh MT valued at ₹ 1,384.47 crore

2.1.23 Consumption of coal depends upon its calorific value. WBERC fixes the norm for various power generation stations for production of one unit of power. The **Annexure 13** depicts the norms fixed by WBERC for each station selected in audit, actual consumption for one unit of power and actual consumption of coal with reference to the norms. This resulted in excess consumption of coal to the tune of 84.94 lakh MT valued at ₹ 1,384.47 crore during the review period.

Government stated (December 2010) that due to age of the plant it was difficult for them to adhere to prescribed norms of WBERC. However, WBERC fixed the norms after considering all factors including age of plant.

Manpower

2.1.24 DPL does not have separate manpower allocation in respect of generation activities. However, the combined sanctioned strength in respect of generation and distribution activities of the Company vis-à-vis actual manpower for the five years covered under review is given below:

Sl. No.	Particulars	2005-06	2006-07	2007-08	2008-09	2009-10
1	Sanctioned strength	2,106	2,106	2,106	2,106	2,106
2	Actual manpower	2,434	2,401	2,468	2,821	2,829
3	Excess manpower as compared to sanctioned strength.	328	295	362	715	723
4	Expenditure on salaries (₹ in crore)	18.36	22.59	25.41	42.90	50.75
5	Extra expenditure with reference to sanctioned strength (₹ in crore) (4/2 x 3)	2.47	2.78	3.73	10.87	12.97

The table indicates that DPL incurred extra expenditure of ₹ 32.82 crore. No action was taken to rationalise its staff strength or explore ways to utilise them optimally.

It was observed in WBSEDCL that separate manpower allocation for generation activities was not done. In the absence of same, the Company may not be in a position to exercise effective management control over optimum

utilisation of manpower for its different activities. As regards WBPDC, the manpower was within the norms prescribed by WBERC as well as CEA.

Output efficiency

Shortfall in generation

2.1.25 Targets for generation of power for each year are fixed by the generation company and approved by the West Bengal State Electricity Regulatory Commission. It was observed that the State PSUs²⁰ was able to generate a total of 1,00,706.99 MU of power during 2005-06 to 2009-10 against a target of 1,09,612.33 MU fixed. This resulted in a net shortfall of 8,905.34 MU as shown in the following table:

Year	Target (MU)	Actual (MU)	Shortfall (MU)
2005-06	18,054.12	17,753.18	300.94
2006-07	18,424.28	17,807.70	616.58
2007-08	19,471.36	19,139.12	332.24
2008-09	24,376.15	21,145.60	3,230.55
2009-10	29,286.42	24,861.39	4,425.03
Total	1,09,612.33	1,00,706.99	8,905.34

Year-wise details of energy to be generated as per WBERC tariff orders, actual generation, plant load factor (PLF) as per WBERC norms (CEA norms in case of hydel power stations) and actual plant load factor in respect of the power stations selected in audit are as given in **Annexure 14**.

The details in the Annexure indicate that:

- For DPL actual generation and PLF achieved were lower than the targets of generation and PLF set by WBERC throughout the period covered by audit except in 2005-06. The net loss of generation due to operation of plant at lower plant load factor was 3,450.51 MU during the period.

Government stated (December 2010) that poor quality of coal resulted in frequent outages of units and tube leakage. However, WBERC fixed the target after considering these factors.

- Actual PLF at BkTPP was higher than the PLF as per WBERC norms, throughout the period of audit except a marginal shortfall in 2009-10. This was due to commissioning of new plants and adherence to periodic maintenance schedule.

Government stated that shortfall in generation was 5.8 MU for KTPS while BkTPP recorded generation much above the WBERC target. However, WBERC's targets furnished in the reply is different from the records. Further,

²⁰ Except Mini-Micro Hydel Station (15.21 MW) and diesel generating station at Sagar Island (0.82 MW).

the Government has considered the overall position in five years as a whole though WBERC considers year-wise achievement of target.

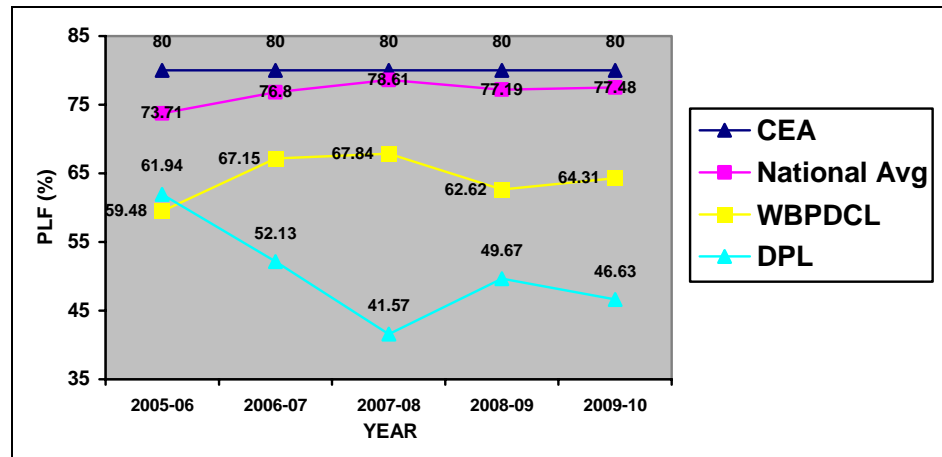
- At KTPS, the actual PLF was less than the PLF as per WBERC norms in three out of five years, leading to a net generation loss of 1,427.55 MU.
- As the PLF had been designed considering the availability of inputs the loss of generation during the period 2005-06 to 2009-10 indicated that resources and capacity were not being utilised to the optimum level due to frequent breakdown of units and delay in timely rectification of defects as discussed subsequently.
- In RHP, PLF ranged between 44.05 and 51.74 *per cent* during the period from 2005-06 to 2009-10. Shortfall was mainly attributable to non availability of required water during non monsoon period and delay in completion of Lodhama interconnection work for tapping Lodhama-Khola water discharge during non monsoon period of eight months.
- In TCFHP, PLF ranged between 5.64 and 17.13 *per cent* during the period from 2005-06 to 2009-10. The shortfall was mainly attributable to non availability of water, manual trash cleaning and forced outages.

WBSEDCL in reply stated (August 2010) that 60 *per cent* is not the appropriate PLF norm for run of the river hydel power stations. However, hydro potential in India has been computed by CEA on the basis of 60 *per cent* PLF for run of the river hydel stations, though neither WBERC nor CEA have specified norm for PLF of such hydel stations.

Low Plant Load Factor (PLF)

2.1.26 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 ranged from 73.71 to 77.48 *per cent*. Against this, the actual PLF of WBPDC and DPL are indicated below.

The PLF of GHTPS (Punjab State Electricity Board) was maximum at 95.99 *per cent* among all state sector thermal power stations.



The PLF of WBPDCCL increased from 59.48 *per cent* in 2005-06 to 67.84 *per cent* in 2007-08 and then declined to 64.31 *per cent* in 2009-10 in spite of the PLF of one of its plants (BkTPP) ranging from 78.37 *per cent* to 91.73 *per cent* during the same period. This was due to lower PLF of the other plants of WBPDCCL.

Government attributed overall low PLF of WBPDCCL to age of the plants at Bandel and Santaldih. However, 210 MW unit at Bandel and 250 MW unit at Santaldih were new while only 240 MW units each at Bandel and Santaldih were old.

At BkTPP the PLF for the years 2005-06 to 2008-09 was high but the reason for low PLF during 2009-10 was short receipt of coal and higher outages for frequent tube leakages. At KTPS the PLF during 2005-06 to 2009-10 was low due to low grade of coal. Besides the repair and maintenance of plant at KTPS was lagging as discussed in Para 2.1.32. On the other hand, the PLF of DPL declined constantly from 61.94 *per cent* 2005-06 to 46.63 *per cent* in 2009-10 due to frequent tube leakages, lack of proper maintenance and usage of low grade coal.

It was observed that though PLF norms were not fixed for hydro units, hydro potential in India was assessed at a PLF of 60 *per cent* as per the National Electricity Plan / CEA against which the national average ranged from 40.80 *per cent* to 63.20 *per cent*. The PLF ranged between 5.64 *per cent* and 55.50 *per cent* in RHP, JHP and TCFHP as discussed in para 2.1.25.

2.1.27 The realisation per unit of WBPDCCL was sufficient for recovery of cost per unit except in 2005-06 and 2009-10. However, DPL failed to recover its cost in 2007-10 mainly due to high cost of depreciation, interest & finance charges, administrative cost and shortfall in targeted generation.

Sl. No.	Description	2005-06	2006-07	2007-08	2008-09	2009-10
1	Realisation per unit (in ₹)	2.19	2.52	2.53	2.78	2.65
2	Cost per unit (in ₹)	2.09	2.46	2.63	3.12	3.60
3	Actual PLF (in percentage)	61.94	52.13	41.57	49.67	46.63
4	National PLF (in percentage)	73.71	76.80	78.61	77.19	77.48
5	Average realisation at National PLF (1 / 3 x 4) (in ₹)	-	-	4.78	4.32	4.40
6	PLF at which average cost stands recovered (2/1 x 3) (in percentage)	-	-	43.21	55.74	63.35
7	Difference (6 – 3) (in percentage)	-	-	1.64	6.07	16.72

Considering the National PLF during 2007-08 (78.61 per cent), 2008-09 (77.19 per cent) and 2009-10 (77.48 per cent) DPL achieved a PLF of 41.57 per cent, 49.67 per cent and 46.63 per cent during the same period. This resulted in loss of generation of 4,983.06 MU valuing ₹ 142.13 crore as loss of contribution.

Plant availability

2.1.28 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 2004-09 and 85 per cent during 2010-14, the average plant availability of power stations was 74.10 per cent during the five years up to 2009-10.

The overall plant availability in the state sector was 79.29 per cent during the review period.

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

Sl. No.	Particulars	2005-06	2006-07	2007-08	2008-09	2009-10
1	Total hours available	2,10,240	2,10,240	2,10,816	2,27,352	2,58,696
2	Operated hours	1,63,868	1,64,674	1,60,951	1,62,564	1,71,758
3	Planned outages (in hours)	11,827	7,178	9,306	20,021	26,815
4	Forced outages (in hours)	34,545	38,388	40,559	44,767	60,123
5	Percentage of planned outage	5.63	3.41	4.41	8.81	10.37
6	Percentage of forced outage	16.43	18.26	19.24	19.69	23.24
7	Plant availability (per cent)	77.94	78.33	76.35	71.50	66.39

The above table indicates a healthy plant availability factor (PAF) for all the power stations in totality. However, analysis of PAF of individual units placed at **Annexure 16** revealed that PAF of BkTPP ranged from 86.39 to 96.34 per cent, PAF of KTPS ranged from 80.96 to 90.18 per cent whereas PAF of DPL ranged from 60.56 to 77.01 per cent. The relative poor performance of DPL was due to age of the plants and not taking up repairs and

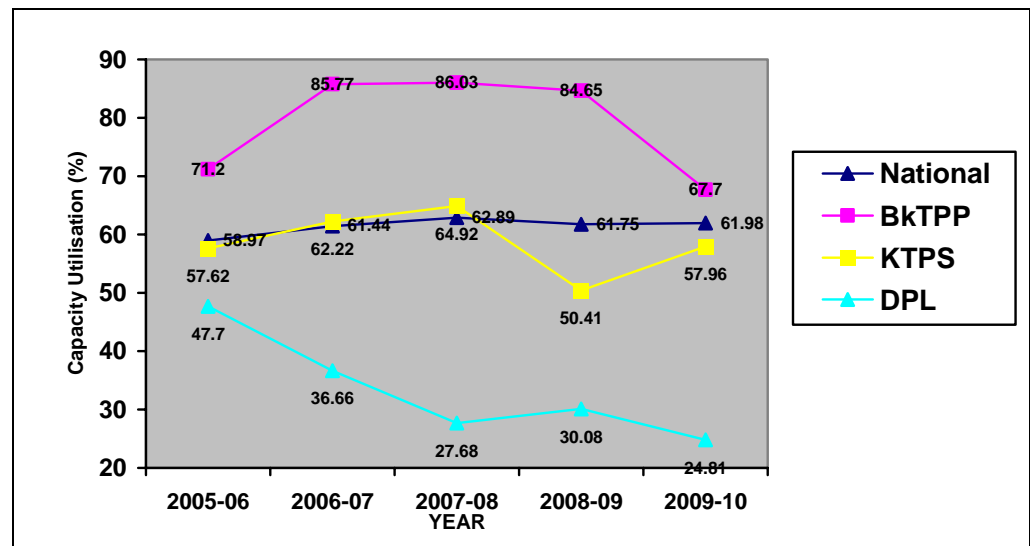
renovation on time. The decline in PAF during 2008-09 and 2009-10 was due to the increase in the hours of planned outage relating to new unit commissioned during the period.

Plant availability of hydel power stations

In respect of hydro station selected in review it may be seen from **Annexure 16** that plant availability for 2005-10 was below the norm of 87.5 per cent fixed by CEA. It ranged between 10.46 to 12.85 per cent, 51.90 to 61.51 per cent and 2.67 to 6.45 per cent for JHP, RHP and TCFHP during review period respectively, for reasons as discussed in Para 2.1.25.

Low capacity utilisation

2.1.29 Capacity utilisation means the ratio of actual generation to possible generation during actual hours of operation. Based on national average PLF of respective years and plant availability at 80 per cent, the standard capacity utilisation factor works out from 59 to 63 per cent for power plants. Our analysis of BkTPP, KTPS and DPL revealed that 13.97 to 75.19 per cent of the installed capacity remained unutilised (**Annexure 15**).



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

- Running of units with partial load/outages; and
- Reduced capacity of old generating unit.

Shortfall in capacity utilisation of three hydro power projects (JHP, RHP and TCFHP) ranged between 68.17 and 99.85 per cent during the period from 2005-06 to 2009-10. The reasons were attributable to low PLF, delay in execution of R&M works undertaken for augmentation and non availability of water.

Outage

2.1.30 Outages refer to the period for which the plant remained closed for attending planned/ forced maintenance. Total hours of forced outages and planned outages against total available hours for the units selected in audit, are given in **Annexure 16**. It was observed that:

- The percentage of planned outages at BkTPP and KTPS remained within the norm (10 *per cent*) prescribed by CEA during the review period. Further, the percentage of forced outages varied from 2.15 to 9.04 *per cent* and 3.55 to 10.96 *per cent* for BkTPP and KTPS respectively during 2005-10.
- At DPL, the percentage of planned outages ranged from 2.34 to 26.99, exceeding the norm of 10 *per cent* in 2008-09 and 2009-10. Percentage of forced outages remained in the range of 19.54 to 29.25 during review period. This indicated non adherence to preventive maintenance schedules leading to increased incidence of breakdowns.
- The percentage of actual planned outages in JHP ranged between 9.51 *per cent* and 38.77 *per cent* during 2005-2008. The plant is under shut down since 2008-09. Further, in RHP it ranged between 27.99 *per cent* and 43.48 *per cent* during the period from 2005-06 to 2009-10.
- In JHP, PLF ranged between 37.98 and 55.50 *per cent* during the period from 2005-06 to 2007-08. The plant remained closed during the years 2008-09 and 2009-10 due to renovation and modernisation works. The shortfall is attributable to excess planned outage, forced outages and closure of unit for renovation and modernisation work.
- The actual planned outages in TCFHP ranged between 0.40 *per cent* and 76.08 *per cent* during the year 2005-10.
- Forced outage ranged between 11.58 and 23.04 *per cent*, 0.46 and 16.57 *per cent* and 12.13 and 83.58 *per cent* in JHP, RHP and TCFHP respectively during 2005-10.
- Reasons for excess planned / forced outages have been discussed in para 2.1.28.

Auxiliary consumption of power

2.1.31 Energy consumed by power stations themselves for running their equipments and common services is called auxiliary consumption. Through its various tariff orders WBERC allowed between 9 to 10.5 *per cent* of the power generated to be used as auxiliary consumption during 2005-06 to 2009-10 in WBPDC and DPL. However, actual auxiliary consumption of power stations in

Wanakbori Thermal Power Station (Gujarat) recorded the lowest auxiliary consumption of 7.2 per cent in 2008-09, among all state sector power stations.

WBPDCCL ranged between 10.52 to 12.18 and in DPL it ranged from 9 to 12.47 *per cent* resulting in excess consumption of 729.31 MU (WBPDCCL: 576.85 MU and DPL 152.46 MU) valuing ₹ 140.90 crore which could not be dispatched to the grid. The energy auditor of WBPDCCL and DPL suggested (December 2006) use of energy efficient equipment and over-hauling of old apparatus for checking the rate of auxiliary consumption. However, no action had been taken by either company on the above suggestions (November 2010).

