

Chapter II

2. Performance review relating to Government companies

2.1 Orissa Power Generation Corporation Limited

Functioning

Executive summary

Power is an essential requirement for all facets of life and has been recognised as a basic human need. In view of phenomenal growth in the demand of power since 2005-06, capacity addition was not adequate to meet the peak demand leaving a deficit of 700 MW during 2009-10. In the background of power shortage in the State, it was considered desirable to conduct performance audit of Orissa Power Generation Corporation Limited to assess the status of power generation vis-a-vis requirement for power during the period 2005-06 to 2009-10. The audit findings are discussed below.

Planning for future requirement

The total installed capacity of the State PSUs increased from 2,317 MW as on 1 April 2005 to 2,482 MW as on 31 March 2010. During 2005-10 actual capacity addition was 165 MW only. Over and above the capacity addition under five year plan, the Company's unit-3 and 4 were scheduled to be commissioned in 2004-05 with total capacity addition of 420 MW subsequently revised to 1,320 MW in July 2009. In spite of availability of all statutory clearances, common infrastructural facilities and surplus funds varying from ₹142.26 to ₹540.09 crore with the Company, the project could not come up due to non-finalisation of modalities of sale of power and dispute over the existing PPA. The State met the demand through procurement of power from the Central Sector Power Companies, Captive power plants and other States. During 2009-10, even after purchase of power, average demand could not be met leaving a deficit

of 22 per cent of total requirement. The State had to purchase power from CPSUs and other states at an extra cost of ₹660.18 crore during review period.

Input Efficiency

During the years 2005-09 due to receipt of 3.12 lakh MT of inferior grade coal, the Company sustained loss of ₹3.86 crore. The claim of ₹1.39 crore for 2009-10 had also not been settled by MCL so far. Against the specific consumption norm of 0.784 Kg for coal, the actual consumption varied from 0.822 to 0.887 Kg leading to excess consumption of 11.52 lakh MT of coal valued at ₹72.02 crore. Despite Board's decision in 2008 to import 50,000 MT of low ash coal for blending with high ash coal as received from MCL, the Management did not resort to import of low ash coal or use of washed coal to maximise its generation.

Output Efficiency

The Plant Load Factor (PLF) of the Company, though remained above the national average, decreased from 90.16 per cent (2006-07) to 80.46 per cent (2009-10). Plant availability remained above CEA norm of 80/85 per cent. Despite this, the Company was not able to meet the generation schedule in 2008-09 and 2009-10 and sustained generation loss of 231 MU. Against the designed generation of 17,146 MU, the actual generation was 15,612 MU leading to a shortfall of 1,534 MU during 2005-10. The auxiliary consumption of the plants remained in the range of 10.24 to 10.64 per cent against the CEA norm of 7.5 per cent.

Outstanding Claims and Dues

The energy bills of ₹92.61 crore raised during 2006-07 to 2008-09 on GRIDCO remained outstanding till date as GRIDCO disputed the criteria of 68.49 per cent PLF for calculation of incentive as stipulated in PPA.

Monitoring by Top Management

The Company has effective management systems of operations, service standards and targets. The performance reports were evaluated by the Board of Directors on quarterly basis and remedial actions were suggested for arresting operational deficiencies, if any.

Conclusion and Recommendations

Timely commissioning of unit-3 and 4 could have enabled the Company to generate additional power to the extent of 1,320 MW. Inadequate capacity addition has increased the dependence of the State on high cost power purchase. The review contains five recommendations which inter alia include intensifying its capacity addition programme, reduction of cost of generation by use of imported/washed coal and take up the issue of receipt of poor quality coal with Union Ministry of Power/Coal.

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 very 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 the interest of the consumers. In compliance with Section 3 of the *ibid* Act, the Government of India (GoI) prepared the National Electricity Policy (NEP) in February 2005 in consultation with the State Governments and Central Electricity Authority (CEA) for development of the Power Sector based on optimal utilisation of resources like coal, gas, nuclear material, hydro and renewable sources of energy. The Policy aims at, *inter alia*, laying guidelines for accelerated development of the Power Sector. It also requires CEA to frame National Electricity Plan once in five years. The Plan would be short term framework of five years and give a 15 years' perspective.

At the end of 2004-05, electricity requirement in Orissa was assessed as 16,640 Million Units (MU) of which 16,251 MU were available leaving a shortfall of 389 MU, which works out to 2.34 per cent of the requirement. The total installed power generation capacity in the State of Orissa including State share in CPSUs was 3,510 Mega Watt (MW) and effective available capacity¹⁸ was 2,808 MW against the peak demand of 2,408 MW. As on 31 March 2010, the comparative figures of requirement and total installed capacity vis-à-vis effective available capacity were 21,233 MU, 4,079 MW and 3,263 MW respectively. Thus, there was a growth in demand of 4,593 MU during review period, whereas the total capacity addition during review period was 569 MW. The shortfall in capacity addition was 700 MW considering peak demand during 2009-10.

In Orissa generation of power is carried out by Orissa Power Generation Corporation Limited (OPGC) and Orissa Hydro Power Corporation Limited (OHPC) which were incorporated in November 1984 and April 1995

¹⁸ Worked out at 80 per cent PLF as per CEA norm.

respectively under the Companies Act, 1956 as wholly owned Companies under the administrative control of the Energy Department of the Government of Orissa. Subsequently, in January 1999, OPGC was disinvested with 49 *per cent* of its shares held by AES Corporation (AES), USA and 51 *per cent* held by the State Government. The performance of OHPC had already been discussed in the Report of the Comptroller and Auditor General of India for the year ended 31 March 2009 (Commercial), Government of Orissa. In view of this, the performance of only OPGC (the Company) has been discussed in this Report.

The Management of the Company is vested in a Board of Directors (BoD) with the Secretary of the Energy Department as the Chairman and five other directors of which three are functional directors. The State Government and AES appoint three directors each on the BoD. The day-to-day operations are carried out by the Managing Director, who is the Chief Executive of the Company, with the assistance of Director (Operation) and Director (Finance). The Company has one thermal generating station, with the installed capacity of 420 MW. The turnover of the Company was ₹ 399.88 crore in 2009-10, which was equal to 4.66 *per cent* and 0.26 *per cent* of the turnover of State PSUs (₹ 8,573.26 crore) and State Gross Domestic Product (₹ 1,50,946.38 crore) respectively. It employed 490 employees as on 31 March 2010.

Scope and Methodology of Audit

2.1.2 The present review conducted during March to May 2010 covers the performance of the Company 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. The audit examination involved scrutiny of records at the Head Office and the generating station located at Banharpali.

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 at the generating station, interaction with the auditee personnel, analysis of data with reference to audit criteria, raising of audit queries, discussion of audit findings with the Management and issue of draft review to the Management for comments.

Audit Objectives

2.1.3 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; and

- To ascertain whether the contracts were awarded with due regard to economy and in transparent manner.

Financial Management

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

Operational Performance

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

Environmental Issues

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

Monitoring and Evaluation

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

Audit Criteria

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

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

Financial Position and Working Results

2.1.5 The financial position of the Company for the five years ended 2009-10 is given below.

(₹ in crore)					
Particulars	2005-06	2006-07	2007-08	2008-09	2009-10
A. Liabilities					
Paid up Capital	490.22	490.22	490.22	490.22	490.22
Reserve and Surplus (including Capital Grants but excluding Depreciation Reserve)	142.26	306.85	468.14	459.07	540.09
Borrowings (Loan Funds)					
Unsecured	76.31	51.34	31.32	17.75	9.01
Current Liabilities and Provisions	97.31	41.60	53.35	73.18	52.03
Deferred tax liabilities	23.98	38.50	37.48	36.99	26.25
Total	830.08	928.51	1,080.51	1,077.21	1,117.60
B. Assets					
Gross Block	1,135.61	1,137.48	1,155.66	1,167.94	1,191.98
Less: Depreciation	757.91	818.53	875.87	932.85	983.98
Net Fixed Assets	377.70	318.95	279.79	235.09	208.00
Capital works-in-progress (including construction Stores and Advances)	16.76	17.88	18.34	38.75	42.63
Investments	0	0	0	0	0
Current Assets, Loans and Advances	433.21	589.28	775.11	803.33	866.97
Misc. Expenditure (not written off)	2.41	2.40	7.27	0.04	0
Total	830.08	928.51	1,080.51	1,077.21	1,117.60

Against the norm of 70:30 debt equity ratio, the Company had a favourable ratio of 13:87 in 2005-06 which improved to 1:49 in 2009-10 due to repayment of loan of ₹ 67.30 crore. From the above table it can be seen that Current Assets, Loans and Advances increased from ₹ 433.21 crore in 2005-06 to ₹ 866.97 crore in 2009-10 due to increase in sundry debtors and inventories from ₹ 110.57 crore and ₹ 29.79 crore in 2005-06 to ₹ 149.31 crore and ₹ 49.25 crore respectively in 2009-10. The reasons for the increase in inventories and sundry debtors have been discussed in **Paragraphs 2.1.33 and 2.1.35**.

The details of working results of the Company like cost of generation of electricity, revenue realisation, net surplus/loss and earnings and cost *per unit* of operation are given below.

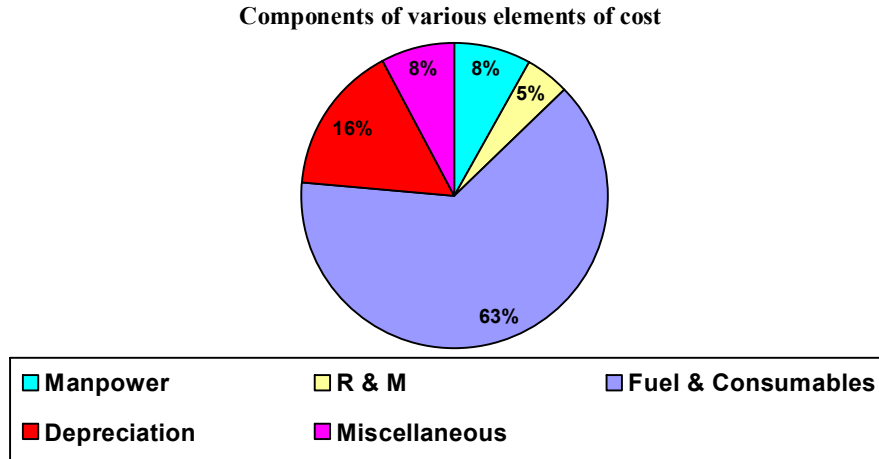
(₹ in crore)						
Sl.No	Description	2005-06	2006-07	2007-08	2008-09	2009-10
1.	Income					
	Generation Revenue	420.83	448.78	432.78	397.97	399.88
	Other income including interest/subsidy	18.99	28.29	51.91	66.90	56.06
	Total Income	439.82	477.07	484.69	464.87	455.94
2.	Generation					
	Total generation (In MUs)	3,095	3,318	3,047	3,191	2,961

Sl.No	Description	2005-06	2006-07	2007-08	2008-09	2009-10
	Less: Auxiliary consumption (In MUs)	322	344	312	334	315
	Total generation available for Transmission and Distribution (In MUs)	2,773	2,974	2,735	2,857	2,646
3.	Expenditure					
(a)	Fixed cost					
(i)	Employees cost	15.74	25.72	27.40	31.51	25.89
(ii)	Administrative and General expenses	8.39	9.34	8.97	12.26	16.72
(iii)	Depreciation	59.14	60.70	58.52	57.30	51.38
(iv)	Interest and finance charges	10.07	6.85	4.58	2.70	1.61
	Total fixed cost	93.34	102.61	99.47	103.77	95.60
(b)	Variable cost					
(i)	Fuel consumption					
	(a) Coal	153.34	159.16	160.65	183.46	184.67
	(b) Oil	3.25	4.07	5.30	8.86	9.70
	(c) Other fuel related cost including shortages/surplus	0.52	0.64	0	0	0
(ii)	Cost of water and Power consumption	7.02	7.53	7.74	8.04	7.29
(iii)	Lubricants and consumables	17.86	15.27	10.33	11.97	13.72
(iv)	Maintenance	3.32	8.71	15.50	13.35	15.37
	Total variable cost	185.31	195.38	199.52	225.68	230.75
C.	Total cost 3(a) + (b)	278.65	297.99	298.99	329.45	326.35
4.	Realisation (₹ per unit)	1.52	1.51	1.58	1.39	1.51
5.	Fixed cost (₹ per unit)	0.34	0.34	0.36	0.36	0.36
6.	Variable cost (₹ per unit)	0.67	0.66	0.73	0.79	0.87
7.	Total cost (₹ per unit) (5+6)	1.01	1.00	1.09	1.15	1.23
8.	Contribution (4-6) (₹ per unit)	0.85	0.85	0.85	0.60	0.64
9.	Profit (+)/Loss(-) (4-7) (₹ per unit)	0.51	0.51	0.49	0.24	0.28

It would be seen from above that the revenue from generation decreased in 2007-08, 2008-09 and 2009-10 as compared to 2006-07 due to low PLF. Further, employees' cost increased from ₹ 15.74 crore in 2005-06 to ₹ 31.51 crore in 2008-09 due to implementation of the pay revision in 2006-07 and increased incidence of retirement benefits. The employees cost decreased to ₹ 25.89 crore in 2009-10 due to charging of employees' remuneration relating to coal handling system to consumption of coal as well as reduction in performance incentives. However, the Company had earned profit of ₹ 147.85 crore, ₹ 170.22 crore, ₹ 168.69 crore, ₹ 111.37 crore and ₹ 81.19 crore during 2005-06, 2006-07, 2007-08, 2008-09 and 2009-10 respectively due to increase in other income.

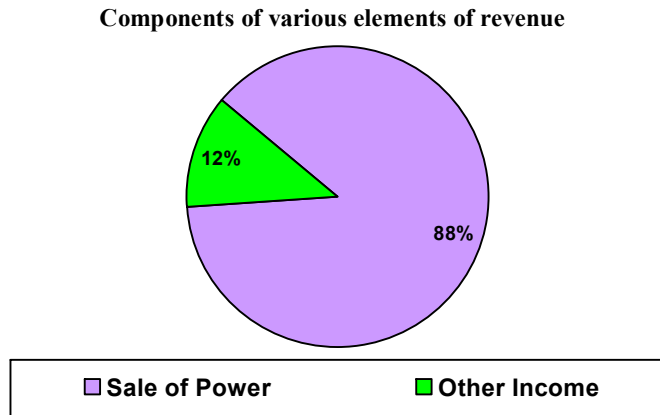
Elements of Cost

2.1.6 Fuel & Consumables and Depreciation constitute the major elements of costs. The percentage break-up of costs for 2009-10 is given below in the pie-chart.



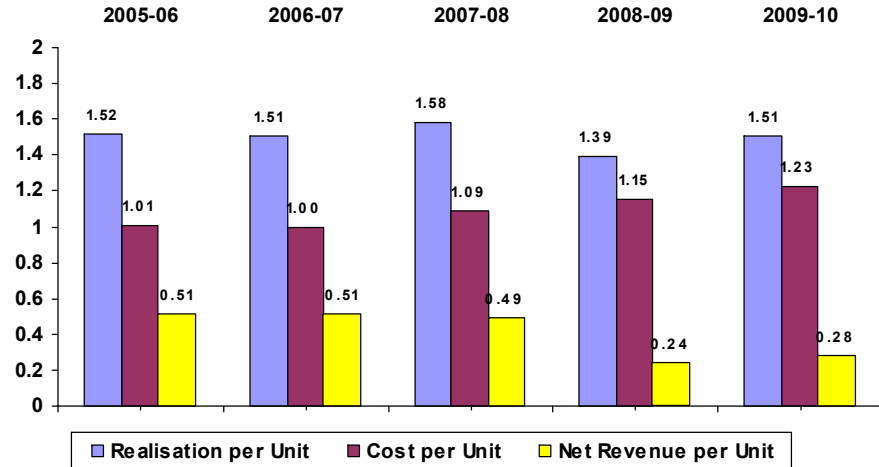
Elements of revenue

2.1.7 Sale of power constitutes the major elements of revenue. The percentage break-up of revenue for 2009-10 is given below in the pie-chart;



Recovery of cost of operations

2.1.8 The Company was able to recover its cost of operations. During the last four years ended 2009-10, the net revenue showed a positive trend as given in the graph below:



Despite availability of free reserves during 2005-10, the Company had not chalked out any capacity addition programme

Though the Company recovered its cost fully in all these years, there was scope for reduction in the cost of generation which could not be achieved due to non-utilisation of full capacity, high level of auxiliary consumption and poor fuel management. Despite availability of free reserves ranging from ₹ 142.26 crore to ₹ 540.09 crore during 2005-10, the Company had not chalked out any capacity addition programme.

Audit Findings

Audit explained the audit objectives to the Company during an ‘entry conference’ held on 18 May 2010. Subsequently, audit findings were reported to the Company and the State Government in June 2010 and discussed in an ‘exit conference’ held on 20 September 2010, which was attended by the Commissioner-cum-Secretary (Secretary) to the State Government, Department of Energy and the Managing Director of the Company. The Company also replied to audit findings in September 2010. The views expressed by them have been considered while finalising this review. The audit findings are discussed below.

