

CHAPTER II

Performance audit relating to Government Company

Himachal Pradesh State Electricity Board Limited

2 Power Distribution Activities

Executive Summary

The business of distribution of power in Himachal Pradesh is carried out by Himachal Pradesh State Electricity Board Ltd. (Company). The Company was incorporated on 3 December 2009 under the Companies Act, 1956.

The Company sold 5,555.71 MUs of energy in 2006-07 and enhanced to 7,098.35 MUs in 2009-10 (an increase of 27.77 per cent). As on 31 March 2011, the Company had a distribution network of 0.87 lakh Circuit Kilometers, 184 feeding sub-stations and 22,472 distribution sub-stations of various categories servicing 19.69 lakh consumers. The Company's turnover was ₹2,978.35 crore in 2009-10.

Financial Position and Working Results

The Company has not finalised its accounts for the year 2010-11. The total loss amounted to ₹144.01 crore during four years from 2006-07 to 2009-10 even after adjusting profit of ₹34.19 crore earned during 2006-07 and 2008-09. The realisation per unit, increased from ₹3.70 in 2006-07 to ₹4.29 in 2009-10 but the same was not sufficient to cover the cost per unit which ranged between ₹3.70 to ₹4.51 per unit during the corresponding period.

Distribution Network Planning

Against the planned additions of 5,709 distribution sub-stations over the review period, only 4,217 distribution sub-stations were actually added. Further, as compared to the growth of connected load

(up to 33 KV) of 3,368.19 MW in 2006-07 to 4,402.80 MW (4892 MVA) in 2010-11 (30.72 per cent), the increase in transformer capacity was from 1,007.98 MVA to 1,228.257 MVA only (21.85 per cent).

Implementation of Centrally Sponsored Schemes

Out of 98 villages identified under the Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) launched in March 2005 by the GOI, only 26 villages were electrified up to March 2011. As such, the achievement was only 26.53 per cent though funds amounting to ₹192.68 crore (89 per cent) were utilised against ₹216.29 crore received. The main reasons for under utilisation of funds were delay in award and execution of works by the Company/contractors.

Accelerated Power Development Reforms Programme

GoI sanctioned the APDRP scheme for ₹322.77 crore in 12 operation circles during 2002-03. The scheme had been closed (February 2009) after spending an amount of ₹389.19 crore.

Aggregate Technical & Commercial Losses

One of the main objectives of APDRP Scheme was to strengthen the distribution system with focus on reduction of AT & C losses to around 15 per cent. However, against this the losses remained between 23.65 per cent to 26.28 per cent in 2006-11 despite spending ₹101.44 crore on re-conductoring of HT/LT lines,

re-placement of meters, service wire and conversion of LT to HT lines. Due to non-achievement of targets of AT & C losses of 15 per cent, the utility suffered loss of ₹1,322.37 crore.

State Government delayed the release of funds aggregating to ₹246.48 crore to the Company by 7 to 638 days. Delay in release of funds hampered the progress with consequential cost escalation in seven circles. Resultantly in the initial three years only ₹59.36 crore (31.74 per cent) could be spent against sanctioned amount of ₹187.04 crore. Thus, the work could not be executed equitably over the scheme period. The cost escalation had to be borne by the Company by loan component from M/s REC on which payment of interest of ₹20.99 crore was made.

Restructured Accelerated Power Development Reforms Programme

GoI launched the Restructured APDRP in July 2008. Out of total funds of ₹125.57 crore only ₹8.15 crore had been incurred so far and funds amounting to ₹117.42 crore (93.51 per cent) were still lying unutilised till March 2011.

Purchase of Power

During 2006-08, the actual purchase of power was much higher than the purchases approved by the SERC. Consequently, the Company had to purchase 2,759.49 MUs at higher rates in the form of overdrawal from grid and short-term power purchase.

Performance of Distribution Transformers

Failure rate of DTRs was in excess of the norms fixed by SERC. The repair cost of ₹45.06 crore incurred on the repair of 4,161 transformers exceeded even the cost of same number of new transformers by ₹7.91 crore mainly due to excess supervisory staff.