As per WBERC norms the admissible auxiliary consumption for JHP, RHP and TCFHP was 0.5 *per cent* of gross generation. It was observed that it remained within the norms except it was 0.62 *per cent* in 2008-09 and 0.58 *per cent* in 2009-10 for JHP. Actual auxiliary consumption was within norms at RHP. However, the percentage of auxiliary consumption in JHP was 0.60 and 0.58 *per cent* during 2006-07 and 2007-08 and in TCFHP it ranged between 1.05 and 5.09 *per cent* during 2005-10 resulting in excess auxiliary consumption of six MU. The company admitted (August 2010) the percentage of auxiliary consumption was higher than norms and stated that action would be taken to reduce it to acceptable norms.

While accepting the facts and figures Government (December 2010) stated that auxiliary power consumption was reduced by one *per cent* at KTPS. However, it still remained on the higher side (11.61 *per cent*).

Repairs & maintenance

2.1.32 To ensure long term sustainable levels of performance, it is important to adhere to periodic maintenance 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 the Indian Boiler Act, 1923 boilers are required to be overhauled annually. Further, the Kukde Committee, constituted by CEA, recommended (May 2001) capital maintenance of boilers every alternate year within a period of 30 days with 15 days mini shut down for statutory inspection during the year subsequent to year of capital maintenance. Moreover, capital maintenance of turbo generator is to be done once in every five years along with boilers and should not exceed 50 days. We observed that annual maintenance of units of BkTPP and KTPS were done after a delay ranging from six to 39 months and from three to 39 months at DPL. The delayed maintenance caused continuous deterioration in the condition of machines causing forced outages besides increased consumption of oil, coal and loss of generation of power as discussed in the input performance. The delay in repair and maintenance are given in **Annexure 17**.

Government stated (December 2010) that overhauling was delayed due to severe power crisis in the state. However, non adherence to norms of CEA led to increase in forced outages which in turn intensified the power crisis.

Renovation & modernisation

2.1.33 Renovation & Modernisation (R&M) and refurbishment activities involve identification of the problems of unit of TPS, preparation of techno economic viability reports, preparation of detailed project reports (DPR) to lay down benefits to be achieved from these works. R&M activities are undertaken in TPS operating at Plant Load Factor (PLF) of 40 *per cent* and below after assessing the performance and requirement of the units.

2.1.34 Refurbishment activities are aimed at extending economic life of the units by 15 to 20 years which have served more than 20 years or are operating at PLF below 40 *per cent*. Necessary permission and clearance for R&M and refurbishment activities from WBERC are obtained. Residual Life Assessment (RLA) study is also conducted for all refurbishment activities and in major R&M works. DPL has seven units as on March 2010. Renovation, upgradation, modernisation and life extension programme for Units I to V was completed in 2002-03.

- Unit VI (commissioned in 1985) at DPL had a capacity to generate 110 MW. As per norms of CEA, residual life assessment (RLA) study was conducted (July 2006) which found that the unit needed refurbishment/ replacement to restore operating life for another 20 years. Though overhauling was carried out (August 2006) the refurbishment as required under RLA study was not done. This led to increase in the incidence of tube leakages due to which the unit suffered a breakdown (October 2006) and could only be re-commissioned in March 2008. This resulted in generation loss of 604.83 MU valuing ₹ 152.81 crore.

Government stated (December 2010) that the loss suffered on Unit VI was not due to R&M work not having been carried out. However, no specific reason was cited for the breakdown.

- At WBPDCCL, 4 x 80 MW Bandel TPS was commissioned in 1965 and subsequently derated to 4 x 60 MW after RLA study in the year 2006-07. The 5th plant i.e. 210 MW plant is a new one which was commissioned in the year 2004-05 and achieved more than 50 *per cent* PLF. Similarly, the Santaldih Unit 1 to 4 of 120 MW each was old and management had decided to abandon those plants out of which two plants (120 MW x 2) were closed in 2009-10. The other two BkTTP and SgTTP are new and hence no renovation and modernisation was required. The observation on KTPS is given in the following paragraph:
- WBPDCCL had taken up (March 2001) R&M activities after identifying problems in Units 1, 2 and 3 of KTPS at a total cost of ₹ 96.92 crore which was scheduled to be completed in March 2003. The Board of Directors approved the scheme in February 2005 after a delay of four years. The R&M sought to improve PLF to 66 *per cent* from the earlier 54.9 *per cent*. The Company decided (February 2005) to avail loan assistance to the tune of ₹ 30 crore at an interest rate of

7.15 per cent per annum from Power Finance Corporation (PFC). The balance expenditure was to be met from internal sources. After spending ₹ 56.42 crore up to September 2006 the work was stopped and it was proposed to include the remaining work during scheduled R&M in the 11th Plan. However, this had not been approved by the Board of Directors till date (March 2010). Thus, even after expenditure of ₹ 56.42 crore, the targeted PLF of 66 per cent was not achieved resulting in generation loss of 363.51 MU valued at ₹ 61.08 crore.

While accepting the fact Government stated (December 2010) that approval could not be obtained for the R&M works (estimated cost: ₹ 220.80 crore) from CEA or WBERC. Therefore, the company spent ₹ 5.52 crore for meeting the basic requirements. However, adhoc steps taken by the Management for R&M works could not bring down the incidence of higher outages thereby defeating the objective of the works.

- Renovation, modernisation (R&M) and upgrading work for existing units of JHP was scheduled to be completed in 38 months and the original completion date of the project was August 2007. It was estimated that after R&M, the annual gross generation would be enhanced by 141.40 MU. Total expenditure was estimated at ₹ 52.17 crore, but later revised to ₹ 88.62 crore, with 70 per cent of the cost being met by loan from Rural Electrification Corporation. We observed that the project has not been completed till date (November 2010) leading to time overrun of 39 months. There was no generation at JHP from January 2008 onwards due to incomplete renovation and modernisation work. Due to this, the company was deprived of additional generation of 365.26 MU, inspite of incurring an expenditure of ₹ 50.75 crore (upto March 2010).

WBSEDCL attributed (August 2010) the delay of eight months to social and political turmoil in hill areas with consequential delay for remobilisation of work. However, the fact remain that even after giving allowances of eight months of delay for the reason mentioned above the work was behind schedule by 31 months and still remained incomplete.

Operation and maintenance

2.1.35 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 station etc. but exclude expenditure on fuel.

WBERC did not specify any norm for O&M expenditure up to 2007-08. Thereafter, as per prescribed norms, DPL was entitled to ₹ 154.61 crore towards reimbursement of O&M expenditure in 2008-09 and 2009-10, which it was allowed to claim through tariff petitions. However, it was observed

from the annual accounts of DPL that the company's expenditure on this head was only ₹ 115.31 crore, which led to excess recovery of ₹ 39.30 crore from the consumers. This had not yet been adjusted from subsequent tariff orders or annual performance review orders (November 2010).

At WBPDCCL the expenditure on O&M was observed to be within the allowable norms specified by WBERC. Differential claim on account of expenditure on O&M claimed initially was adjusted subsequently through annual performance review orders (APR) of WBERC.

However, in case of the hydel power stations and PPSP, the actual expenditure on O&M was lower than the amount allowable as per WBERC norms (effective from 2008-09).

Financial management

2.1.36 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.

Main sources of funds were realisation from sale of power, loans from State Government/Banks/Financial Institutions (FI), etc. These funds were mainly utilised to pay power purchase bills, fulfill debt servicing obligations, meet employee and administrative costs, and carry out system improvement works of capital and revenue nature. Details of sources and utilisation of resources on actual basis for WBPDCCL are given below while for DPL the cash flow statement is given in **Annexure 18**. WBSDCCL is a distribution company having limited generation activities. No separate cash flow for generation activities is prepared by them.

(₹ in crore)

WBPDCCL						
Sl. No	Particulars	2005-06	2006-07	2007-08	2008-09	2009-10
Cash Inflow						
1	Net Profit/ (Loss)	24.97	287.78	206.72	132.23	28.14
2	Add: adjustments	279.67	161.97	122.88	286.38	897.57
3	Operating activities	142.67	2,806.52	0.00	27.20	208.23
4	Investing activities	72.60	97.54	130.11	105.58	45.34
5	Financing activities	656.46	450.00	1,331.89	1,085.52	994.39
	Total	1,176.37	3,803.81	1,791.60	1,636.91	2,173.67
Cash Outflow						
6	Operating activities	224.12	382.98	366.36	807.33	1,417.66
7	Investing activities	740.86	1,894.66	1,256.62	1,304.28	573.81
8	Financing activities	12.51	1,451.64	84.15	167.67	468.32
	Total	977.49	3,729.28	1,707.13	2,279.28	2,459.79
	Net increase/ decrease in cash and cash equivalent	198.88	74.53	84.47	(642.37)	(286.12)

It could be observed from the above table that cash and cash equivalent increased during 2005-06 to 2007-08 whereas it decreased in 2008-09 and 2009-10. The cash inflow increased mainly through loan from financial

institutions and from infusion of share capital by the State Government for utilisation in project implementation. We observed that dependence on borrowed funds (secured loans) increased during review period as borrowing increased from ₹ 696.58 crore in 2005-06 to ₹ 3,539.52 crore (408 *per cent*) as at the end of 2009-10. This entailed interest burden of ₹ 588.01 crore during review period, ultimately increasing the operating cost of WBPDCCL. Heavy capital expenditure coupled with interest commitment of loans without adequate returns due to delay in commercial operation of the plant caused significant increase in cost of operation.

While accepting the views of audit Government stated that due to various operational difficulties cash and cash equivalent position was adverse in WBPDCCL.

Further, it was observed that:

- From 2005-06 to 2009-10, the average monthly cash balances in DPL varied from ₹ 2.90 crore to ₹ 34.59 crore, which remained in the current account resulted in loss of interest of ₹ 1.16²¹ crore as worked out in Audit. It was observed that no auto-sweep facility was availed of by the company, and hence, there was no automatic transfer of idle funds to interest-generating funds. Had the Company made any cash management policy in this regard, it could have generated interest income from idle fund.

Government stated (December 2010) that DPL's banker did not have auto sweep facility. Since WBPDCCL and WBSEDCL availed of auto sweep facility, adequate steps could have been taken to facilitate the same for DPL.

- As per the guidelines of Central Electricity Regulatory Commission (CERC), TPS have to maintain spares of Rupees four lakh for each MW of installed capacity. Accordingly, the value of spares to be maintained by WBPDCCL at BkTPP and KTPS worked out to ₹ 92.40 crore. As at the end of 2009-10, spares held valued ₹ 187.09 crore resulting in holding of spares in excess of norm by ₹ 94.69 crore. This resulted in locking up of funds and corresponding loss of interest (at 8²² *per cent*) of ₹ 7.58 crore for one year alone. Holding of spares was within norms at DPL.

Tariff fixation

2.1.37 WBERC fixed tariff rates based on recovery of projected cost *plus* return on equity at 14.5²³ *per cent*. Any under or over recovery of projected cost, is claimed by WBPDCCL and DPL through Annual Performance Review, filed after finalisation of annual accounts for the respective financial years.

²¹ ₹ 2.90 crore x 8 *per cent* x 5 years = ₹ 1.16 crore.

²² 8 (eight) *per cent* being the rate of interest on government loans.

²³ Revised to 16.5 *per cent* from 2009-10.

WBPDCCL and DPL were 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 WBERC. The Commission accepts the application filed by the companies with such modifications/ conditions as may be deemed just and appropriate and after considering all suggestions and objections from public and other stakeholders, and issues an order containing the generation tariffs for the year.

The Commission sets performance targets for each year of the control period for the items or parameters that are deemed to be “controllable” and which include:

- (a) Station Heat Rate;
- (b) Availability;
- (c) Auxiliary Energy Consumption;
- (d) Secondary Fuel Oil Consumption;
- (e) Operation and Maintenance Expenses;
- (f) Plant Load Factor;
- (g) Financing Cost which includes cost of debt (interest), cost of equity (return); and
- (h) Depreciation.

Any financial loss on account of underperformance on targets for parameters specified in Clause (a) to (e) is not recoverable through tariff.

We noticed that DPL and WBPDCCL filed the application after delay as shown below:

Sl. No	Description	2005-06	2006-07	2007-08	2008-09 ²⁴	2009-10
1	WBPDCCL					
	Scheduled date of filing	01.12.2004	01.12.2005	02.12.2006	01.12.2007	01.12.2008
	Actual Date	17.01.2005	16.12.2005	23.03.2007	30.05.2008	30.05.2008
	No. of days delayed	46	15	111	179	No delay
2	DPL					
	Scheduled date of filing	01.12.2004	01.12.2005	02.12.2006	01.12.2007	01.12.2008
	Actual Date	15.01.2005	16.12.2005	23.03.2007	30.05.2008	30.05.2008
	No. of days delayed	45	15	111	179	No Delay

We observed that though the companies filed the application after delay, WBERC made the revised tariff effective from 1 April of respective years due to which there was no loss of revenue to the companies. However, the recovery of revised tariff was made in subsequent months due to which the companies had to incur potential loss of interest of ₹ 53.60 lakh and ₹ 2.15 crore to DPL and WBPDCCL respectively during the above period.

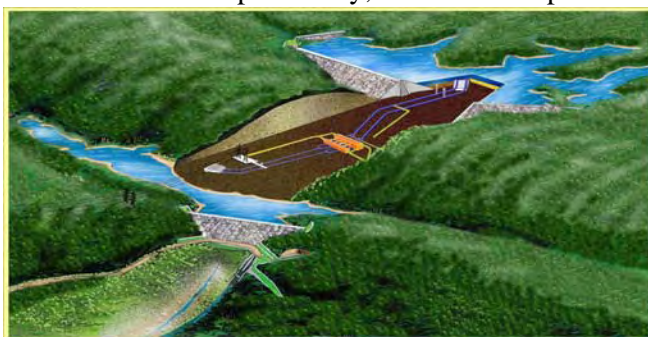
²⁴ Multi year tariff for 2008-09 to 2010-11.

Purulia pump storage project

2.1.38 PPSP was envisaged with a view to improve hydro-thermal power mix in the State of West Bengal and to meet the energy demand during peak hour period. In the pumped storage technique, water is pumped from lower reservoir to a higher one during non peak period of the day to generate and provide electricity during peak hour period thus minimisation of the peak load demand. With this view, the 900 MW capacity (4 x 225 MW), PPSP was commissioned and put to commercial operation during October 2007 to January 2008. Audit observations relating to operational performance and plant availability at PPSP are discussed in the succeeding paragraphs.

Consumption / generation of power and cost analysis:

2.1.39 As mentioned previously, PPSP utilises power during off-peak period to



pump water from the lower dam to the upper dam and release the water to generate power during peak period. Considering that the difference between the peak-hour tariff and the off-peak

tariff was the margin which defined viability of PPSP, it was imperative for the company to ensure that the power it generated was sold at highest peak hour rate obtainable.

Our scrutiny with reference to above objective revealed that:

- PPSP consumed more power for pumping of water required for generation than power generated. It generated 392.62 MU, 669.83 MU and 868.35 MU against consumption of 498.72 MU, 859.62 MU and 1,113.78 MU respectively during the period 2007-08 to 2009-10 besides auxiliary consumption of 4.71 MU, 17.47 MU and 15.99 MU during the same period.
- Cost of generation per unit at PPSP was ₹ 5.04 and ₹ 4.69 during 2008-09 and 2009-10. Against this, the average tariff per unit during peak hours was ₹ 4.74 and ₹ 4.79 for the years 2008-09 and 2009-10 respectively.
- Since PPSP generated expensive power it should have kept records to ensure that entire cost was recovered. However, they neither fixed nor applied for a separate tariff though WBERC permitted for the same.
- Even if average peak hour tariff is considered, there is an under-recovery of ₹ 19.57 crore during 2008-09 and a break-even during 2009-10, as detailed in **Annexure 19**. It may also be mentioned that

the DPR for PPSP estimated a generation between 1,235 GWh²⁵ and 1,971 GWh at a cost ranging from ₹ 0.72 to ₹ 0.89 per unit. The basis of such cost projections seemed deflated in view of the actual cost per unit recorded by PPSP. In view of the same, the objective of PPSP as envisaged may not be achievable.

Plant availability and capacity utilisation at PPSP

2.1.40 PPSP was designed to meet the extra power demand during the peak period of six hours to stabilise power distribution system. Details below indicate total available hours, hour operated, stand by hours, plant availability and actual generation.

Sl. No	Particulars	2007-08	2008-09	2009-10
1	Total available hours for generation ²⁶	2,586	8,760	8,760
2	Actual operated hours	1,439	3,659	4,730
3	Standby hours (including planned and forced outages)	1,147	5,101	4,030
4	Percentage of Plant availability (actual operated against total available hours)	55.65	41.77	53.99
5	Maximum possible generation (in MU) within the hours operated {(2) x 80 per cent x 900 MW}/1000	1,036.08	2,634.48	3,405.60
6	Actual generation (in MU)	392.62	669.83	868.35
7	Shortfall in generation (in MU)	643.46	1,964.65	2,537.25

During peak hours in 2007-10, four units of PPSP operated between 1,439 and 4,730 hours, with hours in stand-by mode ranging from 1,147 to 5,101. This meant that PPSP operated for 41.77 per cent to 55.65 per cent of potential hours. Even during the hours operated, PPSP could not generate at the level of 80 per cent, as specified by the CEA for pump storage projects, and shortfall in generation worked out to 5,145.36 MU valuing ₹ 1,244.07 crore. Simultaneously, peak hour shortage in the state ranged between 766.02 MW to 1,407.33 MW during 2007-08 to 2009-10. Thus, the objective of meeting peak period shortage had not been achieved. Management stated (April 2010) that the plant had operated to meet the quantum of energy demanded by the State Load Despatch Centre (SLDC). However, reasons for not exploiting full available capacity of PPSP were not furnished.