Operational Performance

2.1.9 The operational performance of the Company for the five years ending 2009-10 is given in the **Annexure 7**. The operational performance of the Company was evaluated on various operational parameters as described below. It was also seen whether the Company was able to maintain pace in terms of capacity addition with the growing demand for power in the State. Audit findings in this regard are discussed in the subsequent paragraphs. These audit findings show that there was scope for improvement in performance.

Planning

2.1.10 National Electricity Policy (NEP) aims to provide availability of over 1,000 Units of per capita electricity by 2012, for which it was estimated that need based capacity addition of more than 1,00,000 MW would be required during 2002-12 in the country. The Government has laid emphasis on the full development of hydro potential being cheaper source of energy as compared to thermal. Besides, environmental concerns would have to be suitably addressed through appropriate advance actions. The power availability scenario in the State indicating own generation, purchase of power, peak demand and net deficit was as under:

The actual generation of the State as a whole, was sufficient to meet the average demand during 2005-08 but failed to meet the same during 2008-10. However, the actual generation was substantially less than the peak demand in all the years as shown below:

Year	Average Generation including share from CPSUs (MW)	Peak Demand (MW)	Average Demand (MW)	Percentage of actual generation to Peak Demand	Percentage of actual generation to Average Demand
2005-06	1,818	2,408	1,698	75	107
2006-07	2,059	2,574	1,898	80	108
2007-08	2,305	2,906	2,096	79	110
2008-09	2,123	3,021	2,247	70	94
2009-10	1,912	3,150	2,273	61	84

As may be seen from the above, the actual generation in 2005-08 was more than average demand. The surplus power was being exported. However, during 2008-09 and 2009-10 generation decreased as compared to 2007-08 due to dip in the hydro generation from 900.21 MW (2007-08) to 665.08 MW (2008-09) and 463.02 MW (2009-10). While peak demand was met during 2005-09 by resorting to purchase of power, the total supply even after import was not sufficient to meet the peak demand during the year 2009-10 as shown below:

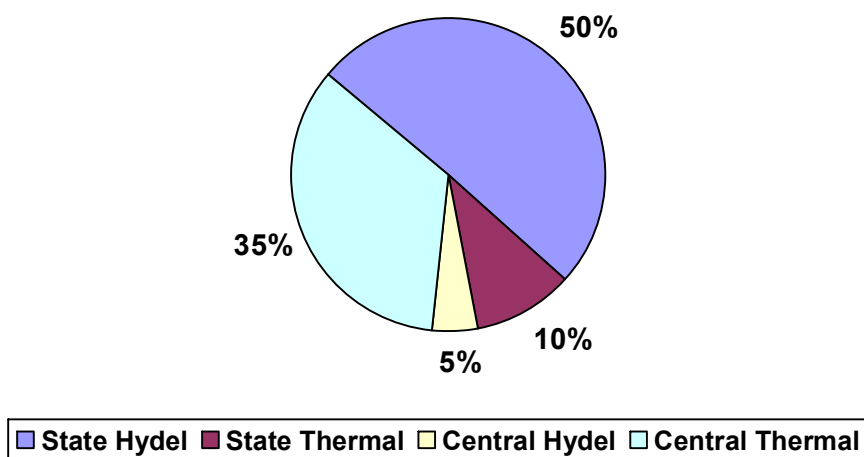
Year	Peak Demand (MW)	Peak Demand met (MW)	Sources of meeting peak demand		Peak Deficit (Percentage of Peak Demand)
			Own Generation ¹⁹ (MW)	Import/Purchase (MW)	
2005-06	2,408	2,408	1,828	580	0
2006-07	2,574	2,574	2,089	485	0
2007-08	2,906	2,906	2,015	891	0
2008-09	3,021	3,021	1,891	1,130	0
2009-10	3,150	2,450	2,007	443	22

¹⁹ Peak demand was met by increasing hydro generation at that point of time.

Thus, there remained a shortfall of 700 MW (about 22 per cent of the peak demand) in 2009-10 even after import. Consequently rotational load shedding was forced on the populace during 2009-10 only.

Capacity Additions

2.1.11 The State had total installed capacity of 3,510 MW at the beginning of 2005-06 which includes State share in CPSUs and increased to 4,079 MW at the end of 2009-10. The break up of generating capacities, as on 31 March 2010, under State-Hydro, State-Thermal, Central-Hydro and Central-Thermal is shown in the pie chart below.



To meet the growth in energy requirement from 16,640 MU in 2005-06 to 21,233 MU in 2009-10 in the State, a capacity addition of about 524 MW was required during 2005-06 to 2009-10, against which the State Government planned addition in capacity of only 165 MW in the State Sector. However, total addition including CPSUs/IPPs was 569 MW during review period. The break up of the capacity existing as on 1 April 2005, added/deleted during review period and existing as on 31 March 2010 is given in **Annexure 8**.

The particulars of capacity additions envisaged in State PSUs, actual additions and peak demand vis-à-vis energy supplied during review period are given below.

Sl.No	Description	2005-06	2006-07	2007-08	2008-09	2009-10
1.	Capacity at the beginning of the year (MW)	2,317	2,317	2,332	2,332	2,482
2.	Additions planned by the State/NEP (MW)	165	0	0	0	0
3.	Actual Additions (MW)	0	15	0	150	0
4.	Capacity at the end of the year (MW) (1 + 3)	2,317	2,332	2,332	2,482	2,482
5.	Shortfall in capacity addition (MW) (4 – 3)	165	-	-	-	-
6.	Peak demand (MW)	2,408	2,574	2,906	3,021	3,150

Sl.No	Description	2005-06	2006-07	2007-08	2008-09	2009-10
7.	Energy supplied (MUs)					
	a) Energy produced (Thermal and Hydro)	8,007	10,331	10,620	8,682	6,702
	b) Energy Purchased from CPSUs/CPPs	5,628	4,801	6,678	10,251	13,081

The State was not able to meet the average demand during 2008-09 to 2009-10 due to inadequate capacity addition of power in the State

It can be seen from the table that against the capacity addition envisaged in 2005-06, the actual addition took place in 2008-09. Further, the State Government also planned for capacity addition of 657 MW in the private sector through Independent Power Producers (IPPs) during 2007-10 which did not materialise. However, this capacity addition did not form part of the five year plan of the State. There was no project under committed category in NEP. Due to inadequate capacity addition, the State was not able to meet the average demand/requirement for consumption during the year 2008-09 and 2009-10. The gap in generation of power of State PSUs as well as share from CPSUs over the demand was met by procuring power from the Captive Power Plants (CPPs) and importing from other States.

Planning for capacity addition

2.1.12 The Planning Commission approved (April 1987) the project for setting up four thermal units by the Company to generate 840 MW (4x210MW). Due to paucity of funds, the Company, however, installed two units of 210 MW capacity each. However, common infrastructure facilities such as water intake channel, coal handling facilities, demineralised plant etc. were created for all the four units at a cost of ₹ 75 crore. The two units started commercial operation in 1994 and 1996 respectively.

Despite availability of funds and infrastructure facilities, the Company failed to install unit 3 and 4 mainly due to delay in finalisation of modalities for sale of power

Subsequently, the Project Approval Committee of the State Government approved (March 1998) the installation of unit 3 and 4 by the Company at a total cost of ₹ 1,706 crore. However, the project was not implemented. In the mean time, 49 *per cent* share of the Company was disinvested (January 1999) in favour of AES of United States of America. As per the tripartite agreement (October 1998) with the Company, State Government and AES, the Company was to implement unit 3 and 4 subject to finalisation of the power purchase agreement, fuel supply and other arrangements. The feasibility report submitted (May 2001) by Metallurgical and Engineering Consultants Limited (MECON) indicated that the project was scheduled to be completed within 33 months (unit 3) and 39 months (unit 4) at a total cost of ₹ 1,567 crore. The administrative approval of State Government, techno economic clearance from CEA, pollution clearance and coal linkage were also received for the project. However, despite availability of funds and common infrastructure facilities, the Company did not implement the project mainly due to non-finalisation of modalities for sale of power to GRIDCO Limited (GRIDCO) which was governed by a PPA, wherein it was envisaged that the same would be placed before the Orissa Electricity Regulatory Commission (OERC) as per Orissa Electricity Reform Act, 1995. GRIDCO filed (February 2002) a petition before OERC seeking approval of the PPA. The High Court upheld (March 2005) the power of OERC to approve the PPA. However, the Company filed

(March 2005) a Special Leave Petition (SLP) before the Supreme Court of India against the order of the High Court.

The State Government resolved (June 2008) the dispute over PPA with GRIDCO and it was decided to commission unit 3 and 4 with installed capacity of 2X600 MW with sub-critical technology. The State Government approved (October 2009) the proposal of the Company (July 2009) to change the configuration of the project from 2X600 MW to 2X660 MW capacity with adoption of super-critical technology. The project would be completed by April 2014 (unit 3) and October 2014 (unit 4) at an estimated cost of ₹ 9,000 crore proposed to be funded out of equity (25 per cent) and loan funds (75 per cent). However, the tie-up for loan fund was neither finalised nor was the 'Zero' date of the project declared so far (September 2010). In the exit conference the Secretary, Energy Department stated (September 2010) that once the project would be put to tender and the financial closure of the project occurs, the same would be considered as 'Zero' date.

Thus, due to delay in settlement of the dispute over the PPA, the project, scheduled to be completed by 2004-05, had not yet started (August 2010). This had affected the availability of low cost power in the State.

The State incurred extra expenditure of ₹ 660.18 crore due to purchase of high cost power from outside the State and from the CPPs

2.1.13 Further, the Government of Orissa (GoO) signed 13 Memorandum of Understandings (MoUs) in 2006-07 for installation of 17,655 MW through IPPs of which the share of the State was 4,414 MW. As per the original commissioning schedules, 657 MW was scheduled to have been available to the State by 2009-10. However, only one unit of 4X600 MW project was commissioned in August 2010. As a result, the State had to purchase 5,421 MU of high cost power from CPPs and other States at extra cost of ₹ 660.18 crore during 2008-10.

In the exit conference the Secretary, Energy Department stated (September 2010) that there was no significant capacity addition during the last 10 years due to which the power shortage occurred in the State and with the supply of 600 MW power from an IPP unit the State would be able to meet the deficit.

Project Management

2.1.14 No power project was implemented by the Company during the review period. The capacity addition of 165 MW was achieved by Orissa Hydro Power Corporation Limited during review period and discussed in the Report of the Comptroller and Auditor General of India for the year ended 31 March 2009 (Commercial).

Contract Management

2.1.15 Contract management is the process of efficiently managing contract (including inviting bids and award of work) and execution of work in an effective and economic manner. The works relating to the construction of projects were closed since 2003-04. There was also no expansion of the projects thereafter. During the period under review the Company had executed works relating to annual overhauling of boilers, Capital overhauling of Turbo

Generator of unit 1, Operation and Maintenance of Plant and Machineries, Development and capping of ash pond and up gradation of plant control system. The works were executed either by inviting open tenders or limited tenders. During the course of PA, test check of 23 works valued at ₹ 45 crore revealed the deficiencies in the contract management as discussed in **Paragraph 2.1.39**.

Operational Performance

2.1.16 Operation of the power plant is dependent on input efficiency consisting of material, manpower and output efficiency in connection with plant load factor, plant availability, capacity utilisation, outages and auxiliary consumption. These aspects have been discussed below.

Input Efficiency

Procedure for procurement of coal

2.1.17 The Company fixes generation targets for its thermal power stations considering capacity of plant, average plant load factor and past performance. The Company works out the coal requirement on the basis of targets so fixed and past coal consumption trends. The 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 the Company on availability basis. On the basis of linkage source approved by SLC, the Company entered into Fuel Supply Agreement (FSA) with collieries. The Company had coal linkage with Mahanadi Coalfields Limited (MCL) for supply of 'F' grade coal upto March 2009. The terms and conditions of supply/receipt of coal was governed as per MoU signed with MCL in January 1997. As per the new coal distribution policy (October 2007) of GoI, the Company signed (November 2009) a FSA with MCL for supply of an Annual Contracted Quantity (ACQ) of 27 lakh MT.

The position of coal linkages fixed, coal received, generation targets prescribed and actual generation achieved during the period from 2005-06 to 2009-10 is as under:

Particulars	2005-06	2006-07	2007-08	2008-09	2009-10	Total
Coal Linkage fixed (lakh MT)	31.50	31.80	28.20	32.55	27.00	151.05
Quantity of coal received (lakh MT)	26.11	27.25	27.35	29.03	25.50	135.24
Generation targets (MU)	2,980	3,040	3,034	3,256	3,127	15,437
Actual generation achieved (MU)	3,095	3,318	3,047	3,191	2,961	15,612
Shortfall in generation targets (MU)	(+)115	(+)278	(+)13	(-) 65	(-)166	(+)175

We observed that the shortfall in generation in 2008-09 and 2009-10 as compared to targets was not attributable to non-lifting of allotted quantity.

Though the stock position had become supercritical²⁰ in four months and in another four months it was critical²¹, the Company, however, managed the situation.

Quality of coal

2.1.18 Each thermal station is designed for usage of particular grade of coal. Usage of envisaged grade of coal ensures optimising generation of power and economising cost of generation. We observed that the grade of coal received from MCL was not always of the specified grade required by the thermal stations and was either inferior or ungraded coal. During review period²², the Company received 3.12 lakh MT of inferior coal, for which payment was made as *per* the declared/billed grade. This resulted in avoidable payment of ₹ 3.86 crore to MCL. The Company's claim for the grade difference for the period from 2005-06 to 2008-09 was not admitted by MCL on the ground that there was no agreement for entertaining such claims. As per clause 4.5 of the Coal Supply Agreement with MCL effective from 1 April 2009, if the grade analysed for the coal shows variation from the declared grade consistently over a period of three months, the purchaser shall request the seller for re-declaration of grade. We observed that though the Company claimed ₹ 1.39 crore towards grade variation for the year 2009-10 the claim was yet to be settled (September 2010).

Claim of the Company for ₹ 1.39 crore towards grade variation was not yet settled with MCL

Consumption of fuel

Excess consumption of coal

2.1.19 The consumption of coal depends upon its calorific value. The norm fixed by the Original Equipment Manufacturer (OEM) for production of one unit of power vis-à-vis maximum and minimum consumption of coal during the period of five years ending 2009-10 is depicted in the table below.

(Quantity in Kg)			
Name of the Station	Norms fixed in the project report ²³	Average min consumption during the year	Average max consumption during the year
Unit-I	0.784	0.828 (2006-07)	0.887 (2008-09)
Unit-II	0.784	0.822 (2006-07)	0.878 (2008-09)

There was excess consumption of 11.52 lakh MT of coal valued at ₹ 72.02 crore during 2005-10

From the table above it can be seen that in both the units the consumption remained higher than the norms in all the years under review. We noticed that consumption above the norm resulted in excess consumption of coal to the tune of 11.52 lakh MT during the review period as detailed in **Annexure 9**. Of this, 7.82 lakh MT was on account of usage of low grade coal and 3.70

²⁰ Supercritical:-When the stock is less than four days consumption.

²¹ Critical: - When the stock is less than seven days consumption.

²² Except the months of September 2005 to March 2007, December 2007, December 2008, March 2009, November 2009 and March 2010 for which joint monthly coal analysis reports were not made available to audit.

²³ Specific Coal consumption = Design Heat Rate (2351.198 Kcal/KWH)/Design Gross Calorific Value of Coal (3000 Kcal/Kg)

lakh MT on account of high heat rate. The value of this excess consumption of coal, worked out in audit, amounted to ₹ 72.02 crore, as shown below:

Sl.No.	Particulars	2005-06	2006-07	2007-08	2008-09	2009-10
1.	Unit generated (MUs)	3,095	3,318	3,047	3,191	2,961
2.	Coal required as per norms (lakh MT)	24.25	26.00	23.88	25.01	23.21
3.	Coal consumed (lakh MT)	26.05	27.45	26.67	28.17	25.53
4.	Excess consumption (lakh MT) (3 – 2)	1.80	1.45	2.79	3.16	2.32
5.	Rate per MT (in ₹)	592.84	572.86	599.40	651.05	676.01
6.	Coal consumed per Unit (Kg.) [(3 x 1,000) / 1]	0.842	0.827	0.875	0.883	0.862
7.	Value of excess coal (₹ in crore) (4 x 5)	10.67	8.31	16.73	20.59	15.72

The Management stated that due to higher ash content in the coal ranging from 37 to 41 *per cent*, the consumption was more and reduction of ash in the coal through washeries and beneficiation is not economical. The contention is not based on facts because the plant-design contemplated use of coal with 42 *per cent* ash content. The Management needs to analyse the reasons for excess consumption of coal to take corrective action.

Variation in calorific value of coal received led to excess consumption of 16.34 lakh MT of coal valued at ₹ 88.54 crore

2.1.20 The Company received 'F' grade coal from MCL which should have minimum Gross Calorific Value (GCV) of 3,865 Kcal/Kg. As per Power Purchase Agreement (PPA) with GRIDCO, the GCV of coal was to be 3,400 Kcal/Kg. The actual GCV of coal fed to the boiler, however, ranged from 2,304 to 3,043 Kcal/Kg. The Company did not analyse the reasons for such variation or took corrective action so far (August 2010). This led to further excess consumption of 16.34 lakh MT of coal valued at ₹ 88.54 crore during 2005-06 to 2009-10.