Billing and Revenue Collection Efficiency

As revenue from sale of energy is the main source of income, the efficiency lies in timely billing of energy sold to consumers and prompt collection of

revenue in time. The balances include outstanding dues against private categories of consumers which increased from ₹140.14 crore in 2006-07 to ₹250.63 crore in 2010-11. The Company failed to take timely action against the defaulting consumers.

Subsidy Support and Cross Subsidisation

The percentage of subsidy to sales of power decreased from 7.64 per cent in 2006-07 to 4.70 per cent in 2009-10.

The domestic consumers are largely benefited from the cross subsidisation at the cost of other categories of consumers.

Conclusion and Recommendations

The Company was not able to recover its cost of operation and its accumulated losses increased by 61.49 per cent during 2006-10. There were deficiencies in formulation of schemes. Distribution capacity could not match with the pace of load growth. The Company had incurred huge expenditure on purchase of power by over drawal from grid and under unscheduled Inter-change due to ill planning of purchase. Huge revenue is outstanding from private categories of consumers, Government Departments and Municipal Corporations. The domestic consumers are largely benefited from cross subsidisation at the cost of other categories of consumers.

We have made seven recommendations to improve distribution segments of the power sector in the State. The Company needs to review the progress of incomplete schemes, Plan its purchase of power under long term and short term agreements to avoid purchases at higher rates; curtail its aggregate technical and commercial losses.

Introduction

2.1 The distribution system of the power sector constitutes the final link between the power sector and the consumer. The efficiency of the power sector is judged by the consumers on the basis of performance of this segment. However, it constitutes the weakest part of the sector, which is incurring large losses. Therefore, the real challenge of reforms in the power sector lies in efficient management of the distribution system. The National Electricity Policy (NEP) has *inter-alia* emphasised on the adequate transition from financing support to aid restructuring of distribution utilities, efficiency improvements and recovery of cost of services provided to consumers to make power sector sustainable at reasonable and affordable prices besides others.

The business of distribution of power in Himachal Pradesh is carried out by Himachal Pradesh State Electricity Board Limited*(Company) which was incorporated on 3 December 2009 under the Companies Act, 1956 and is placed under the administrative control of Multi Purpose Projects & Power Department (MPP&P) of Government of Himachal Pradesh. The Company's management is vested with a Board of Directors comprising Chairman-*cum*-Managing Director (CMD) and six other Directors appointed by the State Government. The day-to-day operations are carried out by the CMD, who is the Chief Executive of the Company and is assisted by Director (F&A), Director (Project), Director (Technical) and Director (Operation). During 2006-07, 5,555.708 Million Units (MUs) of energy was sold by the Board which increased to 7098.349 MUs during 2009-10 *i.e.* an increase of 27.77 *per cent*.

As on 31 March 2011, the Company had a distribution network of 0.87 lakh Circuit Kilometers (CKM), 184 feeding sub-stations[▲] and 2,2472 distribution sub stations of various categories servicing 19.69 lakh consumers. The Company's turnover was ₹ 2,978.35 crore in 2009-10^π, which was equal to 64 *per cent* and 7.04 *per cent* of the State PSUs turnover and State Gross Domestic Product, respectively for the same year. It employed 20,276 employees as on 31 March 2011.

National Electricity Plan (NEP) aims to bring out reforms in the Power Distribution sector with focus on system up-gradation, controlling and reduction of Transmission and Distribution (T&D) losses and power thefts and making the sector commercially viable besides financing strategy to generate adequate resources. It further aims to bring out conservation strategy to

* Earlier known as Himachal Pradesh Electricity Board.

▲ Sub-stations having output voltage at 33 KV and above.

π Accounts for the year 2010-11 are under compilation (September, 2011).

optimise utilisation of electricity with focus on demand side management and load management. The object of the performance audit on the working of the Power Distribution Utilities in the State Sector is to ascertain whether they were able to adhere to the aims and objectives stated in the NEP and Plan and how far the distribution reforms have been achieved.