Auxiliary consumption

2.1.41 As per the norms of the WBERC, the auxiliary consumption of PPSP was 0.7 per cent of gross generation. The table below depicts the power generation and auxiliary consumption of the PPSP for last three years from 2007-08 to 2009-10.

²⁵ Giga Watt per hour (meaning 1 x 10⁹ Watt, or 1 x 10⁶ KWh)

²⁶ Based on six operating hours per day

Particulars	2007-08	2008-09	2009-10
	<i>(in MU)</i>		
Total Generation	392.62	669.83	868.35
Actual Auxiliary consumption	4.71	17.47	15.99
Percentage of auxiliary consumption	1.20	2.61	1.84
Auxiliary consumption as per norm (0.7 per cent)	2.74	4.69	6.08
Excess Auxiliary consumption	1.97	12.78	9.91

Thus, auxiliary consumption of PPSP was in excess by 24.66 MU over the norm fixed by WBERC during the period from 2007-08 to 2009-10 resulting in loss of revenue of ₹ 5.96 crore.

In the exit conference, the State Government stated (August 2010) that separate tariff fixation for PPSP was essential.

Environment issues

2.1.42 In order to minimise the adverse impact on the environment, the GOI had enacted various Acts and statutes. At the State level, West Bengal State Pollution Control Board (WBPCB) is the regulating agency to ensure compliance with the provisions of these Acts and statutes. Ministry of Environment and Forests (MoEF), GOI and Central Pollution Control Board (CPCB) are also vested with powers under various statutes. WBPDC and DPL have separate environmental wings.

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

Operation of plant without consent

- On three occasions, consequent upon expiry on 31.08.2005, 31.08.2007 and 31.08.2009 KTPS applied for renewal of consent to West Bengal Pollution Control Board (WBPCB) with delays of 60, 28 and 59 days respectively. Thereafter, renewal of consent by WBPCB was delayed by 89 to 181 days respectively. Further, due to non compliance with conditions set out in consent letter, several show cause notices were issued to WBPDC. WBPCB even warned (October 2008) closure of plants in the interest of public health and environment. During the period from May 2007 to August 2009, KTPS deposited a fine of ₹ 30.00 lakh. Besides, the plant operated without authorisation under the provision of the Hazardous Waste (Management & Handling) Rules²⁷, 1989 for a period of 103 days (from 22.09.2007 to 03.01.2008) due to delay in submission of application for consent to handle waste. Similarly BkTPP operated without authorisation under Hazardous Waste Rules for 90 days (from 01.01.2010 to 31.03.2010).

While accepting the facts Government stated (December 2010) that they have applied to WBPCB for consent to operate.

²⁷ Under the Act, thermal power stations are required to obtain consent to operate after every two years.

- Unit I to VI of DPL had duly obtained consent to operate. However, Unit-VII had consent to establish a 250 MW plant. The Company actually established a 300 MW plant. However, the consent to operate the 300 MW plant has not yet been obtained (November 2010). The Government stated that the Company had applied for consent to operate the 300 MW plant (December 2010).

Air pollution

2.1.43 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 (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 dependant on effective and efficient functioning of ESPs.

Non achievement of specified SPM levels even after up-gradation

2.1.44 The ESPs of Unit I to VI at KTPS were designed to achieve an SPM level of $140 \mu\text{g}/\text{m}^3$. In order to reduce the SPM level, WBPDCL placed an order (March 2004) for erection and commissioning of Ammonia Based Flue Gas Conditioning (AFGC) System in Units I & III and modification of the existing AFGC system of Unit II at a total cost of ₹4.14 crore. The above AFGC system was completed after a delay of 26 months i.e. in March 2007. However, our scrutiny revealed that even after up-gradation, the recorded SPM levels for the years under review ranged from 12.00 (September 2007) to $365.90 \mu\text{g} / \text{m}^3$ (September 2009) at KTPS as against the designed level of $140 \mu\text{g} / \text{m}^3$. As the desired level of reduction in SPM levels was not achieved even after an investment of ₹ 4.14 crore KTPS continued to remain non compliant. As a result, WBPCB forfeited rebate and levied cess at penal rates as discussed in para 2.1.49. Similarly, in case of DPL, even after incurring an expenditure of ₹ 60.97 crore on installation of ESPs the SPM level remained between 215 and $466 \mu\text{g} / \text{m}^3$, which was above the norms ($140 \mu\text{g} / \text{m}^3$).

Use of high ash content coal

2.1.45 As per MoEF notification (July 2003) coal based power stations located 1,000 KM away from the coal mine or located in urban, sensitive and critically polluted areas were required to use coal having less than 34 per cent ash on an annual weighted average basis. The WBPCB has also prescribed a similar norm of 34 per cent for BkTPP and KTPS. During the period 2005-10 KTPS and BkTPP received 450.94 lakh MT coal with weighted average of ash between 28 to 39 per cent. DPL received 91.88 lakh MT of coal with ash content varying from 30 to 44 per cent. However, the ash content could have been brought down by washing the coal through washeries to meet the norms. However, no action was taken to receive the entire quantity of coal after washing.

Ash disposal

2.1.46 MoEF issued a notification (September 1999) which provided that every thermal plant should supply fly ash to building material manufacturing units free of cost at least for 10 years. Our scrutiny of generation and disposal of fly ash for the years under review revealed that against the total fly ash of 147.39 lakh MT generated at BkTPP, KTPS and DPL only 55.21 lakh MT was disposed off. This suggests that no effective concerted efforts were made to improve the utilisation of ash.

Noise pollution

2.1.47 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 should be controlled at source, adequate silencing equipments should be provided at various noise sources and a green belt should be developed around the plant area to diffuse noise dispersion. Our scrutiny revealed that BkTPP and KTPS recorded noise levels intermittently wherein the recorded levels were between 57.08 decibels and 95.72 decibel. In the case of DPL it was recorded between 76.16 decibels to 97.50 decibels against an acceptable norm of 70 decibels (as per the Factories Act 1958).

Water pollution

2.1.48 Effluents from power plants result in water pollution. As per the provisions of the Water (Prevention & Control of Pollution) Act, 1974, thermal power stations are required to obtain the consent of WBPCB which *inter-alia* specifies the conditions and stipulations for control of water pollution to be complied with by thermal power stations.

As per the norms prescribed by WBPCB, total suspended solids (TSS), in effluents from the TPSs should not exceed 100 mg/L. We noticed that TSS on monthly average basis in effluent discharges exceeded standards for the years mentioned against them:

Sl No	Name of the TPS	2005-06		2006-07		2007-08		2008-09		2009-10	
		Norms	Actual (Max)	Norms	Actual (Max)	Norms	Actual (Max)	Norms	Actual (Max)	Norms	Actual (Max)
<i>(in mg/L)</i>											
1	KTPS	100	346	100	306	100	164	100	356	100	482
2	BkTPP	100	26	100	30	100	50	100	72	100	264
3	DPL	100	NA	100	10,550	100	970	100	8,046	100	1,840

It may be observed from the above table that in BkTPP, the TSS norms were achieved except during 2009-10. The main reasons in other cases for exceeding TSS norms were absence of sedimentation tanks and ineffective functioning of effluent treatment plants. As both the reasons are controllable, effective and time bound steps could have avoided irreparable damage caused to the water bodies.

Avoidable expenditure on water cess

2.1.49 As per the provisions of the Water (Prevention & Control of Pollution) Cess Act, 1977 water cess at rates specified is collected for water utilised for purposes specified in the Act *ibid*. Compliance with the standards laid down by GOI under Environment (Protection) Act, 1986 makes the consumer eligible for concessional rate of water cess and also rebate in payment of cess. Our scrutiny revealed that KTPS and BkTPP failed to bring down pollution to specified levels resulting in water cess being paid at higher rates, which resulted in consequential avoidable payment of water cess of ₹ 1.19 crore during 2005-06 to 2009-10. It is recommended that the norms fixed by WBPCB if adhered to would prevent WBPDC and DPL from paying ₹ 1.19 crore and ₹ 0.77 crore as water cess for non compliance during the review period.

Monitoring and evaluation

2.1.50 The management of the generating companies (i.e. WBPDC, DPL and WBSEDCL) are vested in respective Board of Directors. It was observed that though the individual units generated a Management Information System (MIS), the same was lacking in uniformity, regularity and comprehensiveness.

A review of the existing MIS in all the three companies revealed the following:

- No data relating to operational parameters and variances against CEA/WBERC norms were incorporated in the MIS.
- Though Board of Directors meetings were held in each quarter there was no evidence of deliberations by senior management on shortfalls in operational parameters.

This indicated lack of monitoring and evaluation procedures.

The same in respect of WBPDC had also been brought out vide paragraph 2.1.41 of the Report of the Comptroller and Auditor General of India for the year ended 31 March 2008 (Commercial), Government of West Bengal.

Conclusion

Planning and project management

- **Capacity additions did not keep pace with additions planned either by the State Government or as per the National Electricity Plan. As a result actual additions fell short of the state plan by 1,319.68 MW. Additionally, capacity addition of 900 MW related to a load management unit at PPSP did not make positive addition to the power availability.**

Operational performance

- **Low utilisation of existing installed capacity led to loss of generation. The main reasons attributable to non optimal utilisation of installed capacity were excess auxiliary consumption, low plant load factor and excessive planned and forced outages. There was loss of generation as well as cost overruns arising from delays in completion of renovation and modernisation work and commissioning of new project.**
- **Coal supplied fell short quantitatively and qualitatively as against linkage determined by SLC which was responsible for higher consumption. Adequate emphasis not given on renovation and modernisation contributed to higher outages. Even where R&M was carried out post R&M performance evaluation could not be carried out in absence of targeted performance parameters.**
- **Low capacity utilisation of PPSP led to shortfall in generation of power as against the possible peak hour generation. The very purpose of meeting sharp peak requirement of power was, thus, defeated leading to frequent load shedding during peak hours**

Financial management

- **WBPDCCL cash surplus of ₹ 198.88 crore in 2005-06 declined to cash deficit of ₹ 286.12 crore in 2008-09. This indicates poor financial management and non recovery of dues in time.**

Environmental issues

- **During the review period, only 37 per cent fly ash generated could be disposed off.**

Recommendations

The Companies must

Planning and project management

- **Prepare perspective plans for augmenting installed capacity through addition of new generating units as well as by RMU of the existing units in accordance with NEP.**

Operational performance

- **Formulate plans to improve the PLF, minimise duration of planned and forced outages, ensure maximum plant utilisation, analyse the reasons for auxiliary consumption over the norms with a view to increase generation.**
- **Take up the issue of supply of quality coal in requisite quantity should be pursued regularly with concerned coal companies and**

Ministry to contain coal consumption within norms.

- **R&M should be initiated at regular intervals as per prescribed norms by CEA, post-R&M performance parameters should be formulated and performance evaluated accordingly.**
- **WBS&M should prepare separate accounts and file separate tariff petitions for PPSP so as to assess the economic performance and viability of the Project.**

Financial management

- **Tariff petitions and annual performance reviews should be filed timely.**

Environmental issues

- **Environmental issues including waste management should be addressed adequately.**

West Bengal Forest Development Corporation Limited

2.2 Operational performance

Executive Summary

West Bengal Forest Development Corporation Limited (Company) was formed in July 1974 with the objective to purchase/acquire/obtain by lease, forest/ waste land/ other kind of land from the State Government for protecting and developing forests on a large scale, carry out forestry activities entrusted by State Government; market forest produce of its own and on behalf of Forest Department and develop awareness on conservation of nature. The Company acquired 0.44 lakh ha area in North Bengal from the Forest Department, representing 3.39 per cent of the total forest area of the State. The Company earned profit during the last five years upto March 2010 and accumulated profit stood at ₹40.44 crore against the paid-up capital of ₹6.23 crore. The performance audit of the Company for the period 2005-06 to 2009-10 was conducted to assess efficiency and economy in undertaking plantation activities, felling/harvesting operations as per working plans, achievement of project objectives, extent of benefit passed on to forest dwellers through participation of Forest Protection Committees (FPC) in forestry activities, effectiveness of pricing policy and marketing of forest produce, human resource management to obtain optimum productivity, adequacy of internal control mechanism to enable top management to monitor the affairs of the Company.

Planning

Forest (Conservation) Act 1980 required prior approval of the Central Government to working plans (WPs) covering all proposals for clearing forest areas and re-forestation. WP for Coochbehar, Baikunthapur, Buxa Tiger Reserve and Birbhum divisions expired in March 2010. The Company has taken up the issue with DoF.

Acquisition and utilisation of land

The State Government did not frame a policy in respect of transfer of forest land to the Company. The Company obtained leasehold right over a meagre area of 44,049 ha out of 12.99 lakh ha of forest area of the State. The leasehold forest land includes 1,415.78 ha of degraded forest land. Further, 33,984 ha was situated at an altitude above 500 metre where

felling was not permissible. Further, no lease agreement was entered into for 73,000 ha under CJFM project in South Bengal.

Plantation activities

Plantation activities were not carried out as prescribed in working plans. As a result there was shortfall of 74 per cent in sal plantation and insufficient afforestation coverage in degraded forest land under South Bengal project. Although the project envisaged higher production of pulpwood through clonal eucalyptus plantations, only 16 per cent of total afforested area was covered by such plantation which affected overall productivity.

Harvesting activities

Harvesting entails obtaining yield from thinning and final felling of trees in clear felling areas. The Company could not harvest 42,889.85 ha of targeted area due to low stock, non existent plantation and inadequate monitoring. Against the norm of 200 trees per ha in CFC area, the actual average number of standing trees was 67 in Kalimpong division of the Company and 95 in five divisions of DoF where the Company was entrusted to carry out CFC under ID&JFM project. No investigation was carried out for loss of timber valued ₹97.43 crore. Further, due to low productivity per hectare the Company suffered revenue loss of ₹14.81 crore during 2005-10. Wide variances in earnings of FPCs in neighboring divisions gave rise to apprehension of forest stock not being adequately protected, since earnings of FPCs were directly proportionate to the outturn of the blocks.

Sale of forest produce

Although auction prices obtained were sub-optimal, the Company could not dispose logs through open tender due to failure to overcome the opposition of local timber merchants association. Instead of following the method of open tendering, 77 per cent of pulpwood was allotted to two paper manufacturers at negotiated rates below market price, which led to lower realisation of ₹2.68 crore in 2007-09. During 2005-09 realisation against cashew sale was ₹1.50 crore against potential revenue of

₹3.12 crore due to failure to break cartel formation by buyers.

Financial management

The Company consistently earned profit of ₹35.73 crore during 2005-10 entirely generated from two JFM projects. Further, cash management technique was found to be deficient since the Company failed to forecast optimum fund required for day to day operations beyond which the surplus could be invested in short term deposits resulting in loss of interest of ₹1.02 crore. Besides the Company did not receive compensation of ₹21.04 crore towards compensatory afforestation and value of standing trees due to diversion of forest land to NHPC for construction of hydel project as well as failed to collect royalty of ₹2.21 crore on boulders collected by them. Moreover, due to incorrect computation of cost, the Company paid excess royalty of ₹29.88 crore to the Government on sale proceeds of forest produce.

Manpower planning

The Company did not review division-wise optimum manpower required according to present activity level. In March 2010, the Company sent a proposal to DoF for reorganisation of Kalimpong division by surrendering 33,984 ha of lease hold land due to restriction in felling operation above 500 metre imposed by Supreme Court and transferring 303 employees to the DoF after retaining 118 employees. However, the proposal has not yet been accepted by the DoF and the Company continued to absorb the extra

expenditure of ₹3.12 crore on surplus staff upto September 2010. Further, the Company incurred unproductive cost of ₹50.04 lakh towards idle manpower.

Internal control

Absence of mechanism to monitor plantations at various stages led to losses of forest stock. Beside control mechanism in the area of preparation of working plans, deployment of surplus staff, reconciliation of advance and non recovery of outstanding dues, selling procedures of timber/ pulpwood are found to be deficient. Further, internal audit did not cover important areas like plantation and harvesting.

Conclusion and Recommendations

The Company could not adhere to the norms of plantation and harvesting activities resulting in less regeneration thereby affecting forest cover and degradation of forest land as well as lower productivity due to illicit felling arising from inadequate monitoring. Moreover, the Company deviated from its own sales policy, failed to break the clutch of buyers' cartel by exploring alternate marketing avenues leading to lower sales realisation. The Company should lay greater emphasis on sticking to operational norms, streamlining marketing activities by widening customer base, adopting more transparent methods and exploring the possibility of venturing into the business of non timber forest produce and value added products.