The Management stated that excess consumption is because of quality of mine and wide band of 'F' grade on which OPGC had no control and there would be variation in the sampling result of coal received and fed, however, effort would be taken in sampling coal at the receiving point. The reply did not elaborate the reasons for wide variation in the GCV of coal received and coal consumed. It also did not elaborate as to why no action was taken so far to analyse the coal at the receiving end.

2.1.21 Coal-quality improvement is an area which requires to be emphasised for optimum utilisation of coal. The CEA prescribed (2007) options like coal beneficiation and blending of high ash coal with low ash imported coal for higher operational performance and lower maintenance cost. The BoD decided (August 2008) to import 50,000 MT of low ash coal to blend with coal received from MCL, as five *per cent* imported coal, if blended with 95 *per cent* of MCL coal, would increase the PLF by 5.27 *per cent* leading to increase in generation of 196 MU. The OEM also advised (September 2008) the Company for use of imported coal for blending. The Company, however, did not make any plan for importing coal so far (September 2010).

The Management stated that GRIDCO had taken time to examine its proposal to use imported coal and their consensus came only in July 2010. However, the fact indicated that GRIDCO had given their consent in September 2008 to procure imported coal for maximisation of generation.

Manpower Management

2.1.22 National Electricity Plan (April 2007) fixed the norm for manpower per MW at 1.15 (Technical) and 0.61 (Non-technical) for the Tenth Plan in the State Sector. The Company fixed the staff pattern for each year based on the requirement of construction activities as well as operation and maintenance of the power station. Position of sanctioned strength, manpower as per NEP norm and actual manpower is given below:

Sl. No.	Particulars.	2005-06	2006-07	2007-08	2008-09	2009-10	
1	Sanctioned strength	755	710	614	614	605	
2	Manpower as per the NEP norm	Technical	483	483	432	432	432
		Non-technical	256	256	231	231	231
		Total	739	739	663	663	663
3	Actual manpower	Technical	422	412	379	298	298
		Non-technical	177	175	181	192	192
		Total	599	587	560	490	490
4	Expenditure on salaries and wages (in ₹)	15.74	25.72	27.40	31.51	25.89	

It can be seen from the above table that actual manpower was far below the NEP norms during all the years. The vacancy was predominant in the technical cadre. The Company realised (August 2008) that its existing manpower lacked skills and exposure in areas like safety, human resource management, business excellence, project development, project execution, strategic planning, regulating management, power trading, etc. However, it did not document any recruitment policy to ensure inducting suitable personnel so as to avoid eventuality of adverse plant performance.

Output Efficiency

Shortfall in Generation

2.1.23 The Company fixed the annual generation target which was not approved by the CEA. The year-wise target and actual generation for the five years ending March 2010 is as follows:

Year	Target (MU)	Actual Generation (MU)	Shortfall in Generation (MU) (+)excess /(-)shortfall
2005-06	2,980	3,095	(+)115
2006-07	3,040	3,318	(+)278
2007-08	3,034	3,047	(+)13

Year	Target (MU)	Actual Generation (MU)	Shortfall in Generation (MU) (+)excess /(-)shortfall
2008-09	3,256	3,191	(-) 65
2009-10	3,127	2,961	(-)166

It can be seen from the table that the Company was able to achieve the targeted generation during 2005-08. However, during 2008-09 and 2009-10 there was a shortfall of generation of 231 MU against the target. The year wise details of energy to be generated as per design, actual generation, plant load factor as per design and actual PLF up to the year 2009-10 are as given in **Annexure 10**.

There was shortfall in generation of 1,534 MU during 2005-10 due to frequent breakdown of units

The details in the Annexure indicated that generation and PLF achieved were below the designed parameters during the five years up to 2009-10. As against the total designed generation of 17,146 MU of energy during the five years ended 2009-10, the actual generation was 15,612 MU leading to shortfall of 1,534 MU. Thus, resources and capacity were not utilised to the optimum level due to frequent breakdown of units.

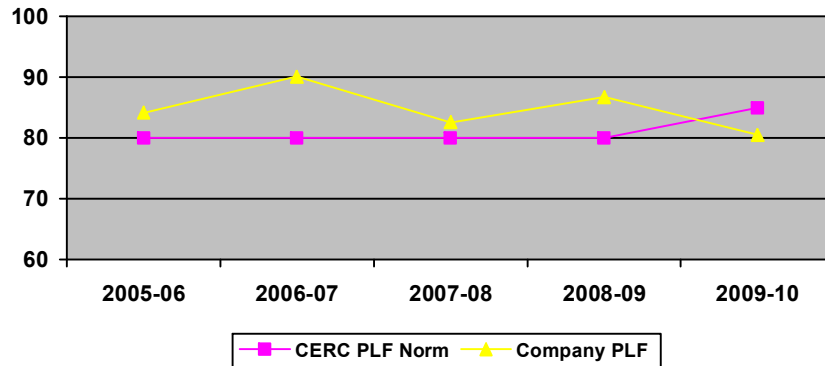
The Management stated that average generation loss arose from supply of bad quality coal, excess time taken in up-gradation of Direct Control System (DCS) of unit 1 and several reworks undertaken due to bad workmanship. The reply, however, did not elaborate the reasons for feeding bad quality coal to the plant inspite of receiving requisite quality of 'F' grade coal. Further, generation loss due to bad workmanship indicated management's failure to monitor the performance of the contractors which needed to be addressed to avoid shortfall in generation.

Plant Load Factor (PLF)

2.1.24 Plant Load Factor refers to the ratio between the actual generation and the maximum possible generation at the installed capacity. According to norm fixed by Central Electricity Regulatory Commission (CERC), the PLF for thermal power generation stations should be 80 per cent up to 2008-09 and 85 per cent from 2009-10, against which the national average was 73.71 per cent, 77.03 per cent, 78.75 per cent, 77.22 per cent and 77.48 per cent from 2005-06 to 2009-10. The PLF of the Company was 84.10 per cent, 90.16 per cent, 82.57 per cent, 86.71 per cent, and 80.46 per cent from 2005-06 to 2009-10 respectively.

The PLF of Unit-6 of Kota TPS of RRVUNL at 101.10 per cent was highest among all state sector units against the Company's best PLF of 92 per cent of Unit-II achieved in 2006-07.

The following line graph depicts the CERC norm and the PLF of the Company during 2005-10.



It can be seen from the graph that the PLF of the Company was more than the CERC norm and the national average in all the years except in 2009-10 when it was below CERC norm. However, unit-wise PLF remained on the lower side as compared to best performer. Further, the highest PLF (90 per cent) achieved in 2006-07 declined gradually to 80 per cent in 2009-10 due to low plant availability and usage of low grade coal. The unit wise particulars of PLF, plant availability, outages etc are given in **Annexure 11**.

Low Plant availability

2.1.25 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 2009-14, the average plant availability of the power station was 89 per cent during review period.

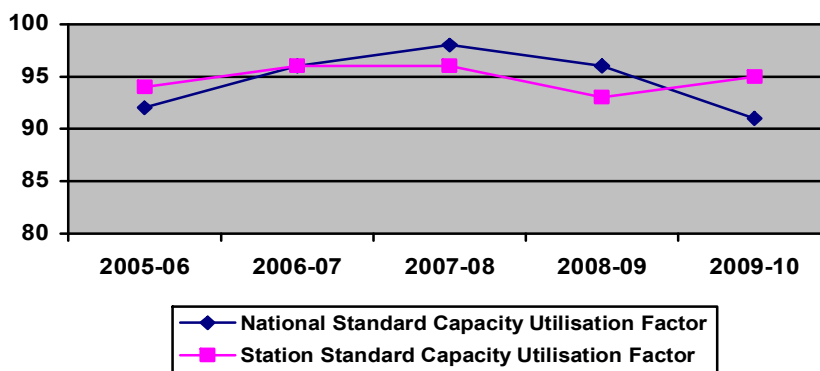
The details of total hours available, total hours operated, planned outages, forced outages and overall plant availability is shown below:

S.No.	Particulars	2005-06	2006-07	2007-08	2008-09	2009-10
1.	Total hours available	17,520	17,520	17,568	17,520	17,520
2.	Operated hours	15,719	16,415	15,163	16,282	14,837
3.	Planned outages (in hours)	1,631	908	980	835	1,490
4.	Forced outages (in hours)	170	197	1,425	403	1,193
5.	Plant availability (per cent)	90	94	86	93	85

It can be seen from the above table that the plant availability of 90 per cent in 2005-06 reduced to 85 per cent in 2009-10 due to increase in forced outages and longer duration of annual maintenance as discussed in **Paragraphs 2.1.27 and 2.1.29** respectively.

Low Capacity utilisation

2.1.26 Capacity utilisation means the ratio of actual generation to possible generation during actual hours of operation. Based on the national average PLF of 73.71 per cent, 77.03 per cent, 78.75 per cent, 77.22 per cent and 77.48 per cent from 2005-06 to 2009-10 and plant availability at 80 (2005-09)/85 (2009-10) per cent, the standard capacity utilisation factor works out to be 92 (2005-06), 96 (2006-07 and 2008-09), 98 (2007-08) and 91 (2009-10) per cent for the power plant. The plant utilisation factor of the Company was between 93 (2008-09) and 96 (2006-07 and 2007-08) per cent during 2005-10, as shown in the following line graph:



We noticed that in spite of plant availability of 85 to 94 per cent, the actual load at which the plant was operated was 80 to 90 per cent. The reasons for non operation of plant at the available capacity during 2005-10, as we analysed, were:

- Running of units with poor quality coal leading to generation loss of 762 MU,
- Running of units with partial load resulting in loss of generation of 262 MU.
- Constraints on transmission capacity due to grid problem leading to loss of generation of 21 MU.

Outages

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

- The total number of hours lost due to planned outages decreased from 1,631 hours in 2005-06 to 835 hours in 2008-09 i.e. from nine per cent to five per cent and thereafter increased to 1,490 hours in 2009-10 i.e. 8.5 per cent of the total available hours in the respective years.
- The forced outages in power stations increased from 170 hours in 2005-06 to 1,193 hours in 2009-10 i.e. from one to seven per cent of the total available hours in the respective years. The forced outages

remained well within the norm of 10 *per cent* fixed by CEA in all the five years ended 31 March 2010. However, forced outages were on the higher side during 2007-08 and 2009-10 on account of change of turbine blade and stator core bar respectively. Out of the total forced outages of 3,387 hours, boiler tube failures (11 cases for 742 hours) accounted for 21.90 *per cent* of the forced outages. The tube failures occurred between one and 201 days after the annual/capital overhauling. The reasons for successive boiler tube failures, as analysed by us, were attributable to external metal wastage and short term over-heating. During each annual overhauling the tubes were thoroughly inspected for any external metal deposit/loss of thickness of tubes and repaired accordingly. In spite of the annual overhauling, the frequent incidences of tube failures in the boilers could not be reduced and needed investigation.

Auxiliary consumption of power

2.1.28 Energy consumed by power stations themselves for running their equipments and common services is called auxiliary consumption.

Among the State Sector Power Stations, Wanakaberi Thermal Power Station of GSECL achieved lowest auxiliary power consumption at 7.05 *per cent*.

As per the norm of CEA, auxiliary consumption should be limited to 7.5 *per cent* of generation. However, the PPA executed with GRIDCO provided

There was excess auxiliary consumption of 144 MU valued at ₹ 21.41 crore during 2005-10

for consideration of auxiliary consumption at 9.5 *per cent* of generation for determination of the tariff. The actual consumption varied from 10.24 to 10.64 *per cent* during 2005-06 to 2009-10 resulting in excess consumption of 144 MU valued at ₹ 21.41 crore which could not be dispatched to the grid.

The reasons for excess auxiliary consumption, as we analysed, were attributable to running of high tension equipment at low load and low power factor due to non-commissioning of unit 3 and 4. However, the Company did not take up the energy audit to determine higher consuming areas (August 2010).

While accepting the facts, the Management stated that steps were being taken to reduce the auxiliary consumption and energy audit would be conducted during 2010-11.

Repairs and Maintenance

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

As per the CERC norm, annual overhauling of boilers is to be carried out in every alternate year within a period of 30 days with 15 days mini-shutdown for statutory inspection during the year subsequent to the year of capital maintenance. However, the Company did not prepare the annual overhauling programme in line with the CERC norm. It fixed the annual programme on its own and provided the time schedule in its budget. We observed that during the years 2005-10, the annual overhauling and capital overhauling of both the units were conducted as per the schedule except during the year 2008-09 when the annual overhauling of unit 1 was delayed by 75 days and unit 2 was delayed by 47 days. Further, against the Company's schedule (2005-06 to 2009-10) of completing the annual overhauling and capital overhauling of two units within 241 days, the actual time taken was 292 days which included 51 days for change of turbine blade and stator core bar during 2007-08 and 2009-10 respectively.

There was loss of generation of 88MU value at ₹ 6.01 crore due to delay in completion of overhauling of unit 1

We observed that due to non-inclusion of replacement of stator core bar in the scope of work awarded (August 2005) to the contractor, the capital overhauling of unit 1 took 14 more days resulting in loss of generation of 56 MU valued at ₹ 4.98 crore. Further, trim balancing work²⁴ was not included in the work awarded (June/July 2007) to the contractor and the same had to be done subsequently with additional generation loss of 32 MU valued at ₹ 1.03 crore.

While accepting the excess time taken for 51 days during 2005-10 for completing the AOH, the Management stated that replacement of the stator core bar in the scope of work for overhauling in 2005-06 was not included since stator bar failure was a rare incident. The fact remains that during ELCID test conducted in 2001, abnormal leakages of current were noticed and stator core bar was not repaired at that time. Hence, the replacement of stator core bar should have been included in the AOH done during 2005-06. Further, the contention of the Management that trim balancing was not possible during annual overhauling as it was to be done while the machine was in operation was not correct since the Company carried out trim balancing work during earlier AOH of unit 1 conducted in July 2005.

Renovation and Modernisation

2.1.30 The power stations of the Company were commissioned in the year 1994 (unit 1) and 1996 (unit 2). Since the plant had not completed 20 years of operation, renovation and modernisation was not due during the review period.

Operation and Maintenance

2.1.31 The operation and maintenance (O&M) cost includes expenditure on the employees, repair and maintenance including stores and consumables, consumption of capital spares not part of capital cost, security expenses, administrative expenses of the generating stations besides corporate expenses apportioned to each generating stations etc. but excludes the expenditure on fuel.

²⁴ To balance the position and weight of the blades of turbine.

The Company sustained loss of ₹ 3.88 crore due to excess O&M expenses over the PPA's norm

CERC in its regulation 2004/2009 allowed O&M norm as ₹ 10.82 lakh, ₹ 11.25 lakh, ₹ 11.70 lakh, ₹ 12.17 lakh and ₹ 18.20 lakh per MW in respect of 200-250 MW capacity thermal power units for the years 2005-06 to 2009-10 respectively. Against the above mentioned norms, the total O&M cost per MW incurred by the Company was ₹ 10.62 lakh, ₹ 14.62 lakh, ₹ 14.70 lakh, ₹ 16.03 lakh and ₹ 17.00 lakh for the years 2005-06 to 2009-10 respectively. We observed that O&M expenses were higher than the norm fixed by the CERC in all the years except for 2005-06 and 2009-10. However, O&M expenses incurred by the Company were regulated as per PPA with GRIDCO. We observed that out of the O&M expenses of ₹ 305.85 crore during 2005-10 the amount recovered was ₹ 301.97 crore in the tariff. Consequently, expenses amounting to ₹ 3.88 crore incurred over and above norm of the PPA during review period were absorbed by the Company reducing its profit.

Software maintenance

Unplanned implementation of SAP-ERP software package led to unfruitful expenditure of ₹ 0.98 crore

2.1.32 The Company obtained (December 2008) user licenses from SAP India Private Limited for implementation of Enterprise Resource Planning (ERP) at a cost of ₹ 66.14 lakh. It also incurred a sum of ₹ 32.08 lakh towards annual maintenance contract charges for SAP-ERP software package for the period from January 2009 to December 2010 without implementing the software and taking any service from the supplier. This indicated ill-planning, resulting in unfruitful expenditure of ₹ 98.22 lakh.

The Management stated that modalities of implementation would be taken up shortly.

Financial management

2.1.33 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 borrowing at favourable terms at appropriate time.

The power sector companies should therefore streamline their system and procedures to ensure that:

- Funds in idle inventory are not invested,
- Outstanding advances are adjusted / recovered promptly,
- Funds are not borrowed in advance of actual need and
- Swapping high cost debts with low cost debt is availed expeditiously.