A review on Tariff, Billing and Collection of Revenue of Himachal Pradesh State Electricity Board was included in the Report of the Comptroller and Auditor General of India, (Commercial) Government of Himachal Pradesh for the year ended 31 March 2007. The Report has not been discussed by COPU (September 2011).

Scope and Methodology of Audit

2.2 The present performance audit conducted during December 2010 to March 2011 covers the performance of the Company* during the period from 2006-07 to 2010-11. The audit involved scrutiny of records at the Head Office and 15[♦] out of 63 Operational Circles/Divisions. These units were selected on the basis of simple random sampling method, without replacement. The audit objectives and audit criteria were explained to Company's management at an entry conference on 31 March 2011.

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

Audit Objectives

2.3 The objectives of the performance audit were to assess:

- Whether aims and objectives of National Electricity Policy, Plans were adhered to and distribution reforms achieved;
- The adequacy and effectiveness of network planning and its execution;
- The efficiency and effectiveness in implementation of central schemes such as, Restructured Accelerated Power Development & Reform Programme (RAPDRP) and Rajeev Gandhi Grameen Vidyutikaran Yojana (RGGVY);

* The word Company also refers to the Board for the period prior to formation of the Company.

♦ Operation Circle Solan, Nahan, Una and Dalhausie, Electrical Division Parwanoo, Nalagarh, Nahan, Rampur, Reckong Peo, Mandi, Nadaun, Una, Dharamshala, Nurpur and Chamba.

- Operational Efficiency in meeting the power demand of consumers in the State;
- Billing and Collection efficiency of revenue from consumers;
- Whether financial management was effective and surplus funds, if any, were judiciously invested;
- Whether a system is in place to assess consumer satisfaction and redressal of grievances;
- That energy conservation measures were undertaken; and
- That a monitoring system is in place and the same is utilised in review of overall working of the Company.

Audit Criteria

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

- Provisions of Electricity Act, 2003;
- National Electricity Plan, Plans and norms concerning distribution network of the Company and planning criteria fixed by the SERC;
- Standard procedures for award of contract with reference to principles of economy, efficiency and effectiveness;
- Terms and conditions contained in the Central Scheme Documents;
- Norms prescribed by various agencies with regard to operational activities;
- Norms of technical and non-technical losses;
- Guidelines/ instructions/ directions of State Government/SERC; and
- Comparison with best performers in the regions/all India averages.

Financial Position and Working Results

2.5 The financial position of the Company for the four years ending 2009-10 is as follows:

Particulars	2006-07	2007-08	2008-09	2009-10 ^ψ
(₹ in crore)				
A. Liabilities				
Paid up Capital	282.11	334.00	372.23	971.77
Reserve & Surplus (including Capital Grants but excluding Depreciation Reserve)	1261.36	1333.86	1530.08	1775.69
Borrowings (Loan Funds)				
Secured	115.44	198.13	233.88	321.15
Unsecured	2002.99	2102.14	1706.51	1913.11
Current Liabilities & Provisions	2341.99	2423.12	3049.60	3391.70
Total	6003.89	6391.25	6892.30	8373.42
B. Assets				
Gross Block	3556.07	3564.76	4271.34	4644.54
Less: Depreciation	464.98	552.91	649.56	754.91
Net Fixed Assets	3091.09	3011.85	3621.78	3889.63
Capital works-in-progress	1108.16	1098.53	997.79	1040.28
Investments	857.25	966.74	1303.16	2082.87
Current Assets, Loans and Advances	710.11	1051.46	739.21	977.46
Accumulated losses	237.28	262.67	230.36	383.18
Total	6003.89	6391.25	6892.30	8373.42
Debt : Equity	7.51:1	6.89:1	5.21:1	2.30:1
Net Worth*	1306.19	1405.19	1671.95	2364.28

(Source: Annual Accounts of the Board/Company)

- It may be seen from the above that the accumulated losses of the Company increased by 61.49 *per cent* from ₹ 237.28 crore in 2006-07 to ₹ 383.18 crore in 2009-10. The reasons for the increase in losses could be attributed to non-recovery of cost of operations, increased borrowings on account of the working capital problems, poor billing and revenue collection efficiency, etc.
- The current liabilities and provisions increased from ₹ 2,341.99 crore in 2006-07 to ₹ 3,391.70 crore in 2009-10 due to increased interest burden and purchase of additional power to meet the increased demand in the State.
- Further, the debt-equity ratio of the Company improved from 7.51:1 in 2006-07 to 2.30:1 in 2009-10. The improvement in debt-equity ratio was mainly due to increase of equity from State Government in the year 2009-10.