Introduction

2.2.1 Forests play an important role in maintaining ecological balance and environmental stability and providing subsistence economy, especially to those in and around the forest area. National Forestry Project (NFP) 1988 aims at maintaining 33 *per cent* of the land mass of India under forest coverage. Against the overall area under forest cover¹ of 21.02 *per cent* in the country, the percentage of actual forest coverage in the State was only 14.64 *per cent*. The recorded forest area of the State was 12.99² lakh hectare (ha) as of 2007 of which 41.26 *per cent* (5.36 lakh ha) is under open forest³ cover, 58.74 *per cent* under dense forest cover⁴ (7.63 lakh ha) beside 0.78⁵ lakh ha under degraded⁶ forest. In order to combat the problems of low forest cover and degraded forest arising from high incidence of intense felling in the past and human encroachment in forest land, the State evolved (early 1970s) participatory form of forest management known as 'Joint Forest Management' (JFM) as a mechanism to decelerate the process of degradation of forest land and accelerate process of resuscitation through participation of stakeholders. Accordingly, the Directorate of Forest (DoF) formed Forest Protection Committees (FPC) through induction of forest fringe dwellers.

2.2.2 The West Bengal Forest Development Corporation Limited (Company) was formed (July 1974) to purchase/acquire/obtain by lease, forest/ waste land or any other kind of land from the State Government and to protect and develop forests expeditiously on a large scale; carry out forestry activities entrusted under projects or otherwise by DoF; market forest produce of its own and on behalf of DoF and develop recreational facilities in project areas for tourism and nature awareness.

Present activities of the Company are confined to forestry activities viz. plantation, harvestation, afforestation etc. in its own territorial division at Kalimpong of 44,049 ha of forest land. The State Government entrusted (March 1999/ January 2004) two projects⁷ for financing the entire forestry activities in South and North Bengal as well as harvesting and selling of harvested produce in 73,000 ha and 2,961.81 ha of forest land for a period of 12 and 10 years respectively. Besides, the Company is also engaged in cashew plantation, sawing operation including carpentry and joinery work, developing awareness for conservation of nature by setting up eco-tourism centers etc.

¹All lands more than one hectare in area having tree canopy density of more than 10 *per cent* irrespective of ownership and legal status. It includes recorded forest area as well as orchards, bamboo and palm.

²As per 'India State of Forest Report 2009' by Forest Survey of India, Ministry of Forest and Environment.

³Lands with forest cover having a tree canopy density between 10 to 40 *per cent*.

⁴All lands, more than one hectare in area, with a tree canopy density of more than 40 percent.

⁵As per State Forest Report 2007-08 of Directorate of Forest, Government of West Bengal.

⁶Covered by scrub / open area.

⁷Consolidation of Joint Forest Management (CJFM) in South Bengal and Infrastructure Development and JFM support activities (ID & JFM) in North Bengal.

The Company had a paid-up capital of ₹ 6.23 crore. As of March 2010 accumulated profit of the Company stood at ₹ 40.44 crore of which ₹ 35.91 crore was earned during 2005-06 to 2009-10.

2.2.3 The Management of the Company is vested in a Board of Directors (BoD) consisting of eleven directors including Chairman and Managing Director (MD), all appointed by the State Government. The MD is the Chief Executive of the Company and is assisted by two General Managers (Head quarters and North), Company Secretary and Cost Officer. However, it was observed that there were no experts in timber marketing. The Company has eight⁸ working divisions; five in the North Bengal and two in South Bengal and one at Head office at Kolkata. The divisions are headed by divisional managers, who are in-charge of plantation, logging, saw milling, wood treatment and marketing of forest produce etc.

2.2.4 A performance review of the Company was included in the Report of the C&AG of India for the year ended 31 March 2001 (Commercial), Government of West Bengal. The Committee on Public Undertaking had not selected the review for discussion. Non maintenance of plantation journal, non existent plantation, deficient implementation of Joint Forest Management project, failure in obtaining approval of working plan (WP), low yield in cashew plantation were highlighted in the review. The deficiencies still persisted, as discussed in this review.

Scope of audit

2.2.5 The performance audit was conducted (February / May 2010) on the working of the Company for five years from 2005-06 to 2009-10. The audit findings were arrived at after test check of records of the Company's Head Office, two⁹ divisional offices in South Bengal under CJFM, and two divisions¹⁰ in North Bengal conducting ID and JFM and own territorial division at Kalimpong in North Bengal. The sample selected for audit is based on the area harvested by the Company which represents 46 *per cent* of the total timber outturn.

Audit objectives

2.2.6 This performance audit was undertaken to assess whether:

- plantations and developmental activities were carried out effectively, efficiently and economically as per approved¹¹ WP;
- felling/ harvesting operations had been carried out efficiently and in the manner prescribed in the WP with the objective of enhancing productivity;

⁸Forest Corporation (South), Forest Corporation (West), Marketing division, Kurseong Logging division, Government Saw Mill division, Kalimpong (G&S) division, Saw Milling division and Buxa Logging division.

⁹Forest Corporation (South) and Forest Corporation (West).

¹⁰ Kurseong Logging division and Government Saw Mill division.

¹¹ Approved by the Ministry of Environment & Forests (MoEF).

- benefits passed on to forest dwellers through forestry activities were as per plan;
- possibility of venturing into business of non timber forest produce and value added products was explored for additional revenue generation;
- an effective and efficient pricing policy has been devised and implemented for disposal of final products;
- available funds were adequate and utilised judiciously;
- human resources were effectively and efficiently utilised for achieving optimum productivity; and
- management information and internal control system existed in the Company was effective.

Audit criteria

2.2.7 The audit criteria adopted for assessing the audit objectives were:

- instructions/ guidelines issued by Board of Directors, State Government and Government of India (GoI) from time to time;
- WPs for extraction and regeneration/re-plantation;
- yield norms fixed in project report/ WP;
- budgets, targets and other parameters contained in project reports;
- rules, decision and guidelines issued by Board of Directors/ State Government/ GoI from time to time;
- project agreement of Joint Forest Management; and
- directives/ guidelines issued by the DoF of State Government.

Audit methodology

2.2.8 Audit adopted a mix of the following methodologies for achieving the audit objectives keeping in view the audit criteria:

- examination of plantation records and monitoring reports on plantation at divisions of the Company;
- examination of the agenda notes and minutes of the meetings of the Board of Directors;
- examination of bids, instalment registers, allotment of pulpwood to different paper industries; and

- interaction with auditee, analysis of data with reference to audit criteria, raising of audit queries, discussion of audit findings with the Management and issue of draft performance audit report to the Management for comments.

Audit findings

2.2.9 The audit objectives were discussed with the Company during an 'entry conference' held on 4 February 2010. Subsequently, the audit findings were reported to the Company and to the Government in June 2010 and discussed in an 'exit conference' held on 8 October 2010. Both conferences were attended by the Additional Chief Secretary, Forest department, Government of West Bengal and Managing Director of the Company. The views expressed by them in the exit conference have been considered while finalising the review.

The performance of the Company was found to be deficient in the areas of plantation and harvesting activities, sale of forest produce, development of forest based industries, cash management, manpower planning and recovery of dues. These deficiencies led to loss of ₹ 167.15 crore during 2005-10. The audit findings are discussed in subsequent paragraphs.

Planning

2.2.10 Though the Company was required to follow working plan which covered harvesting and plantation activities for one to 20 years it did not formulate any long/ short term Corporate Plan encompassing evaluation of present activities, problems encountered and future prospect. Development of policy guidelines regarding utilisation of by-products, identification of areas of diversification, correlation and coordination of different functions, human resource development, computerisation, fund management, assistance required from the DoF at high levels etc. were not featured in the planning process. The Company also did not formulate an integrated data bank and had no regular communication with the DoF. However, the Company prepared annual financial budget and was dependent on WP prepared by DoF for plantation and harvesting activities.

Preparation and submission of working plan

2.2.11 The National Forest Policy 1988 marked a departure from simple production forestry to preservation of environment, ecosystem and biodiversity, while also promoting increase in forest productivity. As per the Forest (Conservation) Act, 1980 and Amendment Act, 1988, prior approval of the Government of India is mandatory to WPs covering all proposals for clearing forest areas and re-forestation. The WP contains long term and year wise programme of work to be done *viz.*, identification of clear felling coupes¹² (CFC) in forest areas, selection of recognised species and innovative

¹² Areas selected for felling of all standing trees.

silvicultural¹³ practices, check of soil status, forest stock, etc prepared by the DoF with the assistance of Divisional Forest Officers (DFO) of the DoF and Divisional Managers (DM) of the Company. Before commencement of CFC operation DoF conduct inspection for ascertaining the number of trees in the earmarked zone for estimation of timber outturn to be achieved and allot the area to executing agencies. As per Honourable Supreme Court of India's (Court) Order (December 1996) clear felling operation has been suspended in all forests except in accordance with the WPs prepared by the State Government and approved by GoI.

We noticed that 9th WP (1997-98 to 2017-18) of Company's own territorial division at Kalimpong was initially approved (November 1997) by Ministry of Environment and Forests (MOEF), GoI without any clear felling for the period. Considering the representation of the State Government, the MOEF reviewed its decision and gave provisional permission (September 1998) for clear felling of Dhupi and teak monoculture plantation for a period of two years i.e, 1998-99 and 1999-2000. The Company filed (2001) a writ petition before the Court seeking *inter alia*, permission for felling of trees from plantations raised by the DoF/ Company. Accordingly, the Court passed the following orders in January 2006 in respect of felling of trees in the division:

- (i) Thinning and other silvicultural operations might be permitted in the forest area between 500 metres to 1,000 metres altitude; and
- (ii) Felling of plantations might be permitted in the forest area below 500 metres altitude.

Subsequently these directives were also incorporated in the 9th WP that was approved in July 2007. Consequently, 2,331.78 ha was identified for CFC operation.

2.2.12 The WPs of Coochbehar, Baikunthapur and Buxa Tiger Reserve divisions in North Bengal and Birbhum division in South Bengal where the Company was entrusted to conduct CFC operation under ID & JFM project in North Bengal and CJFM in South Bengal expired in March 2010, which requires immediate attention for preparation of fresh plans and their approval by GoI for conducting forestry activities beyond March 2010. The Management stated (September 2010) that WPs would be submitted by DoF soon.

Acquisition *vis-à-vis* utilisation of land and main activities

2.2.13 The National Commission on Agriculture had suggested setting up of Forest Development Corporations in every state which would organise institutional finance for raising man-made forests so as to meet the domestic and industrial needs of forest produce and resuscitate the degraded forest areas to bring them under productive use.

¹³Denotes scientific research conducted on different species of trees for guidance to future forestry activities.

Unlike other State Governments¹⁴, Government of West Bengal did not frame any policy in regard to transfer of forest land to the Company for development. As such the Company commenced operation (November 1974) with a maiden transfer of 44,049 ha leasehold forest land, renewable at 10 year period under Kalimpong division of Darjeeling district (North Bengal) representing a meagre 3.39 *per cent* of the total forest land of the State. The lease period which expired in November 2004 had not yet been renewed. Moreover 33,984 ha of the said forest area is above 500 m altitude, having severe restriction on felling, the Company did not propose allotment of alternative forestland in other districts for gainful utilisation of staff and financial viability. Scrutiny revealed that the State had 5.36 lakh ha of open forest including degraded forest land, which could have been leased out to the Company, after conducting feasibility study, for plantation of industrial wood species, as was done by other State Governments¹⁵. This would not only increase density of forest cover but also benefit the Company.

While admitting the fact, the Management stated (September 2010) that although the State Government had no regular policy for transferring forest land to the Company, the latter had been considering need based requirement of the Company from time to time. Moreover, the question of transfer of fresh forest land is subject to the provision of Forest Conservation Act, 1980. However, the Company had submitted (October 2009) the proposal for renewal of lease agreement of Kalimpong division and extension of CJFM project in South Bengal upto March 2020. The same had not yet been given effect to by the DoF. In the exit conference Government stated (October 2010) that role of the Company as the agent of the State Government in ID&JFM project in North Bengal and CJFM project in South Bengal will not be further extended.

The work of the entrusted two projects at present represents more than 99 *per cent* of the entire operation of the Company during the review period. Thus non extension of such projects would seriously impact the financial and operational efficiency of the Company. Further, as transfer of forest land will not affect the land character, the provisions of Forest Conservation Act, 1980 would not pose a hindrance.

Though the Kalimpong division had 55 forest workers and 32 watchers on its payroll, the Company failed to evict encroachers in 389.12 ha of forest land since 1980. Further as of December 2004, the total degraded forest area of the division was 1,415.78 ha. However, the Company carried out plantation in 298 ha (21.05 *per cent*) of degraded forestland during the last five years. The Company neither fixed any target for bringing the area of degraded land under plantation nor ascertained the reasons impeding plantation in non cultivable area with remedial measures, if any.

¹⁴ The policy of the Government of Madhya Pradesh stipulated that ten *per cent* of the forest area to be transferred to the Madhya Pradesh Rajya Ban Bikash Nigam Limited.

¹⁵ Karnataka Forest Development Corporation had possession of 73,000 ha of degraded land handed over by Karnataka Forest Department. Forest Development Corporation Maharashtra (FDCM) and Department of Forest Maharashtra was entrusted to develop degraded forest land of 1.35 million ha by the State Government.

2.2.14 The project under CJFM in South Bengal envisaged 73,000 ha of forest land grouped under Sal coppice forest and plantation of quick growing species to be given on lease to the Company with a token lease-rent of ₹ 10 per hectare *per annum* payable on cumulative harvested area to the DoF. However, no lease agreement was entered into.

The Company's interest suffered due to:

- (i) possession of meagre forest area comprising of significant unproductive areas where felling is not permissible;
- (ii) lack of State Government's policy framework regarding handing over forest areas to the Company; and
- (iii) Company's failure to fix targets for plantations in these areas.

2.2.15 Plantation and harvesting activities are conducted by the Company in its own territorial division at Kalimpong. Further, the State Government entrusted (March 1999/ January 2004) two projects viz. Consolidation of Joint Forest Management (CJFM) in South Bengal and Infrastructure Development and JFM support activities (ID & JFM) in North Bengal to the Company. Such entrustment was made by the State Government to tide over severe budgetary crunch. Resource mobilisation by the Company in these projects would enable carrying out of forestry activities viz. harvesting, regeneration including rehabilitation and deceleration of degraded forest land.

CJFM was an extension of the earlier World Bank funded project. It comprised of 73,000 ha leased (12 years) forest land grouped under Sal coppice¹⁶ forest and plantation of quick growing species (Eucalyptus, Akashmoni, etc) as-well-as 9,000 ha of degraded forest land in five districts of South Bengal (Midnapore, Bankura, Birbhum, Burdwan and Purulia). The Company would execute CJFM with the organisational assistance and co-operation of DoF where its own infrastructure and organisational set up were weak. The cost of all inputs of the operation would be incurred by the Company. The entire revenue generated through sale proceeds would be deposited in favour of the Company. The surplus revenue generated after adjustment of harvesting cost would be apportioned in the following manner: -

The CJFM project had several shortcomings regarding, plantation targets, inaccurate estimation and computation of profitability, FPC payment and royalty.

Stakeholder	Form of payment	Sharing as envisaged in the project (per cent)	Computation
Government	Royalty	10-45	Gross Revenue, less Harvesting Cost
Company	Administrative Cost	15	Gross Revenue, less Harvesting Cost
FPC	Revenue sharing	25	Gross Revenue, less Harvesting Cost less Cost of Watch and Ward.

¹⁶ Method of regeneration where new shoots grows from the harvested tree stumps.

Stakeholder	Form of payment	Sharing as envisaged in the project (per cent)	Computation
Company	Cost of raising plantation, seedling production, JFM support activities, creation and maintenance of storage depots, construction of housing quarters and eco-tourism centers.	Not mentioned	Cost as approved in the joint meeting.

On scrutiny of CJFM project report following shortcomings emerged:

- ➔ The report did not envisage harvesting areas commensurate with areas prescribed in WPs.
- ➔ There was no one to one positive co-relation between the areas under plantation and harvesting in order to ensure compliance of WP parameters.
- ➔ The report estimated inaccurate cash deficit upto 11th year based on constant price for revenue while the projected expenditure was escalated every year at 10 *per cent* resulting in under estimation of surplus during project period with consequential non identification of areas where such funds could be utilised.
- ➔ While computing the share of FPC and royalty, expenses incidental to harvesting and plantation cost were not considered which led to extra payment on these counts.

These issues are discussed in subsequent paragraphs.

2.2.16 Similarly, under ID & JFM project in North Bengal, the Company would act as a harvesting, marketing and financing agent of DoF. The Company would finance entire harvesting operation and essential project inputs (re-generation, construction and improvement of roads and buildings, forest protection, JFM support activities etc.) in 2,961.81 ha of 11 divisions of the DoF/Wild Life divisions for a period of 12 years as advance. Entire revenue generated through sale proceeds of harvested produce would be deposited with the Company. After adjustment of proportionate harvesting cost at pre-determined rate and recovery of advance to the DoF for input cost together with 17 *per cent* service charges from sale proceeds, the balance surplus would be deposited with Government as royalty and share of Forest Protection Committee (FPC) twice in a year (September and March). Forest land would not be leased out to the Company and the infrastructure, plantation etc. so created would be the sole property of the DoF.