The main sources of funds of the Company were realisation from sale of power and interest earned from investment in term deposits. These funds were mainly utilised to meet the cost of fuel, oil, operation and maintenance, debt servicing, employee and administrative cost and system improvement works of capital and revenue nature. Details of sources and utilisation of resources on

actual basis of the Company for the years 2005-06 to 2009-10 are given below:

(₹ in crore)						
Sl.No.	Particulars	2005-06	2006-07	2007-08	2008-09	2009-10
Cash Inflow						
1	Net profit	161.91	176.87	185.64	133.31	126.25
2	Add: adjustments	58.46	60.70	58.52	57.30	62.56
3	Operating activities	44.47	32.98	17.07	27.72	12.40
4	Investing activities	13.98	21.75	40.74	61.86	58.53
5	Financing activities	0	0	0	0	0
	Total	278.82	292.30	301.97	280.19	259.74
Cash Outflow						
6	Operating activities	56.59	62.57	116.67	139.72	118.44
7	Investing activities	7.45	3.13	19.79	25.90	38.09
8	Financing activities	159.23	89.25	20.02	134.01	8.74
	Total	223.27	154.95	156.48	299.63	165.27
Net increase/decrease in cash and cash equivalent		55.55	137.35	145.49	(19.44)	94.47

It can be seen from the above table that though the Company had cash surplus during 2005-08 and 2009-10, it suffered from cash deficit in 2008-09 mainly due to:

- increased outflow towards dividend;
- locking up of funds of ₹ 15.77 crore in inventory held in excess of norm with loss of interest of ₹ 1.89 crore per annum; and
- delay in recovery of power bills from GRIDCO due to non-finalisation of tariff since 2006-07 as discussed in subsequent **Paragraph 2.1.36**.

Non-availing of prepayment of loan

2.1.34 Due to liberalised economic policies, the interest rates on the loans started declining from 1999-2000 onwards. Financial institutions evolved schemes to restructure the high cost loans into low cost loans with certain conditions. It was, therefore, advantageous for the companies to go for restructuring high cost loans. The Company availed (February 1995) a term loan of ₹ 41 crore at interest rate of 16 *per cent per annum* from Power Finance Corporation Limited (PFC) for setting up unit 1 and 2. PFC approved (May 2004) the loan restructuring proposal of the Company envisaging interest reset with put option at the end of every three years. In case of acceptance of the option by the Company, the rate of interest would apply from the standard due date immediately following the end of three years period. On the other hand, in case of enhancement of rate of interest by PFC, the Company would have the option for prepayment of the loan without payment of premium. Audit observed that PFC enhanced the interest rate from 9.75 to 12 *per cent* with effect from 15 June 2007. Hence, the Company had the option to repay the outstanding loan of ₹ 12.30 crore without payment of any premium. Though, the Company invested ₹ 45 crore in short term deposits (STD) during June/July 2007 at interest rate of 6.5 to 10.75 *per cent per annum*, it paid interest at 12 *per cent per annum* on the PFC loan. Had the Company repaid (June 2007) the entire loan as per the restructuring proposal

of PFC, it could have saved ₹ 57.45 lakh towards interest from June 2007 to June 2010.

The Management stated that the interest on the loan was a pass through item in the PPA and any deviation required confirmation from GRIDCO and the reset clause did not have impact on its profit and loss account. The reply is not convincing as GRIDCO had given its consent in June 2007 itself to restructure the loan and the benefit accruing through restructure would have accrued to the consumers at large.

Claims and dues

2.1.35 The Company sells the entire generation to GRIDCO through tariff, determined as per the PPA of August 1996. In addition to the recovery of costs, the PPA envisaged return on equity at the rate of 16 *per cent* on the equity amount of ₹ 450 crore. The recovery of sale proceeds is also secured (November 1998) as the Company had an Escrow arrangement with GRIDCO. The monthly bills of the Company were settled regularly by GRIDCO barring certain instances. We observed that annual tariff proposals for the year 2006-07, 2007-08 and 2008-09 based on which bills were raised on GRIDCO, were not accepted by GRIDCO and paid tariff provisionally at the applicable rate for the year 2005-06. The tariff for the year 2009-10 was accepted by GRIDCO and bills were settled fully. GRIDCO disputed the criteria of 68.49 *per cent* PLF for calculation of incentive as stipulated in the PPA which was resolved by the State Government in June 2008. Accordingly, the differential amount of ₹ 92.61 crore outstanding against GRIDCO and payable to the Company had not been realised so far (September 2010).

The outstanding amount of ₹ 92.61 crore against GRIDCO remained unrealised till date

There is an urgent need to optimise the internal generation by vigorous pursuance of energy bills for the years 2006-09 to ensure expeditious recovery of dues.

Tariff fixation

2.1.36 Annual tariff of the Company is fixed as per the existing PPA. As per the agreement, PPA was to be vetted and concurred by the OERC. The jurisdiction of OERC over the PPA of the Company is subjudice. GRIDCO in their Annual Revenue Requirement (ARR) filed with the OERC had been considering the power cost at the applicable rate determined as per PPA. As such, the Company had not filed separate application for ARR before OERC. As verified from the tariff fixation under PPA there was under recovery of O&M expenses amounting to ₹ 3.88 crore as discussed in **Paragraph 2.1.31**. In addition to this the Company could not maintain the norm for auxiliary consumption of electricity at the station as discussed in **Paragraph 2.1.28**. Excess auxiliary consumption over the norm of 9.5 *per cent* was not considered for calculation of incentive in the tariff during 2005-06 to 2009-10 which resulted in non-recovery of ₹ 4.09 crore in the tariff during that period. Similarly, fuel cost of ₹ 1.48 crore on excess auxiliary consumption during the review period could not be recovered through tariff. As per the PPA, Electricity Duty (ED) on the auxiliary consumption was to be limited to nine

Due to excess auxiliary consumption of power and O&M expenditure over the PPA norm, ₹ 12.34 crore could not be recovered through tariff

per cent whereas the Company was paying ED at the rate ranging from 10 to 11 *per cent* due to higher auxiliary consumption. We observed that due to auxiliary consumption being over the norm, ED amounting to ₹ 2.89 crore could not be recovered in the tariff for the years 2005-06 to 2009-10. Thus, an amount of ₹ 12.34 crore remained unrecovered through tariff and was absorbed by the Company. This in turn had reduced the profitability by 1.57 *per cent* during review period.

Environment Issues

2.1.37 In order to minimise the adverse impact on the environment, the GoI had enacted various Acts and statutes. At the State level, Orissa State Pollution Control Board (OSPCB) is the regulating agency to ensure compliance with the provisions of these Acts and statutes. Ministry of Environment and Forests (MoE&F), GoI and Central Pollution Control Board (CPCB) are also vested with powers under various statutes. The Company has an environmental wing at the generating station.

With regard to compliance with the provisions of various Acts, we observed the following:

Air Pollution

2.1.38 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 level (Suspended Particulate Matter-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.

Use of high ash content coal

2.1.39 As per MoE&F 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 annual weighted average basis. We observed that the Company used coal obtained from Lakhapur coal mines of MCL which is located in sensitive area. During the review period, the Company received 135.24 lakh MT of coal, in which the weighted average of ash ranged from 37 to 41 *per cent*. The Company assessed (January 2008) that it had been incurring generation loss ranging from 2.6 to 5.6 *per cent* due to bad quality of coal. With a view to obviating this problem as well as availing benefits like more generation, more revenue, less auxiliary consumption, less ash generation and disposal, less wear tear to the equipment, Director (Operation) proposed (January 2008) to use 20 *per cent* washed coal to be blended with existing coal with an extra cost implication of ₹ 504 per MT. There was nothing on record to indicate as to why the proposal was not pursued by the Management. On the contrary the Company continued to use the coal with high ash content. Consequently, MoE&F's norm of using coal with less than 34 *per cent* ash content remained unfulfilled.

Non-achievement of specified SPM levels even after up-gradation

2.1.40 As per the consent order (December 2006) under Air (Prevention and Control Pollution) Act, 1981 the thermal plant should maintain SPM at 150 mg/Nm³. The ESPs installed at the station are also designed to achieve the same norm. We observed that the SPM level ranged between 132 to 147 mg/Nm³ during June 2007 to May 2008. With a view to reducing the present level of SPM by 25 *per cent* the BoD decided (May 2008) to install advanced controllers in the ESPs. Accordingly, the Company installed (February 2009) advanced controllers in the ESPs at a cost of ₹ 1.65 crore. We observed that in spite of incurring this expenditure the objective of reducing the SPM level by 25 *per cent* was not achieved as same level remained at a level of 123 to 140 mg/Nm³ during March 2009 to March 2010 against the level of 132 to 147 mg/Nm³ prior to upgradation. As the desired level of reduction in SPM level was not achieved even after upgradation, the objective of investment of ₹ 1.65 crore had not been achieved to full extent.

The Management stated (September 2010) that on an average basis there was improvement in bringing down SPM level. The fact, however, remained that the objective of reduction of SPM level by 25 *per cent* remained largely unfulfilled.

Ash Disposal

2.1.41 Annual generation of ash from the power station is around 10 to 11 lakh MTs. MoE&F 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. Further as per MoEF notification (November 2009), the Company would have to achieve 50 *per cent* ash utilisation by November 2010. We observed that against the total fly ash of 54.32 lakh MT generated during 2005-10, only 8.83 lakh MT was utilised. This indicated that the Company would not be in a position to achieve 50 *per cent* ash utilisation by November 2010 at this pace. We observed that the Company did not comply with ash utilisation targets and as a result paid higher amount of water cess amounting to ₹ 50.86 lakh during review period.

The Management stated that the Company was pursuing with MCL to get allotment of mine voids for ash utilisation.

Delay in completion of Dry Fly Ash Handling System

2.1.42 With a view to ensuring 100 *per cent* ash utilisation by its thermal power units in a phased manner by 2013-14, the Company awarded (March 2007) the work for supply, erection and commissioning of the dry ash handling system (DAHS) to Indure (P) Limited (IPL) at a cost of ₹ 3.45 crore. The work was scheduled to be completed by January 2008. The DAHS was to collect the dry ash from the Electrostatic Precipitators and store it in the silos for further utilisation. As IPL failed to complete the work on scheduled date, the Company, on the request of IPL, extended the completion period upto April 2008 without levy of penalty. IPL failed to complete the work so far (May 2010) due to delay in submission of drawings, non-deployment of man

The Company incurred extra expenditure of ₹ 1.64 crore towards disposal of dry ash

and machinery etc. The Company withheld ₹ 34.50 lakh from IPL towards Liquidated Damages (LD). The Company had already incurred expenditure of ₹ 3.03 crore (March 2010). As the completion of DAHS was delayed, the Company disposed 8.21 lakh MT of dry ash through slurry during May 2008 to November 2009 incurring extra expenditure of ₹ 1.64 crore.

The Management stated that filling of dry ash in the low lying areas is not a sound proposal due to environmental reasons, and the system was meant for exploring new markets for use in cement production. However, the reply was contrary to its own actions in the past.

Noise Pollution

2.1.43 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 was to be controlled at source, adequate silencing equipment should be provided at various noise sources and a green belt should be developed around the plant area to diffuse noise dispersion. The Company is required to record sound levels in all the areas stipulated in the rules referred to above. We observed that noise levels recorded by the Company during day time in industrial areas for a period of five years upto 2009-10 were within the prescribed level of 75 decibel (dB) except in December 2009 (82 dB).

The Management stated that it had installed silencer on start up ejectors to reduce noise.

Water Pollution

2.1.44 The waste water of the power plant is the source of water pollution. As per the provisions of the Water (Prevention and Control of Pollution) Act, 1974, the power station of the Company is required to obtain the consent of OSPCB which inter-alia contains the conditions and stipulations for water pollution to be complied by the Company.

Audit scrutiny revealed that as per the norms prescribed by OSPCB, total suspended solids (TSS) in effluents from the power station of the Company should not exceed 100 mg/l²⁵. We noticed that the power station maintained 'Zero effluent discharge' from June 2008.

Monitoring by top management

MIS data and monitoring of service parameters

2.1.45 Power Generating Company plays an important role in the State economy. For such a giant organisation to succeed in operating economically, efficiently and effectively, there should be documented management systems of operations, service standards and targets. Further, there has to be a Management Information System (MIS) to report on achievement of targets

²⁵ Milligram per litre.

and norms. The achievements need to be reviewed to address deficiencies and also to set targets for subsequent years. The targets should generally be such that the achievement of which would make an organisation self-reliant. In this regard, we observed the following:

- The Company has set targets for the important operational parameters.
- The MIS covers key performance parameters like generation of electricity, auxiliary consumption in the plant, loss of generation due to system deficiencies, consumption of key input like coal and oil.
- The performance reports were evaluated by the Board on quarterly basis. For arresting the deficiencies in the generation of electricity and consumption of inputs remedial actions were suggested by the Board.
- The BoD did not evaluate the socio-economic parameters of expansion of station for installation of unit 3 and 4 in the context of power requirement of the State and meeting the shortfall in generation in the State.

Acknowledgement

We acknowledge the co-operation and assistance extended by the Management and staff of the Company at various stages of conducting the Performance Audit and the Entry and Exit conference.

Conclusion

- **Against the requirement of capacity addition of 524 MW during review period capacity addition was 165 MW only due to inaction and deficient planning of capacity addition programme.**
- **Though the Company had obtained all necessary infrastructural and statutory clearances by 2001 and already created common facilities, it could not carry out execution of unit 3 and 4 despite having revenue balances ranging from ₹ 142.26 to ₹ 545 crore.**
- **The reasons for receipt of poor quality coal were not analysed. There was excess consumption of coal valued at ₹ 72.02 crore.**
- **While the PLF remained above national average and ranged from 90.16 per cent to 80.46 per cent during review period, plant availability was also above CEA norm of 80/85 per cent during the same period.**
- **Auxiliary consumption remained above the norm and as a result, an amount of ₹ 8.46 crore was not considered for tariff fixation.**
- **Operation and maintenance expenses remained in excess of the norm.**
- **Claims of ₹ 92.61 crore were outstanding against GRIDCO.**

Recommendations

The Company may consider:

- **A time bound programme of its capacity addition by close monitoring the timely execution so as to meet the national objective of power for all by 2012;**
- **taking measures for reduction of cost of generation through use of washed/imported coal for blending with existing coal;**
- **taking up the issue of receipt of poor quality of coal with Union Ministries of Power and Coal;**
- **ensuring adherence to scheduled maintenance of the plants and upkeep of the equipments to reduce forced shutdown of generating units; and**
- **increase utilisation of dry ash as per the MoE&F norms.**

2.2 Orissa Lift Irrigation Corporation Limited

Execution of Lift Irrigation Projects

Executive summary

The Company was incorporated in October 1973 with the main objective of installation, operation and maintenance of lift irrigation projects (LIPs) as well as for collection of economic water rates from the cultivators for water supplied from the LIPs. The activities relating to operation and maintenance as well as collection of water rate were transferred to the Pani Panchayats (PPs) after implementation of PP Act, 2002. The activities of the Company for execution of LIPs were reviewed to assess the adequacy in planning of the Company for creation of irrigation potential, execution of LIPs under various schemes in an economic, efficient and effective manner, revival of defunct LIPs, proper utilisation of grants and adequacy of internal control and effectiveness of the monitoring activities of top management.

Planning of the Company for execution of LIPs

Orissa being an agrarian State, irrigation plays a major role in poverty alleviation. Out of total cultivable land of 61.65 lakh hectares (Ha.) in the State, 8.90 lakh Ha. had lift irrigation potential. Neither the State Government nor did the Company prepare any perspective plan for development of irrigation facility till September 2009. The Company, however, prepared (October 2009) a perspective plan (2009-14) to install 7,739 LIPs with designed irrigation potential of 1.57 lakh Ha. The Government of Orissa (GoO) had also decided (May 2005) to prepare State master plan to provide irrigation facilities to 35 per cent of the cultivable area in every block during 2005-10 under which the Company was required to install 9,391 LIPs in 174 deficit blocks to create irrigation potential in 1.82 lakh Ha. Against this, the Company installed only 1,532 LIPs (16 per cent) during 2005-10 which indicates the lack of focus and direction for achievement of the objectives of the State master plan. Further, due to non-prioritisation of

execution of LIPs in deficit blocks, 2,367 LIPs were installed in non-deficit blocks.

Execution of LIPs under various schemes

The creation of irrigation potential by the Company during 2005-10 was lagging behind since the Company could achieve irrigation potential of 86,058 Ha. against the target of 1,33,598 Ha. The implementation of LIPs under Biju Krushak Vikas Yojana (BKVY) during 2005-10 was also not satisfactory since against the target of 3,083 LIPs sanctioned by NABARD at an estimated cost of ₹244.60 crore, the Company installed only 2,800 LIPs at a cost of ₹192.95 crore. Further, due to deficiencies on the part of the Company during implementation, designed ayacut of 53,036 Ha. could not be achieved. The Company could not execute 323 new LIPs targeted during 2005-10 under BKVY scheme (283 LIPs) and Biju KBK scheme (40 LIPs) due to delayed execution of works/ release of funds, etc. The basis adopted for working out BCR were not uniform and in absence of centralised scrutiny at HO level, the viability assessed for the proposed projects under various schemes was not realistic.

Revival of defunct LIPs

Out of 20,895 LIPs installed as of 31 March 2010, 31 per cent (6,444 LIPs) were in-operative/defunct due to various reasons like damage of head works, damage of distribution system, change of river course etc. Against the life of 20 years normally considered for LIP, 3,145 LIPs were defunct within one to 19 years due to improper maintenance which resulted in non-availability of projected benefit of ₹1,090.18 crore. There was no perspective plan for revival of defunct LIPs.