In the absence of any policy framework, the Company was reduced to dependence on DoF, carrying out operations like a mere contractor of the Government instead of performing a significant role as an independent

organisation to raise forestry for commercial needs and resuscitate the degraded forest areas to bring them under productive use.

Plantation activities

Plantation activities of Kalimpong division.

2.2.17 According to WP after harvesting operation in clear felling coupe (CFC), plantation activities were required to be carried out so that no forest areas would be left blank in CFC area. Although the WP envisaged 67.36 ha of CFC operation during the 2006-07 to 2009-10 with equivalent area for plantation, the Company undertook plantation in 21 ha only correlating to the areas actually felled. The Company did not fix any target to put the degraded/blank forest land under plantation although there were 1,415.78 ha of forest land under such category. Actual plantation in degraded/blank forest land was only 298 ha during 2005-10.

Afforestation under CJFM in South Bengal

2.2.18 Sal had been a predominant local species in South Bengal forests in the past but on account of high felling intensity, grazing, lopping and removal of stumps, forest land was degraded to merely scrub jungle or bushes. Besides, raising of Sal was almost abandoned from late 1960s and the emphasis was shifted to quick growing industrial species like Eucalyptus and Akashmoni¹⁷. This was mainly due to involvement of high cost and necessity of close monitoring for successful raising of Sal plantation. Thus, Sal forest presently appears in disjointed patches. Accordingly, forest lands were grouped under Sal coppice forest and plantation forests of quick growing species. Company generated surplus of ₹ 52.99 crore through CJFM operations upto 2008-09 after distributing the surplus to the stakeholders at the agreed percentage as envisaged in the project. Company did not moot any proposal for utilising the surplus raising additional plantations in degraded forestland, harvested areas and Sal regeneration in compliance to the WP norm as discussed below.

Raising plantations on degraded forest land

2.2.19 Against estimated area of 20,000 ha of degraded forest lands and blanks in five districts of South Bengal, the CJFM project report had envisaged (March 1999) creation of plantation of 9,000 ha by 2002-03, which had been done. In April 2002, the Board formed a review committee to review the performance of the project and to suggest mid-course correction. The committee suggested undertaking additional plantation to the extent of fund availability. The State Forest Report 2007-08 published by DoF, indicated that degraded land as of March 2008 in those five districts had increased to 67,326 ha. In view of threefold increase in degraded forest land, this surplus fund could have been utilised to cover substantial area of 23,483 ha of degraded land which was not done.

In spite of available funds adequate measures were not taken to arrest increase in degraded forest.

¹⁷ Acacia auriculiformis.

Management stated (September 2010) that the Company could not utilise further funds for regeneration as there was no demand from DoF due to availability of fund under various other schemes with them. However, the fact remains that the scope for utilisation of surplus fund for plantation in degraded land was not explored despite three fold increase in degraded forest area over the period of the project. In the exit conference Government admitted that there is scope and need for improvement in silvicultural activities, research work and better co-ordination between DoF and Company to resolve the problem of plantation in degraded land.

Raising plantations on harvested land

2.2.20 The CJFM did not have one to one correlation between harvest and regeneration on non coppicable areas felled and the cycle of coppicable areas to be brought under plantation. Moreover, the project did not *inter-alia*, include responsibility for undertaking Eucalyptus and Akashmoni plantation in harvested area from 2008-09 onwards. As per the norm of the project report, 10 *per cent* of sal coppice area should be artificially regenerated¹⁸ every year as safeguard against decline in coppice vigour¹⁹ besides full regeneration for Akashmoni plantation, whereas in case of Eucalyptus plantation, regeneration was required where three successive harvesting have been completed. Artificial regeneration of Eucalyptus is done through seedlings as well as clones. Productivity per hectare in case of clonal plantation was more than double compared to regeneration through seedlings.

Before commencement of the work programme every year, both DoF and the Company fix target for the areas to be put under regeneration under non coppicable Eucalyptus and Akashmoni plantation. Scrutiny revealed that against the targeted regeneration area of 7,440 ha under Eucalyptus and Akashmoni, the project could achieve 6,902 ha resulting in shortfall of 538 ha requiring an investment of ₹ 89.59 lakh. Further, in case of Sal regeneration, against normative requirement of regeneration of 1,441 ha in harvested Sal forest area, the actual area regenerated was 373 ha during 2005-08, resulting in shortfall of 1,068 ha requiring an investment of ₹ 4.03 crore. The reasons for shortfall was not analysed inspite of availability of surplus fund in the project. This would not only seriously affect the quality of produce and reduce forest cover, but also restrict future earning potential of the Company.

Management stated (September 2010) that the project did not have any norm for artificial regeneration of Sal coppice area. The reply overlooks the opinion of review committee on the project, comprised of officials of DoF and Company, which recommended (June 2002) undertaking additional plantation to the extent of funds available which was not fully complied with. Moreover, the WP prescribed adherence to such norms for ensuring sustenance of Sal forest in South Bengal.

¹⁸ Regeneration by means of clones and seedling grown in nurseries.

¹⁹ Growth rate of quality shoots from stumps after harvesting of tree trunks.

Neither the Company nor the DoF maintained records showing details of artificial regeneration of eucalyptus from clonal plantation and through seedlings. Clonal plantation not only has shorter rotation period of seven years, but also yield higher pulpwood produce than that of seed origin plantation, which has rotation period of 12 years. For enhancement of productivity, clonal plantation in larger area was desirable. Scrutiny revealed that against the total afforestation undertaken in 6,902 ha during 2005-08, only 1,108 ha²⁰ (16 per cent) was put under clonal plantation. Thus the project failed to achieve its objective of productivity enhancement by way of improved methods of plantation. Had the project brought the entire area under clonal plantation, it would require an additional expenditure of only ₹ 5.79 crore.

In reply Management stated (September 2010) that increased clonal plantation could not be undertaken due to shortage of quality clonal material supplied by silvicultural wing owing to shortage of multiplication areas and infrastructure limitations. However, the said limitations could have been overcome had the required number of plants been imported from other states as was done at the onset of the project.

2.2.21 Research and Monitoring wing of DoF, conducts survey of survival of plantations in first, third and fifth year and places reports based on grades for survival percentages²¹ according to the age of the plant. Against 9,502.08 ha of plantation required to be monitored, the wing actually monitored only 3,699.08 ha resulting in 5,803 ha of plantation being left unmonitored. The monitoring results revealed that at the end of 5th year in 28 per cent (400.12 ha) of the total area (1,438.64 ha) under plantation, survival rate was less than 50 per cent resulting in unfruitful investment of ₹ 32.81 lakh.

Harvesting activities

2.2.22 Harvesting denotes obtaining yield through thinning and final felling of plantation in the form of CFC. Forests in North Bengal produce timber which require longer period to mature and fetched higher prices. Yield is obtained through interim thinnings followed by final CFC at the age of maturity. In South Bengal, the forests are managed through coppice system and plantation of quick growing species and therefore harvested in short rotation period of seven to 15 years and do not require thinning. Out-turn obtained from harvesting were in the form of poles, posts, cogging sleeper, firewood and pulpwood, having lesser value compared to timber prices fetched by forests in North Bengal.

²⁰ One hectare is equal to 10,000 square metres. The required spacing between plants is 2 x 2 metres. Therefore the number of plants as per the norm is 10,000/4=2,500 nos. of clonal plants required per ha.

²¹ Grades of survival percentage:

Plantation Status	Survival Percentage (%)			
	A. Category	B. Category	C. Category	D. Category
1st Year	>=90	89~75	74~50	<50
3rd Year	>=75	74~60	59~40	<39
5th Year	>=50	49~40	39~30	<29

Against the targeted area of CFC operation in 84,208.71 ha during timber harvesting season (October to March/April) of 2005-10, the Company could carry out harvesting in 41,318.86 ha (49 per cent) only for Kalimpong division, CJFM project in South Bengal and ID&JFM project in North Bengal²² due to low stock, non existent plantation, political disturbance and inadequate monitoring as shown in table below.

CFC operational area	Targeted area	Area of actual felling	Short fall in felling area	Potential revenue loss due to short fall in felling	Potential loss of earning to the Company
	(In hectare)			(₹ in crore)	
Kalimpong division	67.36	21	46.36	8.12	8.12
CJFM project	82,500	40,456	42,044	260.05	39.00
ID & JFM	1,641.35	841.86	799.49	63.05	10.72
Total	84,208.71	41,318.86	42,889.85	331.22	57.84

Short fall in harvesting operation led to potential loss of revenue of ₹ 331.22 crore.

The value of the potential revenue loss net of harvesting cost on account of shortfall in operation worked out to ₹ 331.22 crore with loss of potential earning of the Company of ₹ 57.84 crore as discussed in subsequent paragraphs. Total forest outturn obtained during that period was 21.17 lakh cubic metre as detailed in **Annexure 20**.

CFC operation

2.2.23 While assigning an area to be felled, the age of the plantation is matched with rotation age²³ of the species in order to achieve maximum yield. Accordingly, harvesting age in case of forests in North Bengal was fixed at 60/70 years whereas in South Bengal it was 15 years in case of Sal coppice and 12 and seven years in case of plantations originating from seedling and clones of Eucalyptus respectively. Delayed harvesting would defer the commencement of the next cycle thereby lessening future productivity. Forest stocks were protected through a system of dividing the total forest area into division, subdivision, ranges and beats under the control of divisional managers, range managers, beat officers and forest guards in addition to surveillance by fringe dwellers who were member of FPCs. In spite of such measures, CFC operations conducted in its own Kalimpong division as well as under CJFM and ID&JFM had shown meagre productivity of 67 trees, 50.63 cubic metre, and 95 trees per hectare respectively against norm/ target fixed in project report and working plan as discussed in the succeeding paragraphs:

CFC in Kalimpong division

2.2.24 The table below reveals the year wise area allotted for CFC at an altitude upto 500 metres as per WP and actual achievement there against:

²² By Kurseong Logging division, Buxa Logging division and Government saw milling division.

²³ The age at which tree should be harvested to obtain maximum yield.

Year	CFC area allotted as per working plan (ha)	Actual CFC area felled (ha)	Production of round logs from CFC area (cum)	Loss of potential revenue due to shortfall in CFC operation (₹ in crore)	Remarks
2006-07	18.68	Nil	Nil	--	Due to late approval of WP.
2007-08	38.82 (including backlog of 18.68 ha of earlier year)	21.00	2,436.113	2.28	Reasons for shortfall were not on record.
2008-09	18.66	Nil	Nil	2.99	Due to political disturbances.
2009-10	9.88	Nil	Nil	2.85	Due to political disturbances.

Actual number of trees fell short of the norms resulting in loss of timber valued at ₹ 6.71 crore.

CFC operations conducted in the areas in 2007-08 comprised of seven hectares of Sal plantation, eight hectares of Sal and miscellaneous species plantation and six hectares of miscellaneous species plantations in seven blocks. Scrutiny of records revealed that against the norm of 200²⁴ standing trees per hectare, the average actual number of trees harvested was 67. The value of loss of timber against the achievable norm amounted to ₹ 4.57 crore. Similarly, the actual average numbers of standing trees per hectare in the CFC areas earmarked for 2008-09 and 2009-10 were 119 and 169 respectively resulting in shortage of 1,817 trees. Value of loss of timber against the achievable norm amounted to ₹ 2.14 crore. While accepting the fact of shortage of standing trees which occurred due to theft and damage by people during political turmoil in Darjeeling hill area, Management stated (September 2010) that under the existing circumstances it would take every possible step to minimise damage to mature plantations and optimise revenue.

Failure to undertake CFC operation led to loss of revenue of ₹ 9.45 crore.

Further, due to failure to carry out CFC operations in 46.36 ha during 2007-08 to 2009-10, the Company failed to generate revenue of ₹ 8.12 crore. Under experimental study for regeneration, the WP (1997-98 to 2017-18) prescribed felling in areas upto two hectares, in sample plots, above 1,000 metres altitude. On field verification the Company identified (October 2007) land at Risswan-I for CFC operation above 1,000 metre altitude and estimated timber volume of 1,213.35 cum. After identification of plot in October 2007 no other work like felling of trees and regeneration was carried out. This resulted in failure to generate revenue of ₹ 1.33 crore. Since the operations remained incomplete, future earnings potential was not satisfactorily explored.

Management stated (September 2010) that such CFC operation could not be undertaken due to political disturbances in the area. They further added that while computing the loss, no allowance was given for recovery of timber removed illegally by miscreants or damaged by cyclone. The reply is not pertinent to the audit observation as timber recovered from cyclone damage (CD) and seized operations were from total forest areas without identifying specific CFC areas whereas the missing trees mentioned in the paragraph related to particular CFC areas.

²⁴ Number of trees to be retained after last thinning operation.

CFC under CJFM project in South Bengal

2.2.25 Although the primary objective of the CJFM project was to arrange resources for large scale harvesting operation, but year wise targets fixed jointly by the DoF and the Company harvested much less than targets approved in WPs. This had a cascading effect on the operating cycle of future productivity. The table below indicates year wise targets and actual execution of harvesting operation for the period from 2005-06 to 2009-10:

Particulars	2005-06		2006-07		2007-08		2008-09		2009-10		Total 2005-10
	Sal	Euc/ Aka	Sal	Euc/ Aka	Sal	Euc/ Aka	Sal	Euc/ Aka	Sal	Euc/ Aka	
(In hectare)											
Felling area prescribed under WP	8,600	7,900	8,600	7,900	8,600	7,900	8,600	7,900	8,600	7,900	82,500
Harvesting target	5,059	3,842	6,232	5,158	6,206	5,013	5,493	4,361	5,005	4,581	50,950
Percentage of harvesting target to felling area prescribed under WP	59	49	72	65	72	63	64	55	58	58	62
Achievement	4,789	3,680	4,749	4,248	4,871	4,377	4,597	3,522	2,515	3,108	40,456
Percentage of achievement to harvesting target	95	96	76	82	78	87	84	81	50	68	79
Percentage of achievement to felling area prescribed under WP	56	47	55	54	57	55	53	45	29	39	49

Note: Euc – Eucalyptus, Aka - Akashmoni

From the above table it would be seen that yearly targets were set at 49 to 72 per cent of harvesting area approved in the WP. However, the actual achievements were lower compared to targets. During 2005-10 total shortfall in harvesting area compared to felling area prescribed in WP was 51 per cent. The Management attributed such poor performance to low stump density²⁵ which was uneconomic for operation but it did not investigate the reasons. However, as mentioned in paragraph 2.2.20, declining coppice vigor in Sal and Eucalyptus areas and increasing blanks in Akashmoni plantation were the main reason for low growth rate of plantation. The value of unrealised revenue, net of cost, based on average actual sale on account of shortfall in harvesting compared to WP during 2006-10 was ₹ 260.05 crore with potential loss of Company's earning by ₹ 39 crore. Accepting the fact, the Management stated (September 2010) that other reasons for underfelling were shortage of labour due to lower wage rate, dispute among FPCs regarding jurisdiction over coupes and political disturbances.

Company failed to harvest 51 per cent of area approved for felling leading to loss of earnings of ₹ 39 crore.

While comparing the district wise felling area as per WP with that of actuals, it was revealed that there were shortfalls in three districts viz. Purulia (84 per cent), Birbhum (61 per cent) and Burdwan (62 per cent). In September 2006, Management attributed the shortfall to inadequate monitoring by executing divisions over project inputs and suggested to re-locate one division from Midnapur to Durgapur by which it can undertake additional 1,500 ha of felling operation. However, the Company did not undertake any steps for shifting the

²⁵ Less than 200 nos. per ha.

division as a result there was loss of potential revenue of ₹ 6.66 crore during 2006-07 to 2009-10. The fact was accepted by the Management.

Productivity analysis

2.2.26 Productivity denotes volume of outturn per ha achieved in CFC area. In CJFM project in South Bengal it was noticed that although the marking list of approved CFC areas should indicate details of girth, height and number of trees, the same was not followed. As per WP the average volume per ha in case of matured Sal coppice area was estimated at 71.13 cum.²⁶ Moreover in case of Eucalyptus/ Akashmoni plantation the Silviculture (South) division at Midnapur, estimated (January 2008) yield at 66.38 cum²⁷ per ha. The Company did not compare the average yield per ha amongst the divisions as well as year wise variance in productivity so as to ascertain the trend and to exercise proper control over productivity. The table below indicates the actual yield per hectare of outturns converted in cubic metre (cum) separately under Sal and Eucalyptus/ Akashmoni plantation during the period from 2005-06 to 2009-10:

Estimated outturn per ha in CFC area	2005-06	2006-07	2007-08	2008-09	2009-10
	(In cubic meter)				
(a) Sal	71.13	71.13	71.13	71.13	71.13
(b) Eucalyptus/ Akashmoni	66.38	66.38	66.38	66.38	66.38
Actual yield per ha					
(a) Sal	48.75 (31.46)	49.60 (30.27)	45.29 (36.33)	52.97 (25.53)	48.77 (31.44)
(b) Eucalyptus/ Akashmoni	54.49 (17.91)	52.57 (20.80)	46.87 (29.39)	55.60 (16.24)	51.34 (22.66)

(Figures in brackets indicate the percentage of shortfall).