Utilisation of flood grants

Against receipt of ₹21.98 crore for revival of 9,737 LIPs under flood grants,

the Company utilised ₹19.85 crore on revival of 9,222 LIPs as of 31 March 2010. The claims for utilisation of this grant were not supported with the requisite certificate that LIPs had become defunct due to the flood and become operable after revival. Besides, the Company spent ₹1.80 crore for revival of 590 LIPs in 15 districts, those LIPs were defunct prior to the flood and remained defunct even after revival. Such instances cast doubt on such expenditure.

Manpower deployment, Internal control, Monitoring by top Management

The manpower deployment of the Company was disproportionate since the Company deployed 10 to 13 per cent manpower in Kalahandi, Bolangir and Koraput (KBK) districts against the installation of 10 to 60 per cent of total LIPs installed during 2005-10 which had an adverse impact on execution of LIPs in KBK districts. The Company failed to monitor the recovery of advances of ₹1.72 crore pending against 291 ex-employees for three to 10 years. Despite report of the store verification party for discrepancy of ₹18.60 crore including shortage of store valuing ₹5.41 crore as

on 31 March 2009, neither reasons for discrepancies were investigated nor corrective steps were taken to avoid recurrence of the same in future.

Conclusion and Recommendations

Proper planning by the Company could have enabled it for installation of new LIPs as well as revival of defunct LIPs to meet the growing requirement for lift irrigation facility in the State. This review contains seven recommendations to improve the performance of LIPs, i.e. preparation of realistic plan for execution of LIPs, flexibility/adequacy in cost estimates so as to ensure coverage of the designed ayacut under irrigation, simplification of cumbersome procedures of sanction of schemes under BKVY, devising simplified formulae for assessing project viability, ensuring adequate/ effective coordination among the Company, funding agencies and various departments of GoO, strengthening of monitoring mechanism and sensitising the water users through awareness campaign to contribute their share of project cost.

Introduction

2.2.1 Orissa Lift Irrigation Corporation Limited (Company) was incorporated (October 1973) as a wholly owned Government company with the main objective to irrigate, develop ground/ surface water resources and to execute, install, operate, maintain lift irrigation projects²⁶ (LIPs) as well as to collect economic water rates from cultivators for water supplied from the LIPs. Presently, the activities of the Company are confined to only execution of new LIPs and renovation of defunct LIPs under different schemes²⁷. The activities relating to operation and maintenance of LIPs as well as collection of water charges were, however, transferred to the Pani Panchayats²⁸ (PPs) after implementation of the Orissa Pani Panchayat Act, 2002 (PP Act, 2002) with the ownership of LIPs lying with the Company.

2.2.2 Till March 2005, the Company created 3.78 lakh hectares (Ha.) designed ayacut²⁹ by installing 16,996 LIPs. During 2005-10, the Company executed another 3,899 new LIPs with designed irrigation potential of 0.86

²⁶ Tube-wells, direct lift from rivers

²⁷ Backward Region Grant Fund (BRGF), Biju Krushak Vikash Yojana (BKVY), Biju KBK, Hirakud Command Area Development Council (HCADC), Orissa Scheduled Caste and Scheduled Tribe Development Finance Co-operative Corporation (OSFDC) and Western Orissa Development Council (WODC).

²⁸ Water-Users' Associations

²⁹ Area to be irrigated

lakh Ha. Thus, 20,895 new LIPs were installed with 4.64 lakh Ha. designed ayacut as of 31 March 2010, of which 14,982 LIPs with designed ayacut of 3.30 lakh Ha. were handed over to the PPs. Besides, the Company had also revived 6,001 defunct LIPs during 2005-10 so as to stabilise 1.20 lakh Ha. designed ayacut. The Company spent ₹ 298.94 crore on execution of new LIPs and revival of defunct LIPs during 2005-10.

2.2.3 The last Review on the working of the Company was included in the Report of the Comptroller and Auditor General of India for the year ended 31 March 1997 (Commercial), Government of Orissa. The Committee on Public Undertakings (COPU) discussed (July/October 1999) the Report and their recommendations (December 1999) *inter-alia* included that the willingness of the beneficiaries should be confirmed before installation of project, management of fund be strengthened and monitoring be made effective. The Action Taken Report (May 2010) on the recommendations was under discussion by the COPU (September 2010). However, deficiencies *viz.* laxity in monitoring and delayed receipt of funds still persisted, as discussed in the present review.

2.2.4 The Management of the Company is vested in a Board of Directors (BoD) with the Secretary of the Department of Water Resources (DoWR) as the Chairman and the six other Directors, appointed by the Government of Orissa (GoO). The Managing Director is the Chief Executive of the Company who is assisted by Director (Technical), Financial Advisor-cum-Chief Accounts Officer and the Company Secretary to carry out the day-to-day activities of the Company. The Company has four Circle Offices³⁰ and 18 divisions, headed by Superintending Engineers (SEs) and Executive Engineers (EEs) respectively who are responsible for overseeing the execution and utilisation of LIPs in the districts.

Scope of Audit

2.2.5 The present performance audit, conducted during January to June 2010, covers the performance of the Company with respect to the execution of new LIPs and handing over of the same to PPs, revival/renovation of defunct LIPs under different schemes, utilisation of designed irrigation potential and monitoring by the top management for the last five years upto 2009-10. The audit findings are based on test check of records of the Company's Head office at Bhubaneswar and five out of 18 divisions in 13³¹ out of 30 districts. The districts were selected on the basis of execution of number of LIPs (1,583), representing 41 *per cent* of the total LIPs installed/energised during 2005-10.

³⁰ Berhampur, Bhawanipatna, Cuttack and Sambalpur

³¹ Angul, Baragarh, Bolangir, Deogarh, Dhenkanal, Jharsuguda, Kalahandi, Khurda, Nayagarh, Nuapada, Puri, Sambalpur and Sonepur.

Audit Objectives

2.2.6 Performance Audit of the Company was conducted with a view to assess whether:

- the perspective plan, State master plan and annual plans were designed in accordance with the irrigation potential;
- schemes for installation of new LIPs as well as revival of defunct LIPs were executed effectively, efficiently and economically;
- required assistance was rendered to PPs for efficient operation and maintenance of the LIPs;
- the co-ordination among the local/ district authority, GoO and the Company was adequate and effective;
- the fund flow was timely, adequate and funds provided were utilised for intended purposes;
- the deployment of manpower was done effectively and efficiently; and
- monitoring by the top management and internal control was effective and efficient.

Audit criteria

2.2.7 The performance audit with regard to execution of LIPs by the Company was assessed against:

- State master plan and annual plans;
- irrigation policy of the State Government and guidelines of different schemes;
- Orissa Public Works Department Code, Schedule of Rates, detailed estimates and technical sanctions and administrative approval of the projects;
- project appraisal and feasibility reports;
- terms and conditions of the PP Act, 2002 and the Orissa Pani Panchayat Rules, 2003 (PP Rules, 2003); and
- decision of the State Level Screening Committee (SLSC)/High Power Committee (HPC) and instructions issued by the BoD/GoI/GoO.

Audit methodology

2.2.8 The audit methodologies adopted for achieving the audit objectives with reference to audit criteria were:

- review of irrigation policy, State master plan and annual plans;
- scrutiny of records at the Head office, selected districts, circle offices and the Secretariat level;

- examination of schemes with reference to guidelines for scheme formulation;
- study of agenda notes and minutes of the meetings of BoD;
- scrutiny of records relating to project execution, receipt of funds and actual expenditure;
- interviewing the members of PPs in presence of representative of the Company; and
- interaction with the Management and Government and issue of audit queries.

Financial Position and Working Results

Financial Position

2.2.9 The Company finalised its accounts up to 2008-09. Provisional accounts for the year 2009-10 were yet to be prepared (September 2010). The financial position of the Company for last four years ended 2008-09 was as under:

(₹ in crore)

Particulars	2005-06	2006-07	2007-08	2008-09
(A) Liabilities				
a) Paid-up Capital	74.73	74.73	74.73	74.73
b) Reserves & Surplus	193.87	187.99	79.33	72.75
c) Capital Grant-in-aid	11.77	10.66	10.47	9.48
d) Borrowings	2.61	2.26	2.43	2.71
e) Balance of assets over liabilities taken over from GoO	1.09	1.09	0.98	-
f) Trade dues & other current liabilities including provisions	82.07	84.26	68.72	99.32
Total	366.14	360.99	236.66	258.99
(B) Assets				
a) Gross Block	287.90	288.94	288.85	289.55
b) Less: Depreciation	191.87	199.48	205.82	212.62
c) Net block	96.03	89.45	83.03	76.93
d) Capital works-in-progress	110.41	109.37	6.22	1.89
e) Current assets, loans and advances	155.52	158.82	144.47	177.80
f) Accumulated loss	4.18	3.35	2.94	2.37
Total	366.14	360.99	236.66	258.99
Capital Employed	279.90	272.29	163.65	155.66
Net Worth	264.43	259.38	151.12	145.11

It can be seen from the table above that the accumulated loss reduced from ₹ 4.18 crore in 2005-06 to ₹ 2.37 crore in 2008-09 as the Company earned profits continuously during all these years. Further, capital work-in-progress reduced from ₹ 109.37 crore in 2006-07 to ₹ 6.22 crore in 2007-08 and further to ₹ 1.89 crore in 2008-09 mainly due to capitalisation of externally aided LIPs in 2007-08 though same were completed and handed over in 2004-05.

Consequently, the Reserves and Surplus (Capital Reserve) were reduced during 2007-08 and 2008-09.

Working Results

2.2.10 The working results of the Company for the four years ended 2008-09 were as under:

(₹ in crore)

Particulars	2005-06	2006-07	2007-08	2008-09
(A) Income				
Grant-in-aid/ Subsidy	13.86	19.20	22.02	33.75
Supervision and handling income	6.35	6.43	9.48	17.13
Miscellaneous income	10.96	10.25	11.24	14.88
Prior period income	-	0.35	0.05	0.23
Total	31.17	36.23	42.79	65.99
(B) Expenditure				
Operation expenses	4.24	7.06	8.29	13.07
Employees' Cost	16.99	18.89	25.02	42.41
Administration	0.58	0.65	0.73	0.70
Interest	0.20	0.24	0.28	0.28
Depreciation	8.39	7.63	6.89	6.80
Miscellaneous Expenses	0.01	0.04	1.28	1.16
Prior period expenses	0.12	0.89	0.03	1.00
Profit	0.64	0.83	0.40	0.57
Total	31.17	36.23	42.79	65.99

It can be seen from the above table that:

- Operation expenses increased from ₹ 8.29 crore in 2007-08 to ₹ 13.07 crore in 2008-09 mainly due to increase in expenditure towards repair of LIPs damaged due to flood occurred during this year.
- Employees' cost increased from ₹ 18.89 crore in 2006-07 to ₹ 25.02 crore in 2007-08 and further to ₹ 42.41 crore in 2008-09 due to payment of Contributory Provident Fund (CPF) dues (2007-08) as well as implementation of the recommendation of Fifth Pay Commission (2008-09).

Audit Findings

2.2.11. We had explained the audit scope, objectives and methodology to the Company during the 'Entry Conference' held on 18 May 2010. Subsequently, we had reported the audit findings to the Company and the Government in August 2010 and also discussed the same in the 'Exit Conference' held on 13 September 2010 which was attended by the Commissioner-cum-Secretary (Secretary), DoWR of GoO and the Managing Director (MD) of the Company. The Company also partly replied to the audit findings in September 2010. The views expressed and deliberation made by them, have been duly considered while finalising this review. The audit findings are discussed in the subsequent paragraphs.

Planning for execution of LIPs

2.2.12 Orissa is an agrarian State and irrigation plays a major role in poverty alleviation and food security. Out of the total cultivable land of 61.65 lakh Ha. in the State, 14 *per cent* (8.90 lakh Ha.) had lift irrigation potential. However, GoO or the Company had not made any attempt to formulate the perspective plan for development of lift irrigation facility till September 2009 when the Company first time prepared (October 2009) the perspective plan (2009-14) envisaging to install 7,739 LIPs with designed irrigation potential of 1.57 lakh Ha. The perspective plan was, however, never placed before the BoD of the Company for approval.

2.2.13 In view of poor irrigation facility available in large areas of the State, the GoO decided (May 2005) to prepare a State master plan with a view to provide irrigation facilities to 35 *per cent* of the cultivable area of every block during 2005-10. Accordingly, out of 314 blocks, the GoO identified (December 2006) 174 deficit blocks in 29 districts for installing 9,391 LIPs to create 1.82 lakh Ha. lift irrigation potential by the end of 31 March 2010. In the meantime, the Company aimed to install 2,000 LIPs under the annual plans for 2005-06 and 2006-07. Taking cognizance of framing of State master plan, the Company planned to install another 4,500 LIPs during 2007-08 to 2009-10. However, the annual plans formulated by the Company were not evolved after study of area of agriculture land, irrigation potential, availability of water, willingness of beneficiaries so as to prioritise the installation of LIPs in deficit blocks as projected in State master plan. Resultantly, against the requirement of 9,391 LIPs envisaged for installation under the State master plan for 2005-10, the Company planned for installing 6,500 LIPs on ad-hoc basis under various schemes,³² which was only 69 *per cent* of the requirement. The planning of the Company during 2005-10 remained deficient and lacked focus towards achievement of objectives of the State master plan. The Company failed to achieve even these modest targets as the actual achievement was only 3,899 LIPs with a shortfall of 2,601 LIPs.

Against the requirement of installing 9,391 LIPs envisaged under the State master plan during 2005-10, Company planned for installation of 6,500 LIPs

Sources and utilisation of funds

2.2.14 The Company installed new LIPs as well as revived defunct LIPs under different schemes out of funds received from the GoO and other funding agencies in the form of grant. The table below indicates the total funds received vis-à-vis utilised during 2005-10.

(Amount: ₹ in crore)

Year	Opening balance	Funds received against		Total funds available	Funds utilised (<i>per cent</i>)	Unspent balance
		BKVY schemes	Other schemes			
2005-06	28.19	31.50	8.35	68.04	34.43 (51)	33.62
2006-07	33.62	31.31	15.13	80.06	34.23 (43)	45.83

³² BKVY, Biju KBK, WODC, HCAD, OSFDC etc.

Year	Opening balance	Funds received against		Total funds available	Funds utilised (per cent)	Unspent balance
		BKVY schemes	Other schemes			
2007-08	45.83	50.04	12.37	108.24	67.23 (62)	41.01
2008-09	41.01	71.47	18.70	131.18	78.79 (60)	52.40
2009-10	52.40	50.91	22.42	125.73	84.26 (67)	41.46
Total		235.23	76.97	--	298.94	

Scheme funds were invested in term-deposits, while targeted schemes were not implemented as scheduled

It can be seen from the above table that the utilisation of funds improved from 51 *per cent* in 2005-06 to 67 *per cent* in 2009-10. The unspent funds were kept in the short-term deposits and could not be utilised on execution of 323 new LIPs³³ under the targeted schemes during 2005-10, which were pending due to delayed release of funds and delays in execution of works as discussed under **Paragraphs 2.2.19, 2.2.25, 2.2.26 and 2.2.35**. Consequently, objectives for which funds were received could not be achieved. Further, delay of three to 36 months was observed in refund/non-refund of scheme funds remaining unspent against the 67 dropped LIPs (₹ 4.52 crore), as discussed in **Paragraph 2.2.34**. The Company could have utilised ₹ 4.52 crore on other LIPs already sanctioned within the same scheme against which funds were not released with due approval of competent authority. Further, the Company should have remitted the interest earned of ₹ 29.85 lakh to the Government on this fund (₹ 4.52 crore)

Project funding

2.2.15 The Company executed 59 to 95 *per cent* of the LIPs under Biju Krushak Vikash Yojana (BKVY) scheme during 2005-10 and the balance under other schemes sanctioned by the concerned funding agencies/GoO/District Collectors (DCs). Under the BKVY, the Company plays a vital role in formulation and implementation of the project schemes. Normally the LIPs under BKVY scheme were required to be completed within the year of sanction. However, no specific time schedule was prescribed for formulation of schemes, sanction of schemes at different levels and ultimately for release of funds. We observed that on receipt of the project proposals of prospective beneficiaries through GoO (DCs), the Company is required to prepare and submit the estimates for the projects to GoO (DCs) after conducting the necessary technical feasibility study. The project proposals and the estimates so submitted are then considered and approved by the State Level Screening Committee (SLSC) and High Power Committee (HPC) in hierarchy. The approved proposals are finally forwarded to National Bank for Agriculture and Rural Development (NABARD) through the Finance Department (FD) of GoO for financial sanction. As soon as the NABARD approves the project proposals, the GoO (DoWR) is to effect the release of funds thereagainst out of the State budget to the Company through the Chief Engineer, Minor Irrigation (CE) for execution of projects. After expenditure is incurred on execution of the projects, the Company submits Utilisation Certificates (UCs) to GoO, on the basis of which, GoO gets reimbursement of the expenditure so

³³ 283 LIPs under BKVY and 40 LIPs under Biju KBK.

incurred in the form of loans from NABARD against the approved projects. In case of other LIPs, the Company is to execute them after getting approval from concerned funding agencies/DCs.