Shortfall in productivity resulted in lower earning by ₹ 14.81 crore.

It would be evident from the above that the actual productivity fell short of the estimated outturn in all the years. Consequently, total shortfall of revenue of ₹ 98.75 crore was noticed with potential loss of earnings of ₹ 14.81 crore to the Company at the prevailing sale rates of respective years.

Comparing the productivity report of 2009-10 with 2005-06 for 13 divisions under CJFM, it was revealed that the overall yield had declined by 5 to 10 per cent in one²⁸ division, between 10 and 25 per cent in four²⁹ divisions and over 25 per cent in three³⁰ divisions. The yield had increased between 10 to 25 per cent in one³¹ division and more than 25 per cent in three³² divisions. Yield remained static in case of one³³ division. Decreasing trend of yield indicated that forest stock was not protected at the desired level.

²⁶ For volume calculation the height of trees were considered half of the height given in WP as the top portion do not contribute to economic value.

²⁷ 75 MT/ha x 1.77 conversion factor = 132.75/2 = 66.38 cum.

²⁸ Bankura (North).

²⁹ West Midnapore, Bankura (South), Panchet and Rupnarayan.

³⁰ East Midnapore, KSC-I and Durgapur.

³¹ KSC-I.

³² Kharagpur, Purulia and Birbhum.

³³ Burdwan.

Further, comparison of the results of major outturn achieved by DoF and the Company from harvesting operations in seven³⁴ divisions in Bankura and Midnapore districts indicates that the yield per hectare in case of DoF was less than that achieved by the Company except for pulpwood during 2006-10. The Company neither compared nor analysed the variance of outturn achieved in the same division. Shortfall in revenue due to lesser yield of the DoF worked out to ₹ 13.01 crore. The loss of earnings towards administrative cost of the Company at the rate of 15 per cent worked out to ₹ 1.95 crore besides royalty of ₹ 3.77 crore foregone by the State Government.

The Management stated (September 2010) that change in product mix and some high yielding areas could not be taken up for harvesting due to law and order problem affecting the overall average productivity. It further assured to carry out regular productivity check to optimise revenue.

CFC under ID&JFM project in North Bengal

Loss of timber valued ₹ 92.86 crore on account of missing trees.

2.2.27 The Company was assigned to conduct CFC operation in the entire forest in North Bengal under the control of DoF. During 2005-10 the Company could harvest 841.86 ha against the targeted area of 1,641.35 ha leading to short fall of 799.49 ha. The loss of potential revenue due to such short fall in harvesting operation was ₹ 63.05 crore which included earnings to the Company of ₹ 10.72 crore on the basis of actual average yield obtained in actual felling areas. Scrutiny of available harvesting reports during 2005-06 to 2009-10 of two divisions³⁵ of the Company revealed that against 833.85 ha of prescribed CFC area as per WP, the actual approved area was 621.28 ha. The reasons for shortfall of 127.58 ha was due to non existence of plantation and presence of young plantation (39.29 ha), low stock (3.87 ha), seed stand (5.7 ha) and wildlife habitat (78.72 ha). Test check of outturn records of 352.72 ha under CFC operations conducted during 2005-10 revealed that average number of stems per hectare was 95 against the norm of 200³⁶ stipulated in WP. Consequently, loss of timber amounted to ₹ 92.86 crore. There were reported incidences of missing trees at on-going CFC operation. Neither the Company nor DoF investigated the reason for continuous occurrence of missing trees. Since one of the major objective of the project was to maintain steady flow of revenue to the State Government for further investment in forestry work such lackadaisical attitude resulted in huge loss to State exchequer. Under the circumstances, the probability of illegal felling could not be ruled out. The loss suffered by the Company on account of service charges at the rate of 17 per cent worked out to ₹ 15.79 crore.

The Company stated (September 2010) that the norm set in WP is achievable in an ideal situation presuming plantations do not suffer any casualty throughout their life-cycle. The Management further stated that the Company recovered ₹ 42.85 crore during 2005-10 by way of sale of timber obtained

³⁴ Bankura (North), Bankura (South), Panchet, East Midnapore, West Midnapore, Rupnarayan and Kharagpur Social Forestry.

³⁵ Kurseong Logging division and Buxa Logging division.

³⁶ Buxa Tiger Reserve (East)-2007-08.

from two divisions at Buxa Tiger Reserve (BTR) by seizure of illegal felling and cyclone damaged operations.

The reply does not address the concern relating to missing trees because (i) the norm of 200 trees likely to exist at the time of conducting CFC was fixed in the WP after giving due weightage for loss of trees owing to cyclone and other natural causes. Records also revealed that the actual standing trees in some CFC³⁷ blocks had exceeded the norm of 200 indicating correct estimation process adopted in WP. (ii) The reply itself upheld the audit observation on loss of timber arising from large number of illegal felling which had not attracted due attention of the authority. Besides, records revealed that there was no cyclone damage in the area during the period and the amount claimed to have been recovered by the Company was insignificant considering the loss worked out by audit in CFC area which was less than one *per cent* of entire area (75,900 ha) of BTR.

In the exit conference Government conceded the problems of encroachment of human habitation into forest areas, cattle grazing, disease, forest fire etc. which led to shortage of matured standing trees. They also assured to introduce system of periodical monitoring after fifth year of plantation to minimise damage to mature plantations and optimise revenue.

Thinning operations

Failure to undertake thinning in North Bengal resulted in loss of revenue of ₹ 8.47 crore to Government and ₹ 5.52 crore to the Company.

2.2.28 Thinning operations³⁸ under silvicultural treatments are conducted to improve availability of nutrients, water and light for trees and modify growth rate which in turn changes branching character, diameter and other wood properties. WP has proposed three cultural thinnings at the age of 20, 30 and 40/50 years considering the average optimum growth period of trees as being upto 60/70 years. Thinning not only results in improvement of the quality of plantations but also optimises usufructs for the Forest Protection Committees and leads to increased supervision by way of checking stocks.

Scrutiny of records revealed that thinning activities were not done as per the WP and there was shortfall of actual trees compared to the norm which had resulted in loss of revenue amounting to ₹ 8.47 crore to the State exchequer and ₹ 5.52 crore to the Company as discussed in succeeding paragraphs.

Failure to undertake thinning operation in territorial division at Kalimpong

2.2.29 Although there was no bar on thinning operations since 2006, the Company did not conduct thinning operations for last four years. Consequently, this had affected the growth and branching character of trees resulting in poor quality of timber that fetched lower rates. There were shortages of actual number of standing trees against the expected number as revealed from the approved thinning plan for 2009-10. As per the tending schedule of 9th WP, number of standing trees should be 390, 312 and 248 per

³⁷ Taipoo and Khairbari of Kurseong division; SRD-1, SBH-3a, SB-3(A), SBH-6 of Buxa Tiger Reserve (East) division.

³⁸ Denotes reducing the number of stems/ plants per unit area in sequential manner considering health and branching character of trees.

hectare at 30th, 40th and 50th year of plantation. These were to be reduced to 312, 248 and 200 after conducting thinning operation on 78, 64 and 48 trees per hectare. However, the actual average number of standing trees identified in 13 coupes before thinning operation during 2009-10 were 213, 273 and 207 at 30th, 40th and 50th year of plantation indicating 177, 39 and 41 number of missing trees per hectare. Moreover, out of 160.48 ha, in 103.41 ha (64 per cent) standing tree density was less than the prescribed number of stems per hectare to be retained after thinning operation. Management did not investigate the reasons for such loss. However, the fact suggests that it had failed to keep the stock intact.

Scrutiny of records indicated that trees more than 40 years of age standing on an area of 1,031.42 ha were due for thinning during 2005 to 2010. The division had no record to estimate the yield by carrying out thinning operations. Based on the yield of 3.60 cum per ha obtained by the adjoining Kurseong division of DoF the potential loss of revenue was ₹ 4.08 crore³⁹.

Accepting the audit observation, Management stated (September 2010) that thinning could not be carried out due to political disturbances. However, the loss, if any, would be recovered when the situation improves. The reply is partially incorrect as the situation was not adverse prior to 2008-09. Moreover such delayed thinning would have an impact on branching character and growth of trees.

Thinning under North Bengal project

2.2.30 During 2005-06 to 2009-10, the project report envisaged thinning operation over 2,977.23 ha to be conducted jointly by DoF and the Company. However, the Company did not maintain the consolidated report for actual achievement.

Scrutiny of records of Kurseong Logging division (KLD) of the Company revealed that it was entrusted to conduct thinning operation of 421.68 ha in Baikunthapur, Jalpaiguri and Kurseong division during 2007-08 to 2009-10. The KLD conducted thinning in 375.54 ha and returned felling list of 46.14 ha of land due to disturbances in hill areas. Against the norm of removal of 78 and 48 numbers of trees per ha at the age of 30 and 50 years of plantation by way of thinning, actual removal varied between seven to 47 and one to 11 respectively. Loss on account of shortage of thinning amounted to ₹ 8.47 crore to the State exchequer and ₹ 1.44 crore as agency charges to the Company.

Management stated (September 2010) that protection of plantation is the responsibility of DoF and accordingly, the matter would be brought to the notice of DoF, to take effective steps to minimise the damage to mature plantations and optimise revenue. However the fact remains that the project was given to Company on the background that the State Government was facing acute resource crunch for scientific management of forest which would be compensated through steady flow of revenue to the State Government from harvesting operation. Thus the matter should have been brought to the notice

³⁹ 1031.42 ha x 3.60 Cum/ ha x ₹ 11,000 being the average price of timber auctioned.

of DoF to exercise effective control measures for arresting losses to the State exchequer.

Other activities

Forest Protection Committee (FPC)

Excess payment of ₹ 7.45 crore was made without considering several elements of costs directly related to harvesting.

2.2.31 In order to decelerate degradation of forests and accelerate the process of resuscitation, the project adopted participatory management through induction of forest protection committees. The usufructs would be shared with the FPCs to form an alternative sources of income for them and discourage local population from destroying forests for their daily needs. Despite the State being pioneer in initiating Joint Forest Management (JFM) since early 1970's it could bring 82 *per cent* of total forest area in five districts in South Bengal under the purview of FPC whereas Jharkhand started JFM after 20 years (1990) had achieved higher coverage (93 *per cent*) of its forest area under JFM committees. As per State Government order, 25 *per cent* of net sale proceeds of forest outturn, under CJFM in South Bengal, was required to be deposited by the Company with DoF for onward disbursement to the FPCs. During 2005-10⁴⁰ the Company paid ₹ 70.38 crore towards FPC cost. It was observed that the Company worked out FPC share as stated in paragraph 2.2.15 without deducting the direct cost related to harvesting *viz.*, plantation cost, harvesting incidental cost, modern nurseries and depot storage and maintenance. As a result the Company made excess payment of FPC share of ₹ 7.45⁴¹ crore.

Management stated (September 2010) that the share of FPC had been worked out according to the guidelines of the project. However, the guideline itself had been framed without considering all direct costs incidental to harvesting leading to extra payment.

The income from sharing of forest usufructs by the FPC members was meagre and had little impact on their economic livelihood as the average annual per capita income of FPC members ranged between ₹ 1,039 in 2005-06 to ₹ 1,651 in 2008-09⁴². Further it was noticed that during 2007-09, out of 849 FPCs in five neighbouring divisions,⁴³ 437 held 42 to 61 *per cent* of harvesting area under their jurisdiction, despite which the average income per member of these FPCs were less than the average earnings (₹ 639 to ₹ 2,974) of the divisions concerned. Analysis revealed that reasons for wide differences in earnings were attributed to low holding (28 *per cent*) and low productivity (72 *per cent*). This indicates improper functioning of FPC mechanism which runs the risk of rendering the exercise unfruitful.

⁴⁰ No payment towards FPC share had been made for the outturn achieved during 2009-10.

⁴¹ Gross Sale (₹ 312.96 cr) less expenses towards harvesting cost (₹ 44.97 cr), harvesting incidental (₹ 3.04 cr), plantation cost (₹ 11.09 cr), modern nurseries (₹ 0.48 cr) and depot maintenance (₹ 1.67 cr) aggregating ₹ 61.25 cr = ₹ 251.71 cr @ 25 *per cent* = ₹ 62.93 cr. Therefore, excess FPC payment = ₹ 7.45 cr (₹ 70.38 cr – ₹ 62.93 cr).

⁴² FPC share for 2009-10 harvest had not yet been made.

⁴³ Midnapore, Purulia, Kangsabati (North), Bankura (North) and Panchet.

Management stated (September 2010) that it is not possible to constitute FPCs having jurisdiction over equal and uniformly-stocked forest areas. The reply does not address the audit observation since the major portion of low earning was due to low productivity and therefore the contention that the forest stock might not have been protected at the desired level cannot be over-ruled.

Non timber forests produce (NTFP)

2.2.32 Although the State Government emphasised on protection of forests by offering 25 per cent of net revenue obtained from harvesting outturn to the FPCs, it failed to stop illegal extraction as evident from the earlier paragraphs. Empirical evidence⁴⁴ showed that share of return had little impact on the economic livelihood of FPCs. As a result it could not compensate for the monetary benefits of illegal felling. Under the circumstances, NTFP plays an important role in providing regular and steady return to the forest fringe dwellers. Products falling under NTFP are mainly honey, sal seeds and leaves, tendu leaves, citronella grass, medicinal plants etc. Independent study⁴⁵ revealed that almost 50 per cent of the forest dwellers depend on NTFP for daily requirements. It further revealed that villagers collected maximum species for medicinal purposes including illegal collection of endangered species and each family earned ₹ 2,500 to ₹ 10,000 per annum from such collection. Although State Government gave free access for collection of NTFP to FPCs, no study was made available about the category of people engaged in collection, contribution of NTFP in family income, ensuring sustenance of NTFP and need for protection for rejuvenating stock etc.

Marketing of NTFP was carried out through primary collectors, agents/subagents and wholesalers. Field study indicated that the primary collectors suffered price discrimination of three to four times as compared to the price fetched in the wholesale market. Reports revealed that in some cases the primary collectors who were engaged by agents were not necessarily FPC members. However, there exist a conflict of interest between FPC members and collectors because the former played a role in conservation of forest while the latter had no such responsibility.

Since the role played by NTFP division under DoF was insignificant, the Government entrusted (November 2009) the activity of the said division to the Company in North Bengal. The Company prepared a project report for carrying out plantation of citronella grass, turmeric and medicinal plants on a mini scale, projecting surplus of ₹ 42.58 lakh on investment of ₹ 4.92 crore over six years upto 2014-15. However, the project did not undertake the responsibility of marketing of main NTFP viz., sal and tendu leaves, sal seeds, bamboo, cane, honey etc. collected by primary collectors which could not only ensure fair price to them by eliminating middlemen but also boost conservation of forest stock.

⁴⁴ 'Forest protection policies and local benefits from NTFP- lessons from West Bengal' by M. Dutta, S. Roy published in Economic and Political Weekly, Vol. 39, No. 6.

⁴⁵ 'Role of NTFPs among forest villagers in a protected area of West Bengal' by Bidhan Kanti Das, Institute of Development Studies, Kolkata.

Management stated (September 2010) that this policy issue is beyond the jurisdiction of the Company and also assured to undertake activities of collection and marketing of main NTFPs gradually.

Sale of forest produce

2.2.33 The Company followed the policy (December 2004) of DoF for disposal of forest produce. The policy prescribed bulk sale of trees, logs, firewood and other forest produce obtained from CFC/ thinning/ seized operation by open auction. If auction fails due to cartel formation or any other serious problems then disposal would be made through sealed tenders. Private negotiated sales can also be done in case of failure of the first two methods. Sale of forest produce for industrial use in forest based industries like plywood, matchwood, paper industries etc, was to be carried out through negotiations at prices determined by the price fixation committee⁴⁶. In addition, 10 *per cent* of the forest produce sold in auctions is normally reserved for different co-operative societies within the territorial jurisdiction of the division at average auction price obtained for same quality.

As per the terms and conditions of auctions, intending bidders deposit ₹ 2,000 as earnest money and successful bidders pay 25 *per cent* of the value of the auction within 20 days of the last day of the auction and the balance 75 *per cent* within 100 days. Failure to meet the above within the specified period would result in forfeiture of earnest money. Under exceptional circumstances 75 *per cent* of the sale value could be accepted beyond 120 days only on payment of additional 10 *per cent* on 75 *per cent* of sale value.

Scrutiny revealed that the Company resorted to local auction sales of high value timber in North Bengal instead of initiating open tender process which resulted in getting suboptimal rates. Similarly, in case of pulpwood sale the price and allotment of pulpwood was made in adhoc manner as discussed in succeeding paragraphs.

Disposal of forest produce in North Bengal

2.2.34 Review of records revealed the following:

- Although a reserve price was fixed for each lot presented in auction on the basis of average rate obtained for similar girth of logs in previous auctions, records were not maintained to verify the basis of calculation.
- Mechanism to fix reserve price was deficient and non transparent since recorded opinion of no other official was obtained in order to ensure reliability of the reserve price fixed by the DM.

Management accepted (September 2010) the fact and observed that suitable action in consultation with DoF would be initiated to ensure that the mechanism of fixation of reserve price will be objective and transparent.

⁴⁶ Comprising of Secretary, Department of Forests, Managing Director of the Company, PCCF and representatives of DoF and a representative of Commerce and Industries Department.

- Management did not review the necessity of enhancing earnest money to limit participation to financially sound timber merchants which would minimise loss owing to lesser price realisation in subsequent auctions of cancelled lots on account of payment default.
- Test check showed that BLD⁴⁷ and KLD allowed bidders to pay 75 per cent of the revenue for 220 lots beyond the stipulated period without imposing additional surcharge of ₹ 32.02 lakh.

Management stated (September 2010) that such waiver of additional surcharge was done in the interest of business as experience shows that in the next auction the withdrawn lots do not fetch expected return as the timber are prone to cracks and decay. However, records reveal that in many cases the Company fetched better prices by reauctioning withdrawn timber lots. Moreover, as the bidder was required to pay only 25 per cent as first instalment, they were in an advantageous position to bargain with the Company to waive additional surcharge on the ground of fetching lower prices in subsequent auctions.

Fair prices could not be obtained due to cartel formation by the timber merchants.

- As the Company issued local auction notices, participation was limited to timber merchants association only. Whenever attempts for disposal were made through open tender, the same was vehemently opposed by the association and they prevented sale through picketing. This had not only prevented the Company from obtaining fair market price but also delay in auction process deteriorated the quality of miscellaneous species. This ultimately led the Company to accept lower rate in subsequent auctions. In case of KLD and BLD, the average rate of miscellaneous species declined from ₹ 4,210 per cum and ₹ 5,859 per cum in 2005-06 to ₹ 3,087 per cum and ₹ 5,283 per cum in 2009-10 respectively. Management accepted (September 2010) the same.
- On one occasion the Company tried to dispose off 32 withdrawn (August 2007) lots of Teak and Sal through tender (August 2008) as the auction prices were considered to be low on account of cartel formation. Although the tender price was more than the reserve price, the Company could not sell the same to the highest tenderer due to vehement protests by local timber traders association. The demand for a fresh auction was allowed by the Chairman in deviation of sale policy of the Company. Consequent upon a fresh auction being held, the Company sold (April 2009) the same lots at a marginally higher price than the tendered rate. This vitiated the tender process and the Company could not get rid of the clutch of cartel formed by the association. In order to obtain better price the Company should sell forest produce through open tender / e-tender. Management accepted (September 2010) the same and stated that disposal of forest produce under e-auction is under process.

⁴⁷ Buxa Logging division.

Disposal of forest produce in South Bengal

2.2.35 Outturns from harvesting operations are in the forms of poles and posts, cogging sleepers and pulpwood. Poles, posts and cogging sleepers are sold to coal mines in terms of numbers through agents at a commission, whereas pulpwood by conversion into stack measurement (cum) to weight (MT) is sold to paper industries, through negotiation. Timber and firewood are sold through auction. Scrutiny in audit revealed that posts and poles accounted for 16 per cent of the sales whereas cogging sleepers and pulpwood account for 14 per cent and 48 per cent respectively on an average.

Loss on sale of pulpwood

Pulpwood was allotted to paper mills on arbitrary basis.

2.2.36 The prices of pulpwood were fixed after adding marginal increase over the preceding years' price in an ad-hoc manner with no reference to prevailing market price. Criteria had not been fixed either by the Company or DoF for allotment of pulpwood to five paper mills. It was noticed that almost 77 per cent of the produce was allotted to J.K.Paper Mill (JKPM) and Orient Paper Mills (OPM) during 2005-06 to 2008-09 respectively. I.T.C and Andhra Pradesh Paper Mill complained that the quantity allotted to them was meagre compared to the requirement and they finally quit due to low allotment. Further, in 2009-10 the situation further escalated as 90 per cent of the estimated outturn of pulpwood was distributed to JKPM and OPM with an option to distribute additional quantity in case of increase in actual outturn. Serious objections were raised by one of the deprived parties for extending such undue favour. It was however, noticed that TAF CORN⁴⁸, one of the largest producer of pulpwood, had been selling its produce through e-tender which facilitates transparency and chances of getting higher prices.

During 2007-08 and 2008-09 the Company sold Eucalyptus pulpwood at a negotiated rate of ₹ 2,150 and ₹ 2,300 per MT (including cost of extraction of ₹ 270 and ₹ 317 per MT respectively). As against this, rate obtained by TAF CORN was ₹ 2,125 and ₹ 2,313 per MT respectively which excluded the cost of extraction. Thus, due to sale of pulpwood at negotiated rates below the market price the Company sustained loss of ₹ 2.68 crore during 2007-09.

Further, in case of TAF CORN the actual weighment of the produce was done within seven days from the date of felling while in case of the Company, the disposal quantity was derived on the basis of fixed conversion factor from stack measurement to weights. The conversion factor has been arrived at taking weights on 21st day after harvesting.

Management stated (September 2010) that it would be unfair to compare the rates of pulpwood in West Bengal with that of TAF CORN as the operational conditions and the quality may not be comparable. The reply does not address the concern of lower price realisation due to adoption of opaque manner of sales. We compared the price with TAF CORN as the products were of same species and used by same end users. Moreover, there had been no complaint

⁴⁸ Tamilnadu Forest Plantation Corporation Limited.

in regard to the quality of pulpwood over the years which could undermine the rates of the Company.

Company suffered loss of ₹ 4.09 crore due to non consideration of conversion cost.

Sale of Sal firewood was more advantageous than Sal pulpwood. The Company did not carry out any analysis to ascertain cost benefit analysis for selling Sal as firewood or pulpwood. Scrutiny of records of species-wise average rate of Sal firewood as obtained in auction *vis-à-vis* cost of conversion⁴⁹ from firewood to pulpwood and prices of Sal pulpwood for 2008-09 revealed that sale of Sal pulpwood was disadvantageous compared to the auction price of its firewood by ₹ 431 per MT. The Company sustained loss of ₹ 4.09 crore for selling 1.17 lakh MT of Sal as pulpwood instead of as firewood during 2007-09.

Management stated (September 2010) that it makes sense to offer for sale a proper product mix as 100 *per cent* conversion of pulpwood to firewood may lead to glut in the market and consequent fall in price of firewood. Moreover, pulpwood is a fast moving article and fetches immediate revenue.

The contention of the Management regarding conversion of pulpwood to firewood is not feasible because pulpwood is produced after debarking of firewood. While determining the product mix, keeping in view the market demands cost of the produce is also an important factor for enhancing contribution. Beside, flexibility in product mix in tandem with market demand optimises revenue. These aspects were overlooked by the Company in the instant case.

Sale of Cashew

2.2.37 The Company raised cashew plantations over 1,870 ha of barren forest land at Midnapore district during 1984-86 on commercial basis so as to have a sustained yield and source of revenue. Out of 1,870 ha only 1,566 ha were under plantation and the balance areas were not brought under plantation even after 20 years.

Standing cashew crop was sold every year on the basis of open tender. The auction is done immediately after flowering starts i.e. in March every year. Besides, Company also maintains sample plots for comparing the yield with that of auctioned plots as a control measure. During 2005-06 to 2009-10, it earned revenue of ₹ 1.50 crore towards standing cashew crop which yielded 18,303.70 quintals of cashew seeds. Scrutiny revealed that the Company had obtained rates varying between ₹ 2,671 and ₹ 3,006 per quintal for sale of cashew seeds obtained from sample plots during 2005-09. The Company had not yet sold cashew seeds obtained from sample plots in 2009-10. Based on such rates the expected sale realisation from the auctioned plots should have been ₹ 3.12 crore during 2005-09, excluding collection charges⁵⁰. Low sale value obtained in open auction was due to failure to break the ring formation of buyers. Records revealed that intending buyers willing to offer higher rates

Failure to break cartelisation of buyers resulted in loss of ₹ 3.12 crore.

⁴⁹ Conversion cost of Sal firewood to Sal pulpwood considering conversion factor from cum to MT at 0.57, debarking loss at 10 *per cent* and cost of labour for debarking per MT ₹ 87.

⁵⁰ ₹ 1,100 per quintal.

were not allowed to participate in auctions. But the Company could not take any effective action against such nexus.

Owing to low return from cashew plantation, the Company could have undertaken afforestation in these lands. An exercise conducted in audit revealed that the Company could have earned revenue of ₹ 6.21 crore *per annum* had the area being covered under clonal Eucalyptus plantation.

Management stated (September 2010) that short realisation was due to diminishing productivity, which is not likely to increase by increased application of fertiliser. Further, accepting the recommendation they stated that the Company had prepared a project for raising quick growing species like pulpwood in the said plantation by replacing over matured cashew plantation during the next ten years.

Non realisation of outstanding debts

2.2.38 The Company sells its produce through auction and direct sales to customers on receipt of advance or cash. But it was seen that sundry debtors steadily increased from ₹ 4.45 crore in 2005-06 to ₹ 9.42 crore in 2009-10 due to credit sales allowed contrary to its sales policy. As of March 2010, ₹ 9.42 crore was realisable from 169 parties (116 private and 53 Government parties) of which ₹ 80.46 lakh was realisable from 26 Government and 83 private parties for more than three years.

Management stated (September 2010), as regards to the long outstanding dues, that necessary instructions had been issued to the concerned divisional managers to ensure proper follow up of outstanding dues and legal advice had also been sought for realisation of dues from private parties.

Development of forest based industry

2.2.39 The Company produces value added items in the form of sawn timber at four saw mills⁵¹. The sawn timber produced in these mills are sold to consumers through its eight⁵² sales depots and through dealers all over the State. The Company also had four⁵³ joinery and carpentry units. In order to enhance the durability of Jarul sawn timber, the company offers pest treatment alongwith seasoning facilities at its treatment plant at Salugarah.

Sawing of Timber

2.2.40 Out of four saw mills three purchase round timber from DoF at prices lesser than market rates as fixed by the Price Fixation Committee and Bhuttabari Saw Mill (BSM) from its territorial division at Kalimpong. Round timber is sawn at the mills having an annual capacity for sawing 16,200 cum.

⁵¹ (1) Saw Milling division (SMD), Jalpaiguri, (2) Government Saw Mills (GSM), Siliguri, (3) Kurseong Saw Mill (KSM), Salugarah and (4) Bhuttabari Saw Mills (BSM), Kalimpong.

⁵² Salt Lake (Kolkata), Midnapore, Siliguri, Salugarah, Madarihat, Raigunj, Durgapur, Purulia.

⁵³ Salt Lake (Kolkata), Godapeasal (Midnapore), Madarihat, Siliguri.

The Government mills operated at sub optimal level due to less allotment of timber by DoF

Capacity utilisation of the four saw mills recorded a declining trend from 46.69 *per cent* in 2005-06 to 18.82 *per cent* in 2009-10. Among them capacity utilisation of Government Saw Mill (GSM), was very low in all the years due to non allotment of required quantity of round timber by the DoF. The actual receipt was even less than the allotted quantity. The reasons for such short receipt were not on record. Management stated (February 2010) that the GSM was capable of sawing 3,600 cum *per annum* in one shift operation considering the present strength of manpower and derated capacity of sawing machines.

Although the productivity per worker of GSM had declined from 28.34 cum during 2005-09 and had risen to 12.35 cum *per annum* in 2009-10, the mill did not attempt to utilise the idle capacity by procuring round logs from DoF at average auction price. The mill primarily used sal logs for sawing. Had the Company explored the possibility of obtaining sal logs at auction rates (ranging from ₹ 13,359 to ₹ 17,442 per cum) it could have earned additional contribution of ₹ 2.79 crore⁵⁴ by utilising its unused capacity during 2007-10. It was further noticed that the DoF allots 10 *per cent* of auction logs to Co-operative Societies at average auction price. Accordingly the Company should endeavour to get such fixed allotment made by the Directorate for sustaining its sawing operations which in turn will break the collusion among auctioneers to keep the auction rate at sub-optimal level.

Management stated (September 2010) that the auction price considered by Audit for utilisation of idle capacity, appears to be on lower side. However, we have considered the average auction price of similar girth of sal logs as allotted to GSM for calculation of contribution. Management, however, assured to initiate steps to procure timber from other sources as well as to accept private jobs for sawing for better utilisation of idle capacity.

2.2.41 In case of BSM, the capacity utilisation declined from 74.96 *per cent* in 2005-06 to 11.37 *per cent* in 2009-10. Despite lower capacity utilisation in 2009-10, the mills failed to dispose off stocks leading to increase in accumulation of stock from 12 to 24.26 months' sale from 2005-06 to 2009-10. Similarly, the closing stock accumulation varied between four and 16 months' sale during 2005-06 to 2009-10 in case of KSM. Thus, inspite of low availability of round logs resulting in low capacity utilisation, the BSM and KSM failed to clear the stocks which in turn resulted in blocking up of funds (₹ 67.17 lakh).

Management stated (September 2010) that the stock accumulation in BSM is due to political disturbances. However, the fact remains that the political situation in hill areas was not adverse prior to 2008-09.

⁵⁴ Loss of contribution: 2007-08, 2008-09 and 2009-10: {1,912.91 cum (Installed capacity – 3,600 cum – 1,687.09 cum being capacity utilised) x ₹ 2,073 per cum being contribution} + {2,691.71 cum (3,600 cum – 908.29 cum being capacity utilised) x ₹ 6,489 per cum being contribution} + {2,414.28 cum (3,600 cum – 1,185.72 cum being capacity utilised) x ₹ 2,688 per cum being contribution} i.e., ₹ 39.65 lakh, ₹ 174.67 lakh and ₹ 64.90 lakh.

Norms for permissible wastage in sawing operations had not been fixed by the Company so far (September 2010). During the period 2005-06 to 2009-10, the percentage of wastages in BSM varied from 3.49 per cent to 10.79 per cent, whereas in case of KSM and GSM it varied from 3.36 per cent to 7.77 per cent and 2.29 per cent to 4.10 per cent during the same period. Analysis of species-wise wastage between the mills revealed that in case of Sal, the average wastage percentage was 1.55 at SMD whereas it was 2.5 at GSM. Similarly, for Jarul logs the average wastage percentage was 5.04 at KSM whereas it was 8.2 at SMD. Management neither analysed the reasons for wide fluctuation in the percentages of wastages nor implemented measures to restrict the same.

While accepting the observation, Management assured to fix norms for sawing wastage.

Financial management

Financial position and working results

2.2.42 The financial position and working results of the Company for the five years ending 2009-10 is given in **Annexure 21** and **22**.

Out of 8 operating divisions, three sustained losses while five earned profits.

Against the paid-up capital of ₹ 6.23 crore as of March 2010 accumulated profit of the Company stood at ₹ 40.44 crore of which ₹ 35.73 crore was earned during 2005-06 to 2009-10. Net profit of these years was entirely generated from two JFM projects of North and South Bengal. Out of eight operating divisions of the Company three had booked losses (₹ 16.75 crore) while five had earned profit (₹ 101.73 crore) during 2005-10. Analysis of working results further revealed that:

- Although the Company earned profit in all the years it showed a declining trend from 2007-08 onwards due to increase in royalty paid to Government under CJFM project.
- Sales of the Company increased from ₹ 65.08 crore in 2005-06 to ₹ 75.59 crore in 2006-07 and ₹ 87.28 crore in 2007-08 but it decreased to ₹ 80.16 crore in 2008-09 and ₹ 72.54 crore in 2009-10 due to decline in sale of timber.
- Operational expenses of the Company rose from ₹ 40.83 crore (2005-06) to ₹ 49.40 crore (2006-07) and then steadily declined to ₹ 29.89 crore in 2009-10. The rise in operational expenses during 2006-07 was attributable to the rise in expenses towards Forest, Conservancy and Protection (FCP) and logging operations due to growth in plantations and harvesting activities and thereafter expenses declined due to de-growth in those activities as the Company was not required to bear these expenses in CJFM project.

Cash management

Loss of ₹ 1.02 core due to non investment of idle fund in fixed deposit.

2.2.43 Comptroller and Auditor General had commented (para no 4.A.2.1) in its Report (Commercial) for the year 1998-99 that the Company sustained loss of interest due to failure to invest idle funds judiciously. The observation was discussed by COPU (March 2004) and it was recommended (July 2004) that the Company should take positive steps for utilisation of surplus fund properly by the divisions concerned. The Company gave (March 2007) assurance that all Divisional managers had been advised to invest idle fund lying in current accounts in different banks in short term fixed deposits on the basis of fortnightly cash flow to achieve maximum returns. But it was noticed that the Company did not adopt any cash forecasting technique like preparation of cash budget to find out optimum amount of cash to be kept in the current accounts beyond which the same could have been invested in short term fixed deposits for earning interest on idle funds. Instead the divisions invested funds in short term deposits in an ad-hoc manner. Scrutiny of monthly balances held in current accounts with 19 banks of seven⁵⁵ divisional offices and office of GM (North) revealed that the minimum balances ranging from ₹ 1.47 crore to ₹ 10.99 crore during the period from April 2005 to March 2010 remained idle without generating any interest. Consequently the Company suffered loss of ₹ 1.02 crore computed at five *per cent* rate of interest available on 30 days fixed deposit during the same period. While accepting the fact Management stated (September 2010) that the General Managers were advised to monitor monthly cash position of the divisions.