The cumbersome procedure for sanction and release of funds and lack of coordination caused delay in implementation of LIPs

We observed that starting from receipt of proposals from beneficiaries to release of funds by CE, the funding process took a very long period as detailed in **Paragraphs 2.2.24 and 2.2.25**. The unfeasible requirement for approval of small projects like LIPs by the SLSC (chaired by the Chief Secretary) and HPC (chaired by the Development Commissioner), resulted in holding of less number of meetings of SLSC and HPC which delayed the process of sanction. The funding process is, thus, quite cumbersome and warrants for effective coordination amongst the various concerned agencies and the Company for timely execution of LIPs. However, the desired level of coordination was lacking, which caused delays in completion of LIPs. In the exit conference the Secretary assured (September 2010) to take up the matter of simplification of sanction of LIPs and release of funds at the Government level.

Execution of LIPs

Status of implementation of LIPs

2.2.16 Against the estimated lift irrigation potential of 8.90 lakh Ha., the actual potential created was 4.64 lakh Ha. (52 *per cent*) by installing 20,895 LIPs, as of 31 March 2010 in 30 districts, as detailed in the **Annexure 12**. It can be seen from the Annexure that the coverage of the districts was not equitable since only two to five *per cent* of the total irrigation potential was provided in 12 districts, six to ten *per cent* in 11 districts, 11 to 15 *per cent* in four districts and 16 to 24 *per cent* in the balance three districts. The implementation of the LIPs was lagging behind the requirement as discussed in succeeding paragraphs.

Target vis-à-vis Achievement

The Company failed to achieve the modest target for installation of LIPs during 2005-10 (except 2007-08) by 42 to 54 *per cent*

2.2.17 The Company, without assessing block-wise requirement for installing LIPs, indicated its yearly target in the annual plans to install 6,500 LIPs in the State with anticipated irrigation potential of 1.34 lakh Ha. during 2005-10. It failed to achieve even these modest targets in all the years in terms of number of LIPs installed (except in 2007-08) by 42 to 54 *per cent*, as shown in the following table:

Year	Target		Achievement		Percentage of achievement	
	No. of LIPs	Irrigation potential in Ha.	No. of LIPs	Irrigation potential in Ha.	No. of LIPs	Irrigation potential in Ha.
2005-06	1,000	20,000	561	12,062	56	60
2006-07	1,000	20,000	471	10,127	47	51
2007-08	1,000	20,000	1,014	22,164	101	111
2008-09	2,000	43,598	1,167	26,619	58	62
2009-10	1,500	30,000	686	15,086	46	50
Total	6,500	1,33,598	3,899	86,058	60	61

It can be seen from the table above that 40 *per cent* of the targeted LIPs were not executed during 2005-10 due to various reasons, viz. delays in sanction of

schemes, delays in release of funds, delays in execution of LIPs, lapses in formulation of schemes, etc. as discussed in **Paragraphs 2.2.19 to 2.2.26**. This led to non-creation of designed irrigation potential annually by 38 to 50 *per cent*.

Against requirement of installing 9,391 LIPs in 174 deficit blocks, the Company installed only 1,532 LIPs in 142 blocks due to improper planning and laxity in monitoring over the execution of schemes

2.2.18 As mentioned under **Paragraph 2.2.13** *infra*, GoO identified (December 2006) 174 deficit blocks in 29 districts for installation of 9,391 LIPs during 2005-10. The Company could, however, install only 1,532 LIPs in 142 deficit blocks against the requirement of 8,247 LIPs and could not install any LIP in remaining 32 blocks, which had the requirement of 1,144 LIPs. Moreover, ignoring the priority warranted for deserving deficit blocks, the Company went ahead in installing 2,367 LIPs in non-deficit blocks during 2005-10. This indicated absence of proper planning duly linked with the State master plan and laxity in monitoring over the execution of schemes. In the exit conference the Secretary stated (September 2010) that a provision of ₹ 100 crore had been kept in the budget of 2010-11 for providing irrigation facilities through bore well and check dams in hard rock and coastal areas for which 4,000 bore wells had been earmarked. On verification we found that out of these 4,000 bore wells proposed, the Company planned to execute only 2,299 bore wells in 152 deficit blocks with ayacut of 4,598 Ha. against requirement of 7,859 LIPs with ayacut of 1,57,180 Ha. in 160 deficit blocks. Further, the Company should have properly addressed all possible constraints in providing irrigation facilities to the deficit blocks identified by GoO before formulation of annual plans for 2005-10.

Execution of new LIPs under BKVY

2.2.19 With a view to expand irrigation infrastructure for accelerating the rate of income growth, output and employment in the rural areas, the GoO introduced (2001-02) a scheme namely the Biju Krushak Vikas Yojana (BKVY). Out of 3,083 LIPs sanctioned (2005-10) under BKVY at an estimated cost of ₹ 244.60 crore, 81 *per cent* (2,498) was to be funded by NABARD and the balance 19 *per cent* (585) funded out of the Government of India (GoI) assistance to be extended through GoO under Special Central Assistance (SCA). The funding by NABARD and GoI towards execution of projects was to be provided to the extent of 90³⁴ and 80³⁵ *per cent* of the project cost. The balance 10 and 20 *per cent* of the cost of LIP was required to be contributed by the members of the PPs in the form of land, labour or cash prior to implementation of the project. However, non-receipt of funds from PPs resulted in creation of head works only leaving the distribution channels incomplete as discussed in **Paragraph 2.2.28**. In the case of major, medium and minor (flow) irrigation³⁶ through canals, no such contribution of PPs was, however, prescribed. Of 3,083 sanctioned LIPs, the Company executed 2,800 LIPs at a cost of ₹ 192.95 crore, while implementation of 216 LIPs was in

³⁴ In the case of eight Kalahandi, Bolangir and Koraput (KBK) districts.

³⁵ In the case of balance 22 districts known as non-KBK districts.

³⁶ Major : irrigable command area of more than 10,000 Ha., medium: irrigable command area of 2,000 to 10,000 Ha. and minor (flow): irrigable command area of 40 to 2,000 Ha.

progress and 67 LIPs were dropped as of 31 March 2010. In this connection we noticed the following deficiencies in execution of the scheme by the Company.

Procedural lapses in formulation of schemes and estimates

2.2.20 As per BKVY guidelines, the project proposals of PPs were to be received by the Divisional Officers (DOs) of the Company only through the District Collectors (DCs). The MD of the Company had directed (June 2006) the DOs to forward all the schemes after the technical sanction to the Head Office (HO) for scrutiny. Further, in order to maintain uniformity in preparation of schemes and cost estimates, DOs needed to indicate benefit-cost ratio (BCR)³⁷ of schemes worked out on the basis of the Government notified price for the crops and yield of the crops as estimated by District Agricultural Officers (DAOs), so as to assess the viability of proposed schemes/projects on realistic basis.

Lack of uniformity in formulating the LIPs resulted in delay in funding and execution of schemes

2.2.21 Scrutiny of 748 project proposals out of 1,882 LIPs installed in 18 districts revealed that DOs, in deviation from scheme guidelines and above instructions of MD, directly collected the project proposals from the PPs and after technical sanction of the schemes, prepared by the Junior Engineers and Assistant Engineers, submitted the same to the concerned DCs for onward transmission to the DoWR. The technically sanctioned proposals, in contravention of the directions, were not forwarded to the HO for further scrutiny. The HO also did not pursue the matter with the DOs. As a result, there was lack of uniformity in adopting various modalities/parameters while formulating the schemes/projects, which attracted numerous queries from NABARD at sanction stage. This had caused adverse impact on timely funding and execution of schemes, which could have been avoided by effectively implementing the requirement of centralised scrutiny of the project proposals of DOs at HO level at initial stage.

Defects in working out the benefit cost ratio

2.2.22 Normally, the life span of LIPs should be taken as 20 years, while working out the BCR, which is vital for deciding the viability of the projects before execution. We observed that in absence of centralised scrutiny of the project feasibility reports at HO level, the DOs had considered the said life span between 10 to 30 years at their discretion. Thus, due to Company's failure in conducting centralised scrutiny at HO level, no uniformity was maintained in working out the BCR and assessing the viability of the project proposals on realistic basis.

2.2.23 We further noticed that in all the 748 project proposals test checked, there was no indication of the Government notified price for the crops and the yield of the crops as available from the DAOs, while computing the BCR. The BCR calculations also did not reflect the flow of benefits and costs for the

³⁷ BCR is the ratio of the estimated total annual benefit from Khariff & Rabi crop and total annual recurring expenditure thereagainst. Annual benefit includes benefit accrued on earning from mixed crops while annual expenditure is the aggregate of annual depreciation charges of capital cost, energy charges, maintenance cost and salary of operational staff.

entire life span of the projects nor discounting of benefits and costs was considered. This led to deficient projection of income on sustainable basis. We also observed that collection of district-wise yield of crops from DAOs for working out the BCR is a troublesome and time consuming exercise as cropping pattern is bound to vary from area to area. Thus, computation of BCR on the basis of prescribed formula is complicated exercise and the Company should adopt simplified procedure for assessing viability of the projects. In the exit conference the Secretary stated that in future the guidelines would be followed while computing the BCR to maintain uniformity.

Delay in sanction of schemes

2.2.24 As discussed in **Paragraph 2.2.15**, schemes were to route through different levels of various departments/district authorities/SLSC/ NABARD before sanction. However, no time limit was prescribed in the BKVY scheme for approval of the LIPs at different levels except one month fixed for approval of the schemes by SLSC. Neither the GoO (DoWR) nor the Company maintained the requisite database in regard to the actual time taken in the process of formulation and sanction of projects so as to monitor and check the possibilities of delays at different levels on account of controllable reasons. However, review of 2,588 schemes in 30 districts indicated that 267 schemes were approved by SLSC in eight districts after a slippage of six to 36 months against the prescribed time limit of one month. The abnormal slippage in approval of schemes by SLSC could have been avoided by regular follow-up and monitoring by SLSC through frequent meetings. We noticed that against the minimum prescribed 60 meetings of SLSC required to be held in five years, only four meetings were held during 2005-10. Further, all 2,588 schemes were sanctioned by NABARD after lapse of 13 to 27 months apparently because of absence of effective co-ordination among the NABARD, concerned departments/district authorities and the Company. Besides, we observed that another 304 schemes were pending for sanction by NABARD since October 2008 due to non-submission of requisite information by the Company. The above mentioned delays in sanction of schemes were on account of controllable reasons, which could have been avoided with better co-ordination among various concerned agencies and the Company.

Lack of coordination among various concerned agencies and the Company resulted in delay in sanction of LIPs

Delay in release of funds

2.2.25 After sanction of projects by NABARD, funds were to be sanctioned by GoO (DoWR) with instruction to CE to release the funds to the Company. The DoWR released the sanction orders two to four times per year during 2005-10. We observed that in executing 654 LIPs in 11 test-checked districts, though the DoWR sanctioned funds to the CE for release to the Company at one go, the Company received the funds aggregating ₹ 51.26 crore from the CE after a lapse of 19 to 68 days from the date of release order issued by DoWR. No monitoring was in place by the GoO (DoWR) to fix the reasons for delay in release of funds. The Company also failed to pursue with CE to avoid the delay in release of funds. In the exit conference the Secretary assured (September 2010) to streamline the procedure so as to expedite the process of release of funds.

Delay in execution of LIPs

2.2.26 The DOs of the Company executed the LIPs. However, the BKVY scheme did not indicate any time frame for completion of the LIPs nor did the Company issue any work order on the respective executing DOs to implement the LIPs within a specific time schedule. The Company, while submitting the LIPs for sanction, proposed to complete them within the year of sanction. The HO did not generate any progress reports to assess the extent of delays in execution and take necessary measures for speedy completion. Review of execution of 748 LIPs in 18 districts³⁸ indicated that only six *per cent* of these LIPs (48 LIPs) were completed within 90 days, while the balance 700 LIPs could be executed after an inordinate slippage of six months to more than 24 months³⁹. The reasons for delay as we analysed were mainly attributable to delay in completion of related works by DOs and delay in receipt of technical estimates for electrical work from distribution companies besides irrational deployment of manpower (**Paragraph 2.2.56**) and lack of monitoring (**Paragraphs 2.2.58 to 2.2.60**) etc. We, further, observed that though the Company had a system to periodically supervise the execution, it did not document any inspection reports of the supervising officers with the reported slippages in execution nor did it record the follow up action taken on the reported delays.

The schematic benefit of ₹ 32.38 crore could not be made available to farmers due to delay in execution of LIPs

Delay in execution of LIPs resulted in depriving the farmers availing irrigation for one to five crops with non-creation of irrigation facility for 38,780⁴⁰ Ha. and thereby the schematic benefit of ₹ 32.38⁴¹ crore could not be made available to beneficiaries with non-generation of employment opportunity of 38.78⁴² lakh mandays. In the exit conference the Secretary stated (September 2010) that stage wise progress of works would be maintained in proper format.

Delay in receipt of electrical estimates

2.2.27 The electrical estimate for works is an integral part of the project cost and is utilised in formulating the project schemes. The electrical estimates for the proposed schemes are considered based on the estimates submitted by power distribution companies. We observed that 129 electrical estimates were received from one distribution company (WESCO) after delay of one year which resulted in delay in submission of estimates for approval of the GoO. The Company failed to effectively pursue the matter with WESCO for prompt submission of the estimates which ultimately caused delay in execution of the projects. In the exit conference the Secretary stated (September 2010) that the

³⁸ Balasore, Baragarh, Bolangir, Cuttack, Deogarh, Gajapati, Ganjam, Jajpur, Kalahandi, Kendrapara, Keonjhar, Koraput, Malkanagiri, Mayurbhanj, Nawarangpur, Nuapada, Sonepur and Sundargarh.

³⁹ 166 LIPs (six months), 192 LIPs (one year), 75 LIPs (one and half years), 171 LIPs (two years) and 96 LIPs (more than two years).

⁴⁰ $(166 \times 20) + (192 \times 40) + (75 \times 60) + (171 \times 80) + (96 \times 100)$ @ 20 hec. per crop per LIP and two crops per year.

⁴¹ $[(166 \times 0.5 \text{ year}) + (192 \times 1 \text{ year}) + (75 \times 1.5 \text{ years}) + (171 \times 2 \text{ years}) + (96 \times 2.5 \text{ years})] \times ₹ 3.34$ lakh (minimum annual net benefit per LIP)

⁴² 4000 (mandays per LIP per year) $\times [(166 \times 0.5 \text{ year}) + (192 \times 1 \text{ year}) + (75 \times 1.5 \text{ years}) + (171 \times 2 \text{ years}) + (96 \times 2.5 \text{ years})]$

matter would be pursued at the MD level with the electrical companies to avoid the delay.

Non-completion of distribution channels

2.2.28 As mentioned in **Paragraph 2.2.19**, PPs were to contribute 10 and 20 *per cent* of the project cost in respect of KBK districts and non-KBK districts respectively before completion of the implementation of the project in the form of labour, land, material or cash. The execution of the main project was funded through NABARD share, while the field/distribution channels were to be taken up with the PPs' funds. We observed that though at the time of initiation of schemes the PPs agreed to pay their contribution, they did not pay ₹ 53.38 crore towards their contribution of the project cost of 3,359 schemes (3,083 new schemes and 276 revival schemes) under BKVY during 2005-10. As the projects were required to be executed within the project costs approved under the schemes, non-realisation of PPs share resulted in non-construction of 17.91 lakh metres distribution channel with shortfall in creation of designed irrigation potential of 35,825 Ha. In absence of the required length of distribution channel, the earthen channels were constructed for distribution of water which were subjected to severe water loss on account of evaporation, seepage, etc.

Due to non-realisation of PPs' share, 17.91 lakh metres distribution channel could not be constructed resulting in non-creation of irrigation potential of 35,825 Ha.

In order to motivate the PPs for contributing their committed share of project costs, SLSC in its meeting (October 2007) decided to utilise the services of Non-Government Organisations /Voluntary Organisations. But no effort was made to implement the decision. After lapse of one year, the SLSC decided in its meeting (October 2008) to complete the distribution network with dovetailing funds under National Rural Employment Guarantee Scheme (NREGS). Again the Company did not take any action in this direction. Thus, there was lack of serious efforts on the part of GoO and the Company in motivating the PPs to get their agreed share of contribution.

In the exit conference the Secretary stated (September 2010) that the waiver of contribution from PPs was under active consideration of the GoO and the proposal had been initiated by the DoWR for providing distribution channel under Rastriya Krishi Vikas Yojana (RKVY).

Non-creation of designed ayacut

2.2.29 The approved cost estimates indicated the designed irrigation potential as 20 Ha. per LIP on an average. However, the Company failed to create designed ayacut to the full extent due to several reasons viz. non-revision of cost estimates, excess laying of delivery pipes, installation of higher capacity transformer than the requirement, etc. as discussed in succeeding paragraphs.

Reduction in the scope of schemes due to inflexible/inadequate cost estimates

2.2.30 The DOs were responsible for laying of pipelines for delivery channels and distribution channels within the approved cost estimates. The estimated cost per Ha. was enhanced (February 2007) from ₹ 35,000 to ₹ 50,000 on the

Reduction of length of distribution channels to keep the cost of LIPs within estimate led to shortfall in designed ayacut of 775 Ha. in 237 LIPs in six districts

recommendation (November 2006) of the Technical Committee of GoO. The revised cost structure included provision for laying of PVC pipe of 500 metres and 1,000 metres per LIP for delivery channel and distribution channel respectively irrespective of the location of LIPs. As a result where, in execution of LIPs, laying of more than 500 metres of delivery pipes was essential owing to adverse site conditions, the DOs had to reduce the length of distribution pipes proportionately so as to keep the cost of the LIPs within the estimate. Review of revised cost structure of 367 LIPs in six test-checked districts indicated that in executing 237 LIPs, 38,760 metres PVC pipes valuing ₹ 1.16 crore were laid in excess of the estimates for delivery channel on account of these reasons. This had ultimately caused shortfall in creation of designed ayacut to the extent of 775 Ha. in 237 LIPs.