Non receipt of fund towards loss of forest for diversion of forest land

2.2.44 NHPC Limited (NHPC) acquired (May 2004 /April 2006) 640.54 ha⁵⁶ of forest land for construction of Stages III and IV of Teesta Hydel Power Project from Kalimpong division of the Company (325.28 ha) as well as DoF (315.26 ha) for permanent and temporary use. The project obtained environmental clearance (April 2004/ March 2006) from MOEF upon fulfillment of conditions which included *inter-alia* (i) compensatory afforestation over equivalent area of non forest land to be provided by NHPC together with cost of raising plantation and other supporting activities or cost of raising plantation on twice the area of degraded forest land in case of non availability of land (ii) payment of net present value of the loss of forest together with environmental loss etc. The table below indicates the land actually provided to Kalimpong division by NHPC against the actual requirement for permanent/ temporary use under stages III & IV:

⁵⁵ Forest Corporation (South), Forest Corporation (West), Saw Milling division, Kurseong Logging division and Buxa Logging division.

⁵⁶ Total land acquired from the Company and DoF for Stage III – 302.49 ha. For Stage IV – 338.05 ha.

Land status	Land actually acquired from Kalimpong division	Non forest land to be provided by NHPC to Kalimpong division	Non forest land actually provided by NHPC to Kalimpong division	Cost of plantation and other activities sanctioned by NHPC (₹ in crore)
	(i n h e c t a r e)			
Permanent use				
Stage-III	88.01	88.01	183.49	2.40 ⁵⁷
Stage-IV	157.92	157.92	Nil	-
Temporary use				
Stage-III	53.10	53.10	Nil	-
Stage-IV	26.25	26.25	Nil	-
Total Land	325.28	325.28	183.49	2.40

Inadequate receipt of compensation towards diversion of forest land.

It would be evident from the above that against compensatory non forest land receivable of 325.28 ha, the division received only 183.49 ha due to non availability of non forest land within the Kalimpong sub-division. The Company neither received balance compensatory land of 141.79 ha nor cost of raising plantation on twice the area of degraded forest land from NHPC. Instead NHPC provided fund of ₹ 2.17 crore for carrying out afforestation in degraded forest land in Darjeeling district and 87.13 ha of non forest land in Jalpaiguri district to DoF. As the diversion of forest land did not benefit the Company, it should claim ₹ 1.96 crore⁵⁸ towards the cost of plantation for twice the area (283.58 ha⁵⁹) of degraded land as per terms of environmental clearance. Against the estimated cost of ₹ 69,000 per hectare, the Company claimed ₹ 1.27 crore from NHPC (for 183.49 ha) against which it received ₹ 1.03 crore. It carried out plantation in 92.89 ha by utilising the entire amount at a rate of ₹ 1.11 lakh per hectare, incurring an extra expenditure of ₹ 39.01 lakh⁶⁰. The Company neither analysed the reasons for such extra expenditure nor had claimed additional funds from NHPC for carrying out plantation on the balance (90.60 ha) land. Further, the Company did not make proper survey of the land handed over by NHPC to assess that the same was entirely fit for afforestation work. Records revealed that the balance land of 90.60 ha included 51.35 ha of natural forest, 21.25 ha of rocky, stony and sinking areas, hence unsuitable for plantation work, while the assessment for suitability of plantation on 18 ha was not made. Thus, due to improper assessment, the Company could not claim equivalent compensatory land of 21.25 ha from NHPC.

Non receipt of compensation for loss of forest

2.2.45 In lieu of diversion of forest land to NHPC, the DoF claimed ₹ 17.50 crore for Stage – III and ₹ 19.60 crore for Stage – IV towards net

⁵⁷ Includes cost of plantation of ₹ 1.27 crore.

⁵⁸ (325.28 ha – 183.49 ha) x ₹ 69,000/hectare x 2 (twice).

⁵⁹ Land acquired 325.28 ha minus land provided 183.49 ha i.e. 141.79 x 2.

⁶⁰ 92.89 x (₹1.11 lakh – ₹ 0.69 lakh).

Company did not lodge any claim for ₹ 103.94 crore for loss of timber and environmental loss of forest due to diversion of forest land.

present value (NPV) of standing trees in respect of total area of land taken from the Company as well as DoF. The claim was approved by MOEF and the fund was deposited by NHPC to DoF for ultimate transfer to CAMPA⁶¹. Till September 2010 the DoF did not chalk out any programme for utilising the fund in forestry activities. The Company neither claimed proportionate amount on account of loss of timber amounting to ₹ 18.84⁶² crore from DoF/CAMPA nor did submit any proposal for utilising the fund for carrying out afforestation work in degraded forest land of 1,415.78 ha. Further, no claim has been made for environmental loss of forest (₹ 85.10 crore) as per project report. While accepting the fact the Management stated (September 2010) that the matter had been taken up with DoF.

Loss due to non collection of value of boulders from NHPC

2.2.46 MOEF, allowed collection of surface boulders and bed materials from river beds passing through recorded forest areas of the State by the Forest department under section 2 of Forest Conservation Act, 1980. Divisional Forest Officers are authorised to issue transit permits for collection and removal of the same and to receive the sale proceeds and other charges. Amounts so collected shall be used for strengthening embankments of rivers and raising afforestation in degraded land. Since the Company had obtained forest land under Kalimpong division on lease from the DoF, it enjoyed similar rights.

The Company with the approval (April 2004) of MOEF, diverted 53.10 ha land temporarily to NHPC which included 48.10 ha for collection of boulders for construction of Teesta Low Dam Project Stage-III on conditions that the legal status of the land shall remain unchanged.

Scrutiny revealed that NHPC had obtained boulders and deposited royalty of ₹ 2.21 crore to Sub-divisional Land and Land Reforms Officer (SDL&LRO), Kalimpong. As the legal status of the land temporarily diverted remained unchanged, which was to revert back to the Company after completion of project activities, the entire value of the boulders along with the royalty should have been collected by the Company from NHPC. Thus, slack supervision and control over river bed materials within forest resulted in non receipt of ₹ 2.21 crore which otherwise could have been utilised in afforestation of degraded land.

The Management stated (September 2010) that action had been initiated to recover royalty from NHPC as well as from SDL&LRO, Kalimpong.

Excess payment of royalty to Government

2.2.47 Royalty was payable to DoF at fixed percentage of net sale proceeds of forest outturn after deducting harvesting cost from gross revenue. But the Company worked out royalty without deducting direct cost related to

⁶¹ Compensatory Afforestation Management and Planning Agency was constituted and notified by the Central Government in April 2004 to undertake afforestation in degraded land.

⁶² Value of standing trees for Stage III of {₹ 17.50 crore x 141.11 ha/302.49 ha} = ₹ 8.16 crore plus proportionate amount for Stage IV {₹ 19.60 crore x 184.17 ha/338.05 ha} = ₹ 10.68 crore.

harvesting⁶³. This resulted in excess payment of royalty by ₹ 29.88 crore during 2005-06 to 2009-10. Management stated (September 2010) that the share of royalty had been worked out according to the guidelines of the project. However, the guidelines itself had been framed without considering the entire direct cost incidental to harvesting.

Non adjustment of advances to the DoF

2.2.48 Under ID&JFM project in North Bengal the Company advanced funds to different division offices under the DoF for conducting felling operation of cyclone damaged trees and seized timber operation. The rates of such operation varied as per produce (timber/ firewood) as well as altitude of the area. The Company did not reconcile the advances with the volume of timber obtained by DoF vis-à-vis sale of the same. During the period 2005-06 to 2009-10, Kurseong logging division advanced ₹ 1.66 crore to two⁶⁴ divisions of DoF on ad-hoc basis. DoF had submitted adjustment of logging charges amounting to ₹ 1.05 crore leaving an outstanding advance of ₹ 61 lakh. Similarly, Buxa logging division advanced ₹ 2.44 crore to three divisions⁶⁵ of DoF for seized timber operation during 2005-10. Out of that ₹ 65.47 lakh was lying unadjusted as of March 2010 due to non disposal of stock (₹ 19.85 lakh) by two divisions and non submission of reconciliation statement (₹ 45.62 lakh) by one division for past two years.

Management stated (September 2010) that action would be taken to update reconciliation.

Manpower planning

2.2.49 As per guidelines (1972) of National Commission of Agriculture,⁶⁶ the Company should be manned by very competent technical personnel having expertise in forestry and related timber management, marketing and industries. The personnel of the Company should normally be on tenure deputation from DoF who should carry sufficient deputation posts reserved for this purpose. Since full staff requirement of the Company could not be met from deputation reserve of DoF it resorted to direct recruitment of staff in the cadre of foresters, office assistants and accounts personnel. However, all forest officers in the rank of divisional managers continued to be deputed by DoF. Against the sanctioned strength of 1,415 comprising of 451 deputationists and 964 direct recruits, actual men in position was 1,162, 1,235, 1,053 and 965 at the end of 2006-07, 2007-08, 2008-09 and 2009-10 respectively of which 85 was on deputation, as on March 2010. Scrutiny revealed that the Management had no option of choosing and placement of the deputationists according to its requirement as the terms of deputation was determined by DoF. Consequently, the Company could not redeploy/ transfer staff on deputation as per requirement.

⁶³ Direct cost also includes plantation cost, harvesting incidental cost, nurseries, depot maintenance cost etc.

⁶⁴ Kurseong and Baikunthapur.

⁶⁵ Buxa Tiger Reserve (East), Buxa Tiger Reserve (West) and Coochbehar.

⁶⁶ The Company was formed on the recommendation of National Commission of Agriculture of 1972.

While accepting the facts the Management stated that a large number of shortcomings pointed out by audit could be attributed to poor manpower planning. However, the fact remains that the Company failed to find any way out to overcome the deficiencies.

The Company did not review division-wise optimum manpower required till February 2010. In March 2010 the Company sent a proposal to DoF for reorganisation of the Kalimpong division by surrendering 33,984 ha of lease hold land due to restriction in felling operation above 500 metres imposed by Supreme Court and transferring 303 employees to the DoF after retaining 118 employees. However, the proposal has not yet been accepted by the DoF. In the exit conference Government stated that surplus staff of Kalimpong division could not be taken back to Directorate due to non approval of the proposal by finance department. Thus, the Company could neither resolve the problem through government intervention nor transfer its surplus staff to other divisions and continued to absorb the extra expenditure of ₹ 3.12 crore upto September 2010.

Idle payment of staff cost

2.2.50 The Company entered (March 1996) into a collaborative agreement on profit sharing basis with Conveyer and Ropeway Services (CRS) for revamping defunct Darjeeling–Rangeet Valley (DRV) ropeway with maintenance and operation thereof. As per terms of the agreement, CRS would reimburse amount of salary/ wages of 10 employees of the Company engaged in the DRV ropeway. The renovated passenger ropeway started operation in March 1998. Operations were suspended following an accident in October 2003. Consequently, CRS stopped reimbursement of salary cost. The ropeway could not be re-commissioned due to failure of the CRS and the Company did not take effective steps for reinstallation of the ropeway (November 2010). As a result, the Company had paid idle wages amounting to ₹ 50.04 lakh during the period from November 2003 to March 2010.

Management stated (September 2010) that the ropeway could not be recommissioned due to ‘dilly-dallying’ on the part of Public Works Department and the Company was at present keeping only five employees which was necessary for protection and maintenance of the ropeway and other incidental assets for keeping them in working condition. However the fact remains that Company failed to recommission the ropeway after a lapse of more than six years.

Internal control and monitoring

2.2.51 Presence of and adherence to a strong internal control system minimises risk of errors and irregularities in operational and financial matters and provides assurance in matters relating to accounting, financial reporting and overall efficiency of the Company’s operations. Review of the Company’s operations revealed the following control deficiencies:

- Since WP forms the basis of all forestry activities, the same should be prepared well in advance in order to carry out the prescribed operations smoothly. This was not done during the period covered by audit.
- The Company did not endeavour to reconcile the actual produce in respect of advances made to the DoF on *ad hoc* basis at Buxa and Kurseong logging division.
- Deployment of staff was not done according to the volume of work resulting in surplus staff at Kalimpong division.

Management stated (September 2010) that a proposal for reorganisation of staff had been submitted to the Forest department for approval.

- The Company did not maintain separate records to assess the viability of the sales depots and joinery and carpentry units.
- Sale of pulpwood timber and other forest produce was not done through global tender/ e-tender, for revenue maximisation.

Management stated (September 2010) that the viability studies of sales depots and joinery and carpentry units will be carried out. Further, the proposal for marketing forest produce through e-auction was under process.

- Although the Company has no credit policy, it did not investigate the reasons for accumulation of huge dues.

Lack of monitoring

2.2.52 Plantation journals were required to be maintained at range and divisional offices indicating maintenance details and survival rates. Moreover, changes noticed in forest stock during inspections conducted periodically should be indicated in plantation journals and authenticated. Plantation journals were maintained upto fifth year. Thereafter survival status was not monitored as there existed no mechanism to check plantations after fifth year upto the year of thinning, in-between two thinnings and between last thinning to CFC. In the absence of monitoring, shortfall/ loss of trees came to notice belatedly at the time the area was chosen for thinning or CFC as already discussed, which precluded midcourse corrective steps being taken.

Admitting the fact the Management stated (September 2010) that the attempts had been made to preserve, update and maintain all existing plantation journals with details at Kalimpong division and assured to take suitable action for their proper maintenance.

Internal Audit

2.2.53 Internal Audit is an integral part of an internal control system of an organisation. It is an important tool in the hands of management which helps in promoting accuracy and reliability of accounting data in an organisation. The Company did not possess separate internal audit wing. Internal audit is

being conducted by firms of chartered accountants on annual/ half yearly basis. The Company had not prescribed any internal audit standard/ manual/ guidelines. The reports furnished by the internal auditors did not envisage the scope of the assignments. The reports did not include the detailed analysis and comparison of auction sales of timber, sawing operation, performance of sales depots and human resource. Moreover, important areas of operation like harvesting and plantation were not covered by internal auditor. The statutory auditors of the Company also recommended strengthening of the internal audit system.

Management accepted (September 2010) the fact and had now revised the scope of work of internal audit.

The matter was reported to Government (July 2010); their reply was awaited (November 2010).

Conclusion

- **Absence of State Government policy with respect to transfer of forest land to the Company inhibited the Company from drawing up strategic long term plans. This, in turn, resulted in continued dependence of the Company on the Forest Department even after 35 years of its formation for allocation of forest land and affected its activities adversely.**
- **Plantation and development activities were not carried out as prescribed in the WP. This resulted in 74 per cent shortfall in Sal plantation area and insufficient afforestation in degraded forest land under CJFM project, as also extra expenditure being incurred and survival rate was low, even less than 50 per cent over 28 per cent area of plantation.**
- **Failed to harvest 51 per cent of the targeted area due to low stump density, non existent plantation, political disturbance and inadequate monitoring.**
- **Reasons for shortfall of revenue of ₹ 98.75 crore due to low productivity per hectare due to unprotected forest stock were not analysed.**
- **Incorrect method of computation of revenue share resulted in overpayment of ₹ 7.45 crore to FPCs.**
- **Disproportionate distribution of revenue among FPCs defeated the objective of providing subsistence economy to forest dwellers and may consequently defeat the purpose of forming FPCs.**
- **The sale realisation of the Company was lower due to non fixation of reserve price based on reliable data, failure to break the clutch of buyers' cartel, explore alternate marketing and deviation from its own sales policy.**

- **Deficient financial management led to loss of interest due to failure to invest idle funds.**
- **Absence of mechanism to monitor plantations at important stages led to loss of forest stock.**

Recommendation

It is recommended that the Company should:

- **Take up with the State Government allocation of earmarked forest land as has been done in some other States, to enable drawing up of a long term strategic plan.**
- **Carry out plantation, harvesting and afforestation activities as prescribed in the WPs.**
- **Establish regular mechanism for analysis of variances in actual outturn against norms, in order to arrest low productivity.**
- **Introduce a system of periodical checking of plantations to ensure preservation of forest stock.**
- **Ensure fair and equitable distribution to FPCs in order to sustain and improve forest cover and productivity through provision of better livelihood supplement to forest dwellers to strengthen the mechanism of FPCs.**
- **Explore the possibility of venturing into business of non timber forest produce and value added products.**
- **Streamline marketing activities by inviting tenders/ e-tenders so as to widen customer base and establish a more transparent and effective system.**

Management accepted all the recommendations and assured to implement them.