Reduction in the length of distribution pipes due to non-revision of cost estimates

Failure of the Company to revise the cost estimates led to non-receipt of funds of ₹ 32.49 crore with resultant reduction of irrigation potential by 9,813 Ha.

2.2.31 The Company failed to revise the cost estimates from ₹ 35,000 to ₹ 50,000 per Ha. and send the same to NABARD for approval in case of 1,083 out of 2,148 LIPs, sanctioned by GoO (DoWR) after March 2007. Failure of the Company to submit schemes at the revised estimated cost to DoWR for onward submission to NABARD resulted in non-receipt of funds amounting to ₹ 32.49 crore. Consequently, the laying of distribution channel had to be reduced in order to execute these LIPs within the cost ceiling of ₹ 35,000 per Ha. which in turn resulted in reduction of designed irrigation potential by 9,813 Ha.

Reduction in the designed length of delivery/distribution pipes due to cost overrun

Distribution channels in 99 LIPs could not be laid due to cost overrun leading to shortfall in designed irrigation potential of 3,661 Ha.

2.2.32 The approved cost estimates did not contain any provision towards cost escalation. Though the cost overrun was involved due to slippages in sanction of schemes at different levels (**Paragraph 2.2.24**) these schemes had to be executed within the approved cost estimates by way of forced reduction in the estimated requirement of laying delivery pipes and distribution channels. We observed that due to delay in sanction of 237 LIPs during 2005-07, against the target of laying 1.73 lakh metres of delivery pipes, 1.64 lakh metres delivery pipes were actually laid for 237 LIPs. Further, against 0.77 lakh metres of distribution channels targeted for 237 LIPs, only 0.24 lakh metres of distribution channels could be laid for 138 LIPs, while no distribution channel was laid for remaining 99 LIPs. This had adversely affected the supply of water to the delivery tank, at the highest point of the ayacut, for providing irrigation facility upto the tail end of the ayacut with shortfall in designed irrigation potential of 3,661 Ha. The Company needs to insert a suitable cost escalation clause in the estimates to counter the impact of time overrun in sanction and execution of LIPs.

Reduction in the designed irrigation potential due to extra expenditure on electrical work

Decrease in designed irrigation potential by 2,962 Ha. was due to installation of higher specification transformers at an extra cost of ₹ 4.36 crore

2.2.33 The estimates for electrical works for the schemes were prepared by four power distribution companies⁴³ and thereafter included in the overall cost estimates of the schemes. To meet the power requirement of 10 HP pump sets used in LIP, installation of 25 KVA transformers was sufficient. We observed that WESCO submitted estimates for installation of 63 KVA transformers for 10 HP pump sets, while other three distribution companies prepared estimates with 25 KVA transformers. Though WESCO was instructed in the review meetings (September 2005/ November 2006) to revise the estimates in lines with other power distribution companies, it did not act upon the direction. The Company also did not pursue the matter with WESCO. Consequently, 875 out of 1,056 LIPs were energised in eight test-checked districts during 2005-10 with 63 KVA transformers instead of 25 KVA, thereby entailing an extra expenditure of ₹ 4.36 crore. To meet this extra burden the Company had to reduce the distribution pipes by 1.46 lakh metres with consequential decrease of designed irrigation potential of 2,962 Ha. In the exit conference the Secretary stated (September 2010) that the Company would take up the matter with the Orissa Electricity Regulatory Commission and distribution companies for providing 25 KVA transformers only by the distribution companies.

Dropping of sanctioned LIPs

2.2.34 During 2005-10 the Company dropped 67 sanctioned (₹ 4.52 crore) LIPs with designed irrigation potential of 1,340 Ha. in 13 test-checked districts due to absence of electrical infrastructure (28), non-availability of adequate strata/aquifer (12), covering of schemes under other different funding agencies (10), ayacut covered under flow irrigation/industrialisation (3) and for other reasons (14). The Company should have taken prompt action for obtaining the approval of the competent authority for utilisation of this fund of ₹ 4.52 crore for execution of other sanctioned LIPs.

Execution of the projects under Biju KBK scheme

2.2.35 With a view to strengthening the economic condition of eight⁴⁴ backward districts, known as KBK districts, the GoO launched (September 2006) Biju KBK plan for implementation over a period of five years from the year 2007-08 to 2011-12. Under the scheme the plan for implementation of LIPs was to be finalised by the District Collectors (DCs). Based on the proposals received from DCs, the Planning and Co-ordination Department of GoO was to prepare the budget provision for the funds required for implementation of the LIPs. The funds were then to be released to the Company through DCs for execution of the LIPs.

⁴³ Central Electricity Supply Utility (CESU), Southern Electricity Supply Company of Orissa Limited (SOUTHCO), Northern Electricity Supply Company of Orissa Limited (NESCO) and Western Electricity Supply Company of Orissa Limited (WESCO).

⁴⁴ Bolangir, Kalahandi, Koraput, Malkanagiri, Nabarangpur, Nuapada, Rayagada and Sonepur

Despite receipt (2009-10) of ₹ 3.29 crore for installation of 40 LIPs, the Company did not execute any project

We observed that the Company did not prepare five year perspective plan which was essential as per the guidelines of the scheme. During 2007-10, the Company received ₹ 8.29 crore for execution of 78 LIPs⁴⁵, revival of 67 LIPs and construction of distribution system in 21 LIPs⁴⁶. Against this, though the Company revived all 67 LIPs, it could execute only 37 LIPs and could complete distribution system in eight LIPs only at a cost of ₹ 4.58 crore. Further, despite receipt of ₹ 3.29 crore for installation of 40 LIPs and 13 distribution systems during 2009-10, the Company did not execute any project till date for reasons not on record, thereby defeating the objective for which the funds were provided. Consequently, irrigation potential of 800 Ha. against these 40 LIPs could not be provided to the farmers. The Management stated (September 2010) that LIPs could not be installed as funds were received in February and March 2010 and the work would be completed after the harvest of Khariff crop in October 2010. The reply is not justified as the pending projects could have been completed by the Company before start of the Khariff season between March-June 2010.

Defunct LIPs

2.2.36 On completion/execution of the LIPs by the Company, same were handed over to PPs for operations. While ownership of the LIPs handed over rests with the Company, the PPs were responsible for maintenance of these LIPs. In respect of LIPs not handed over to PPs, the Company was responsible to maintain those.

The Company normally considers the life of LIP as 20 years. During the course of operation, the LIPs became defunct due to various reasons viz. damage of head works, damage of distribution system, change of river course, ayacut covered under flow irrigation, theft of electrical conductors and transformers, low voltage etc. The Company was responsible to revive the inoperable LIPs by rectifying the defects occurred in LIPs within reasonable time. However, the Company had not identified the district-wise defunct LIPs till June 2009 when the consolidated list of defunct LIPs was generated. We observed that out of 20,895 LIPs installed as of 31 March 2010, 31 per cent of LIPs (6,444) were inoperative/ defunct as detailed below:

Year	Total LIPs installed		Defunct LIPs with PPs		Defunct LIPs with Company not handed over to PPs		Total defunct LIPs		Percentage	
	No	Ayacut (in lakh hectare)	No	Ayacut (in lakh hectare)	No	Ayacut (in lakh hectare)	No	Ayacut (in lakh hectare)	Defunct LIPs to total LIPs	Uncovered Ayacut to total Ayacut
2005-06	17,557	3.90	2,050	0.50	6,551	1.46	8,601	1.96	49	50
2006-07	18,028	4.01	2,422	0.58	6,567	1.47	8,989	2.05	50	51
2007-08	19,042	4.23	1,719	0.41	5,840	1.29	7,559	1.70	40	40
2008-09	20,209	4.49	2,350	0.59	5,509	1.21	7,859	1.80	39	40
2009-10	20,895	4.64	966	0.27	5,478	1.23	6,444	1.50	31	32

⁴⁵ 2007-08: 9 LIPs, 2008-09: 29 LIPs and 2009-10: 40 LIPs

⁴⁶ 2007-08: 2 LIPs, 2008-09: 6 LIPs and 2009-10: 13 LIPs

We observed the following:

Absence of maintenance programme by PPs for LIPs

Non-deposit of ₹ 2.97 crore by PPs towards up-front fee adversely affected the maintenance of LIPs

2.2.37 The PPs were responsible for operation and maintenance of LIPs. As per the PP Act, 2002, the Company was to render technical assistance to the PPs for operation and maintenance of LIPs. However, it did not maintain any record in regard to number of PPs to whom such assistance was rendered. The PPs also did not make any yearly programme for maintenance of LIPs mainly due to non-availability of funds. Further, as per decision (October 2008) of 12th SLSC, the PPs were required to create their own funds by depositing five per cent of the project cost towards upfront fees for future maintenance of LIPs. Non-deposit of up-front fees aggregating ₹ 2.97 crore by PPs towards upfront fee had adversely affected the maintenance activity leading to premature damages of LIPs. The Management stated (September 2010) that due to low paying capacity of the farmers, it was not properly planned by the PPs for making long term maintenance programme. The fact remained that on one hand water rate was not collected by the Company/GoO, while on the other hand it was burdened with maintenance of the projects. Hence, the purpose of handing over of LIPs to PPs for maintenance was defeated.

Premature failure of LIPs due to improper maintenance

Failure to take prompt action for revival of prematurely failed LIPs resulted in non-achievement of projected benefit of ₹ 1,090.18 crore

2.2.38 In 22 out of 30 districts 3,145 (Company:1,752 and PPs:1,393) LIPs became defunct before 20 years considered to be normal life of LIPs by the Company. The prematurely defunct 3,145 LIPs included 189 LIPs, which became defunct within one year, 724 LIPs between two to five years, 1,772 LIPs between six to 15 years and 460 LIPs between 16 to 19 years of their installation respectively indicating absence of proper maintenance by the Company as well as by the PPs. The incidence of premature failure of LIPs could occur due to unavoidable reasons, e.g. theft of electrical appliances and materials, change in the river course after high flood, etc. The Company, however, failed to analyse the reasons for high incidence of premature failure of LIPs and take prompt action for revival of the same particularly considering the fact that restoration of irrigation potential through revival of defunct LIPs is always economical and time saving than installation of new LIPs. Resultantly, projected benefit of ₹ 1,090.18 crore did not accrue to the farmers (at the rate of ₹ 3.34 lakh per annum per LIP as per BCR). The Management stated (September 2010) that the DOs had been instructed to watch the defunct LIPs and to submit the monthly progress reports on defunct LIPs for monitoring at the HO level.

The performance of the Company for revival of defunct LIPs is discussed in the succeeding paragraphs.

Revival of defunct LIPs

2.2.39 The objective of the revival of defunct LIPs is to stabilise the designed irrigation potential created in the past. Despite having large number of defunct LIPs, the Company did not prepare any long-term plan for revival of the LIPs in phased manner, which would prove to be economical and less time

consuming exercise than installation of new LIPs. The 11th Five Year Plan also emphasised on the need of restoring the inoperable LIPs on priority basis to minimise the gap between the irrigation potential created and utilised. The table below indicates the year-wise status of defunct LIPs and revival thereof.

Year	Defunct LIPs in the beginning of the year	Defunct during the year	Total defunct	Revived during the year	Defunct at the end of the year	Percentage of revival to total defunct
2005-06	8,313	544	8,857	256	8,601	3
2006-07	8,601	1,685	10,286	1,297	8,989	13
2007-08	8,989	74	9,063	1,504	7,559	17
2008-09	7,559	1,610	9,169	1,310	7,859	14
2009-10	7,859	219	8,078	1,634	6,444	20
Total		4,132		6,001		

It can be seen from the above table that the percentage of revival to total defunct LIPs was meagre ranging from three to 20 during 2005-10 which indicated absence of concerted efforts in this direction on part of the Company by way of formulating the revival schemes for approval by GoO/NABARD. Further, high incidence of failure of LIPs could be noticed during 2006-07 and 2008-09, which was due to damage of LIPs in floods occurred during 2007/2008. During 2005-10, the Company spent total amount of ₹ 25.56 crore for revival of 9,964 defunct LIPs out of the flood grant (₹ 21.98 crore) and one time assistance grant (₹ 3.58 crore) as discussed under **paragraphs 2.2.42** and **2.2.46** *infra*. As against this, the Company could actually revive 6001 defunct LIPs only during the said period. This shortfall in revival of defunct LIPs was indicative of ineffective utilisation of funds, which ultimately defeated the objective of the grants. The Management stated (September 2010) that main constraint in revival of defunct LIPs was non-availability of funds. It was also stated that all DOs were instructed to prepare schemes for revival of defunct LIPs. The reply was, however, silent on Management's failure to evolve schemes for revival of defunct LIPs for approval by the GoO as per the actual requirement.

Percentage of revived LIPs to total defunct LIPs was insignificant

Inaction towards revival of defunct LIPs

2.2.40 The activities relating to operation and maintenance of LIPs and collection of water charges were transferred from the Company to PPs after notification of the PP Act, 2002 with ownership of LIPs lying with the Company. The PP Rules, 2003 were also framed in 2003. As per the PP Act, the Company should handover LIPs to PPs in operable condition or to rectify inoperable LIPs and make them operable in reasonable time. We observed that the Company had handed over total 141 LIPs in seven districts test checked to PPs in defunct condition after enactment of the PP Act in 2002 contrary to the Act. None of these defunct projects was rectified by the Company so far for no reasons on record (September 2010). The Management stated (September 2010) that the defunct LIPs could not be revived due to non-release of funds by the GoO and the work would be taken up after receipt of next allotment from the GoO. The contention of the Management is not genuine since even after lapse of seven years it failed to chalk out any plan/scheme for revival of these defunct LIPs for sanction by the GoO. In the exit conference the

Secretary stated (September 2010) that a detailed survey of 141 LIPs would be prepared by the Company and revival would be undertaken after ascertaining the amount required for the work.

LIPs became defunct due to non-maintenance

2.2.41 The Company executed 25 LIPs at a cost of ₹ 1.40 crore during 2003-09 in 10 districts, but were not handed over to PPs for reasons not on record. Subsequently, those LIPs became defunct in absence of proper maintenance and upkeep rendering the expenditure of ₹ 1.40 crore incurred thereon unfruitful.

Improper utilisation of flood grant

2.2.42 The Company received ₹ 21.98⁴⁷ crore from the Special Relief Commissioner (SRC) of GoO during 2005-09 under flood grant for revival of flood damaged 9,737 LIPs. The revival package included 1,982 LIPs exclusively to be revived by PPs (₹ 1.98 crore), 5,358 LIPs exclusively by the Company (₹ 10.98 crore) and 2,397 LIPs jointly by the Company (₹ 6.62 crore) and PPs (₹ 2.40 crore). As per the sanction orders, the Company was to submit the certificate to GoO (DoWR) to the effect that (i) the damage to the LIPs was caused only due to flood and the same were in operable condition prior to flood, and (ii) LIPs after repair were ready for operation during respective Rabi season. The deficiencies in utilisation of flood grants are discussed in succeeding paragraphs.

Claims without complete documentation

2.2.43 Though it was mandatory as per the sanction orders, the Company did not furnish the requisite certificate to GoO (DoWR) to the effect that 9,222 LIPs, damaged due to flood in the respective year were operable prior to the floods and became operable after their revival under the scheme. Hence the claims of ₹ 19.85 crore of the Company relating to revival of 9,222 LIPs were not in lines with the requirements of the scheme. Following further observations are made in this regard.

2.2.44 The DOs released ₹ 4.38 crore to 4,379 PPs during 2008-09 by way of issuing account payee cheques of ₹ 10,000 each for restoration of 4,379 LIPs. The Company did not specify the work modalities to be adopted for revival of LIPs jointly nor did it impress upon PPs to maintain records for amount to be incurred. In the absence of specific direction, the PPs neither submitted the details of expenditure nor did they maintain proper records in support of the expenditure of ₹ 4.38 crore. The Company, however, submitted the Utilisation Certificates (UCs) for the expenditure incurred by PPs to GoO without ensuring actual utilisation of grants for intended purpose. The Management stated (September 2010) that cheques of ₹ 10,000 each were issued to PPs for procurement of petty electrical and pipe fitting materials as well as for labour charges for reinstallation of LIPs. The reply was, however, silent on non-

Amount of ₹ 4.38 crore was certified to have been spent by PPs for restoration of 4,379 LIPs without proper documentation of expenditure

⁴⁷ 2005-06: 275 LIPs ₹ 45.00 lakh, 2006-07: 4511 LIPs ₹ 8.33 crore, 2007-08: 548 LIPs ₹ 2 crore and 2008-09: 4403 LIPs ₹ 11.20 crore.

documentation of complete information in support of expenditure on above accounts before submission of UCs. In the exit conference the Secretary stated (September 2010) that the decision to provide grant of ₹ 10,000 to each PP in respect of LIPs damaged due to flood should have been taken after framing guidelines for incurring expenditure.

Claims not fulfilling grant objectives

Despite expenditure of ₹ 1.80 crore for repair of 590 LIPs those remained inoperative

2.2.45 In contravention to provision of flood grant, the Company had claimed expenditure of ₹ 1.80 crore in respect of 590 LIPs (15 districts) which were actually lying defunct prior to occurrence of flood in 2007/2008 and remained non-operational even after the repair. Reasons for the LIPs remaining inoperable even after the repairs were not analysed and documented. Such instances cast doubt on the amount of expenditure incurred and claimed by the Company.

Revival of LIPs under one time assistance grant

2.2.46 The Company received (March 2007/March 2008) one time grants-in-aid assistance of ₹ 3.58 crore from State Government for revival of 227 defunct LIPs in 17 districts. The revival plans were to be prepared by the Company in consultation with PPs and implementation was to be carried out by PPs.

We observed that out of the above grant (₹ 3.58 crore), ₹ 27.80 lakh received (March 2008) for revival of five defunct LIPs in two districts remained unutilised with the Company (August 2010) for no reasons on record. This caused non-stabilisation of irrigation potential of 850 hec for four crop seasons besides defeating the objective of the Government grant.

Delay in handing over of operable LIPs to PPs

Delay in handing over of 435 operable LIPs to PPs deprived irrigation facility for 11,384 Ha. with resultant loss of benefit for ₹ 72.65 crore

2.2.47 As per the provisions of the PP Act, 2002, the LIPs executed/revived are required to be handed over to PPs immediately after energisation/revival for their operation. However, the Company had not fixed any time frame for handing over of the newly installed/revived LIPs to the PPs. We noticed that the number of operable LIPs not handed over to PPs was 1,424 as of March 2005. During the five years ending March 2010 there was no addition of newly installed LIPs awaiting handing over. However, the number of 1,424 LIPs was reduced to 435 as of March 2010 which were under operable conditions (March 2010). Despite completion of 435 LIPs the Company neither utilised these LIPs nor did it hand over these LIPs to PPs for utilisation. Hence, these LIPs could not be operated depriving the beneficiaries of getting irrigation facility for 11,384 Ha. with resultant loss of benefit to the PPs amounting to ₹ 72.65⁴⁸ crore for 10 crop seasons during the period 2005-10.

⁴⁸ 435 X 5yrs X ₹ 3.34 lakh (minimum net benefit per LIP per year)

Utilisation of created ayacut

2.2.48. The effectiveness of LIPs largely depends upon utilisation of created irrigation potential during Khariff and Rabi programme. The PPs were responsible to maintain the data in regard to LIP-wise utilisation of designed ayacut. In the absence of such data from the PPs the Company personnel prepared the report 'relying on their personal sources as there were no regular staff to ascertain the actual status of each project regularly'. Thus, the reliability of the data reported to the GoO without relevant details cannot be vouchsafed.

Based on the information made available to us, the details of the designed, programmed vis-à-vis actual ayacut covered under Khariff and Rabi crops for last five years ending 31 March 2010 were given below:

Year	Designed/ created ⁴⁹ Ayacut		Programmed ⁵⁰ Ayacut		Utilised ⁵¹		Percentage of utilisation to designed ayacut	
	(in lakh hectares)						Khariff	Rabi
	Khariff	Rabi	Khariff	Rabi	Khariff	Rabi		
2005-06	3.90	2.34	NA	1.01	0.76	1.00	19	43
2006-07	4.01	2.41	NA	1.10	0.36	1.11	09	46
2007-08	4.23	2.54	1.47	1.54	0.86	1.42	20	56
2008-09	4.49	2.69	1.90	2.11	1.46	1.96	32	73
2009-10	4.64	2.79	2.19	2.74	1.49	2.28	32	82

It can be seen from the table above that the percentage of utilisation of the irrigated area to designed irrigation potential increased from 19 to 32 (Khariff) and from 43 to 82 (Rabi) during 2005-10. Though the actual utilisation of ayacut showed an increasing trend (except for khariff season during 2006-07), it was still short to a significant extent with reference to the designed ayacut, particularly during 'Khariff crops'. The utilisation of designed ayacut below the desired level on account of various reasons as discussed in the review are:

- Absence of long term plans for restoration of defunct LIPs (**Paragraph 2.2.39**).
- Inflexibility and inadequacy of the prescribed cost estimates for LIPs (**Paragraphs 2.2.29 to 2.2.33**).
- Non-recovery of PPs contribution towards project costs (**Paragraph 2.2.28**).
- Absence of proper monitoring system for prompt identification of non-operable LIPs and their revival (**Paragraphs 2.2.36 and 2.2.38**)

⁴⁹ Total area under the LIP identified for irrigation

⁵⁰ Crop wise area identified for irrigation out of total created area

⁵¹ Area actually irrigated crop wise

Functioning of Pani Panchayats

2.2.49 The PP Act, 2002 and the PP Rules, 2003 were formulated by GoO for operation and maintenance of LIPs by the PPs. The PPs were managed by the executive bodies (President, Secretary, Treasurer and Executive members) elected by the members of PPs in the election process completed by the Company. However, against handing over of 14,982 LIPs to the PPs, the Company could conduct election is 13,272 LIPs as of March 2010.

The main functions of PPs included the following:

- to prepare a cropping programme suitable for the soil and agro-climate condition;
- to levy and collect water rates for covering energy charges, maintenance and repair expenditure relating to LIPs utilised by the members of PPs; and
- to maintain all essential records like cash book, receipt book, register of land holders, minute books to record the proceedings of the meeting of the General Body and Executive Body etc.

Review of the records of 127 LIPs in 13 test-checked districts revealed the following:

Non-maintenance of records

2.2.50 Cash book, receipt books, register of land holders and minute books were not maintained in proper form. There is no evidence on record to indicate that the officers of the Company inspected books of accounts periodically, as required under the PP Act, 2002. The Management stated (September 2010) that the DOs were being instructed to educate the PP office bearers for proper maintenance of requisite records.

Non-fixation of water rate

2.2.51 As per the PP Act, 2002, the PPs had to decide upon the amount of water charges to be collected. These charges should include all the costs for operation and maintenance including salary of pump operator, energy charges, administrative expenses and other expenses, if any. However, the PPs fixed the water charges on ad-hoc basis without considering related expenditure as per the PP Act, 2002. This led to inadequate generation of funds for maintenance of LIPs resulting in high incidence of damages to LIPs.

Non-safeguard of assets

2.2.52 As per the BKVY guidelines, the PPs were required to obtain adequate insurance coverage for the equipment installed in the LIPs handed over to them against the risk of damages due to natural calamities. We observed that despite these guidelines, no insurance cover was ever obtained by any of the PPs for the equipment of the LIPs handed over to them. The Management stated (September 2010) that the PPs would be advised to insure the LIPs.

Material lying unused in abandoned projects

2.2.53 The DOs of the Company had identified and proposed total 1,147 defunct projects for abandoning as their revival was not feasible considering high repair costs. The Company, however, did not place the proposal of DOs before the BoD for approval. In absence of BoD's approval for abandonment of these defunct LIPs, the material lying unutilised in these LIPs could not be retrieved for its gainful utilisation in other LIPs (June 2010). The Management stated (September 2010) that the procedure to retrieve material from completely defunct LIPs would be considered where it would be economical. The fact remained that despite materials worth ₹ 17.10 lakh identified as retrievable from 393 abandoned LIPs, no action was taken to get BoD's approval for abandoning these LIPs and retrieve the unutilised materials (September 2010).

Manpower

2.2.54 Consequent upon the decision (September 2002) of the State Cabinet on restructuring of the Company, GoO (DoWR) directed (October 2002) the Company to downsize the number of employees from 9,605 to 2,264 by dispensing with 7,341 employees. Subsequently, the sanctioned strength of 2,264 was reduced (March 2005) to 2,069⁵² due to abolition of 195 posts. Against the sanctioned strength of 2,069, the Company had 1,669⁵³ employees as of March 2010 with 400 posts lying vacant in different cadres. The vacancy was predominant in technical cadre as only 59 *per cent* of sanctioned strength for technical staff (437 posts) was manned.

We observed the following:

2.2.55 The Company did not devise a policy for deployment of manpower in the divisions on the basis of work load as per annual plan. Even after eight years of restructuring of manpower, the Company had not determined the category wise sanctioned strength of the divisions depending on the LIPs to be executed by the divisions.

2.2.56 In absence of a firm policy on deployment of manpower, instances of disproportionate deployment of manpower were noticed, which had adverse impact on execution of the LIPs. In eight KBK districts the deployment of staff ranged between 10 and 13 *per cent* while the installation of LIPs in these districts ranged between 10 and 60 *per cent* of the total LIPs installed during 2005-10. Consequently, balance 87 to 90 *per cent* of manpower was deployed for installing the LIPs relating to 40 to 90 *per cent* of total LIPs installed during 2005-10.

2.2.57 As per the decision taken (February 2010) by the Company, the work relating to execution of LIPs shall be outsourced through award of contracts on turnkey basis. In view of this decision, the Company would not be required to deploy the manpower on execution of the LIPs except for monitoring

Disproportionate deployment of manpower adversely affected the execution of LIPs in KBK districts

⁵² Technical: 735 and Non-technical :1,334

⁵³ Technical: 437 and Non-technical :1,232

related activities. The Company, therefore, needed to deploy available manpower appropriately in its divisions for the gainful utilisation of human resources on monitoring related activities so as to ensure completion of LIPs within the specified time schedule. The Management stated (September 2010) that a committee was being framed to finalise the sanctioned strength.

Monitoring

2.2.58 To execute LIPs economically and efficiently, an effective monitoring is essential. BKVY and Biju KBK guidelines provided that there should be a monitoring committee of GoO each at the District and State level to review the progress quarterly as well as to conduct field inspection of LIPs. However, no such committees were formed.

Monitoring on physical and financial performance of LIPs at the BoD level was non-existent

2.2.59 The Company did not devise a project management information system to report on work under execution, periods of delay and comparative data of physical and financial achievement so as to take timely remedial action. The BoD never reviewed the physical and financial performance of LIPs during the last five years ending 31 March 2010. The perspective plan (2009-14) and annual plans came into operation without the approval of the BoD. The MD directed (June 2006) that review meetings by Superintending Engineers (SEs) monthly with Executive Engineers (EEs) at the circle level, bi-monthly by the MD with SEs and quarterly by the MD with all SEs and EEs at the HO level should be held. However, the details of meetings held at the circle and HO level were not available for verification. The proceedings of the meetings held were also not documented.

Project completion reports were submitted after delay of 12 to 36 months

2.2.60 The Company was required to submit the Project Completion Reports (PCRs) to NABARD within one month from the date of completion of LIPs. But PCRs were submitted after delay of 12 to 36 months in respect of 1,575 completed LIPs, while the same for another 929 LIPs were still pending (June 2010) due to belated receipt of PCRs from DOs. Thus, the monitoring of execution of LIPs was ineffective at all levels which adversely affected the completion of LIPs in time. In the exit conference the Secretary stated (September 2010) that necessary steps would be taken for proper monitoring of the execution of LIPs at different level.

Social Audit

2.2.61 As per the the provisions of the PP Rules, 2003 there should be a general body meeting of the PPs at the end of each cropping season, where the members of the executive body were to render the accounts of the utilisation of funds along with the works executed and estimates there for. Further, the SLSC in its meeting (October 2008) decided to conduct a social audit on a pilot basis to ascertain the actual utilisation of the projects by the PPs after their energisation and handing over. We observed that the Company/GoO neither had ensured convening of general body meetings of the PPs nor any action taken so far (August 2010) for conducting social audit in pursuance to the direction of the SLSC. The Management stated (September 2010) that on receipt of the necessary guidelines from the GoO steps would be taken for

conducting social audit. The fact, however, remained that the Company did not pursue with the GoO to devise necessary guidelines so far.

Internal Control

2.2.62 Internal control system is an essential part of the managerial control system. An efficient and effective internal control system helps the management to achieve the organisational objectives efficiently and effectively. The following deficiencies were noticed in the internal control system being followed by the Company:

2.2.63 The Company did not adjust regularly the Miscellaneous Public Works Advances pending against employees of the Company. As on 31 March 2010, ₹ 1.72 crore was pending for recovery from 291 ex-employees of three divisions for a period ranging from three to ten years. As the dues were old and the Company did not monitor to recover the same from the ex-employees before their transfer/ retirement, the chances of recovery of these dues were remote. While accepting the fact the Management stated (September 2010) that in some cases action had been initiated to institute money suit cases against delinquent employees.

The Company failed to reconcile the discrepancies in stores material valued at ₹ 18.60 crore including shortages of ₹ 5.40 crore

2.2.64 The Store Verification Parties (SVPs) of the Company reported discrepancies of ₹ 13.59 crore as on March 2004 which increased to ₹ 18.60 crore as on 31 March 2009 including shortages of stores valued at ₹ 5.40 crore. The reports of SVPs had neither been placed before the Audit Committee for discussion nor reasons for discrepancies were investigated for taking appropriate action. The Management stated (September 2010) that the steps were being taken to settle the SVPs objection amount through review programmed by SVPs wing.

2.2.65 Against the stores verification conducted in 19 out of 22 divisions during 2005-10, final store verification reports (SVRs) against nine divisions was issued after abnormal delays of two to 11 months, while SVRs of 10 divisions were pending for issue for 11 to 53 months as of June 2010. Consequently, the Company failed to recover the shortages pointed out by SVPs from the persons concerned who were allowed to retire from services without any settlement of pending recoveries against the retirement dues. Test check of pending SVR of Sambalpur division revealed that ₹ 2.19 crore was pending for recovery from seven retired officials. No responsibility was fixed by the Management on the erring officials. The Management stated (September 2010) that steps were being taken to recover the shortage amount from the retired employees. The reply is not realistic as it is not practically feasible to recover this huge amount of ₹ 2.19 crore from seven retired officials as no civil/criminal cases were initiated by the Company against these officials so far.

Internal Audit

2.2.66 The Company had its own Internal Audit Wing (IAW). However, it did not prepare any internal audit manual. IAW completed internal audit up to

March 1990 and was not functional thereafter. After lapse of seventeen years the internal audit of eighteen divisions of the Company was entrusted (December 2007) to the internal audit wing of DoWR, while that of HO was entrusted (September 2007) to the Finance Department. During the period from May 2008 to March 2010, the DoWR conducted internal audit of eight out of 18 divisions for the period from 2005-06 to 2007-08 while that of the HO was conducted by the Finance Department for the period from 2000-01 to 2007-08. Internal Audit Reports (IARs) and the action taken notes (ATNs) thereagainst were never placed before the BoD. The Statutory Auditors in their reports for the years 2004-05 to 2008-09 also opined that the internal audit of the units needs to be strengthened. No effective action was, however, initiated by the Company to improve and to make the Internal Audit purposeful and effective.

Acknowledgement

We acknowledge the co-operation and assistance extended by the Management and staff of the Company at various stages of conducting the Performance Audit and the Entry and Exit conference.

Conclusion

- **No attempt was made by the State Government or Company to formulate perspective plan for execution of LIPs till September 2009 though the State had lift irrigation potential of 8.90 lakh Ha. Resultantly, Company could create irrigation potential of 4.64 lakh Ha. only as of March 2010.**
- **The Company failed to achieve the target envisaged in the State master plan of December 2006 for providing irrigation facilities to 174 deficit blocks having below 35 per cent irrigation facility due to priority not being accorded to the deficit blocks.**
- **The annual plans for execution of LIPs were prepared on ad-hoc basis without any linkage with the perspective plan/ State master plan. Even the annual targets could not be achieved due to absence of co-ordination among the Company and funding agencies in sanction of schemes/release of funds as well as delays in completion of works by the divisional officers. The complicated formulae adopted for assessing project viability and cumbersome procedure involved in sanction and release of scheme funds also contributed towards delays in execution of projects.**
- **Though large number LIPs became defunct during 2005-10 due to various reasons, no long term action plan was prepared for revival of the defunct LIPs so as to stabilise the created irrigation potential.**

- **Due to inflexibility and inadequacy of the cost estimates coupled with non-realisation of contribution from PPs towards their share in the capital cost of the LIPs, the entire created/designed ayacut could not be covered under irrigation.**
- **The internal control system, manpower management and monitoring systems of the Company were also deficient and had adverse impact on the execution of new LIPs/revival of defunct LIPs and functioning of PPs.**

Recommendations

The Company may like to put emphasis on following:

- **preparation of realistic plan for execution of new LIPs duly linked with the State perspective plan and State master plan and formulation of need based long term plans for revival of defunct LIPs with proper follow-up for its achievement;**
- **adoption of simplified procedure for sanction and release of funds for schemes to avoid delay in execution of schemes;**
- **devising the simplified formulae for assessing project viability on sustainable basis considering small size of the projects;**
- **ensuring adequate and effective coordination among the Company, funding agencies and various departments of GoO;**
- **flexibility/adequacy in cost estimates so as to ensure complete coverage of the designed ayacut under irrigation with prompt revision of cost estimates;**
- **sensitising the water users to contribute their share of project costs through awareness campaign; and**
- **strengthening its monitoring and internal control system.**