^ψ The accounts of the Company for the year ending 31 March 2011 have not been compiled (September, 2011).

* Net worth represents paid-up-capital plus reserves and surplus less intangible assets.

2.6 The particulars of cost of electricity *vis-à-vis* revenue realisation per unit is indicated below:

(₹ in crore)					
Sl.No.	Description	2006-07	2007-08	2008-09	2009-10
1.	Distribution (In MUs)				
(i)	Own Generation	1385.83	1763.43	1967.01	1705.89
(ii)	Total power purchased	5056.95	5425.76	6047.50	6616.35
(iii)	Less: Transmission losses, if applicable	-	-	-	-
(iv)	Net Power available for Sale	6442.78	7189.19	8014.51	8322.24
(v)	Less: Sub-transmission & distribution losses	887.07	972.14	1055.79	1223.89
	Net power sold	5555.71	6217.05	6958.72	7098.35
2.	Income				
(i)	Revenue from Sale of Power	1771.23	2139.50	2813.37	2838.35
(ii)	Revenue subsidy	146.47	168.00	102.00	140.00
(ii)	Other income	140.57	44.98	50.69	70.39
	Total Income	2058.27	2352.48	2966.06	3048.74
3.	Expenditure on Distribution of Electricity				
(a)	Fixed cost				
(i)	Employees cost	471.69	547.96	612.77	729.64
(ii)	Administrative and General expenses	27.65	31.38	49.34	48.31
(iii)	Depreciation	57.14	87.99	96.96	105.53
(iv)	Interest and finance charges	138.21	177.47	172.25	176.21
(v)	Other Expenses	79.72	(-)21.95 [£]	20.86	(-)60.17
	Total fixed cost	774.41	822.85	952.18	999.52
(b)	Variable cost				
(i)	Purchase of Power	1174.16	1404.99	1823.54	2014.84
(ii)	Electricity Duty [♣]	29.83	80.93	77.96	38.00
(iii)	Transmission/ Wheeling Charges	80.38	124.50	130.22	156.76
(iv)	Repairs & Maintenance	27.44	25.52	27.81	30.44
	Total variable cost	1281.98	1555.01	1981.57	2202.04
(c)	Total cost 3(a) + (b)	2056.39	2377.86	2933.75	3201.56
4	Net Profit/(Loss) (2-3)	1.88	(25.38)	32.31	(152.82)
5.	Realisation (₹ per unit) (including revenue subsidy)	3.70	3.78	4.26	4.29
6	Fixed cost (₹ per unit)	1.39	1.32	1.37	1.41
7	Variable cost (₹ per unit)	2.31	2.50	2.85	3.10
8	Total cost per unit (in ₹) (6+7)	3.70	3.82	4.22	4.51
9.	Contribution (5-7) (₹ per unit)	1.39	1.28	1.41	1.19
10	Profit (+)/Loss(-) per unit (in ₹) (5-8)	-	(-) 0.04	0.04	(-) 0.22

(Source: Annual Accounts of the Board/Company.)

It may be seen from the above that the realisation per unit, though, increased from ₹ 3.70 in 2006-07 to ₹ 4.29 in 2009-10, but the same was, however, not sufficient to cover the cost per unit during 2007-08 and 2009-10 which was ₹ 3.82 and ₹ 4.51 per unit against realisation per unit of ₹ 3.78 and ₹ 4.29 respectively.

It is also evident from the above table that purchase of power and employee cost constituted major elements of cost in 2009-10 which represented 62.93

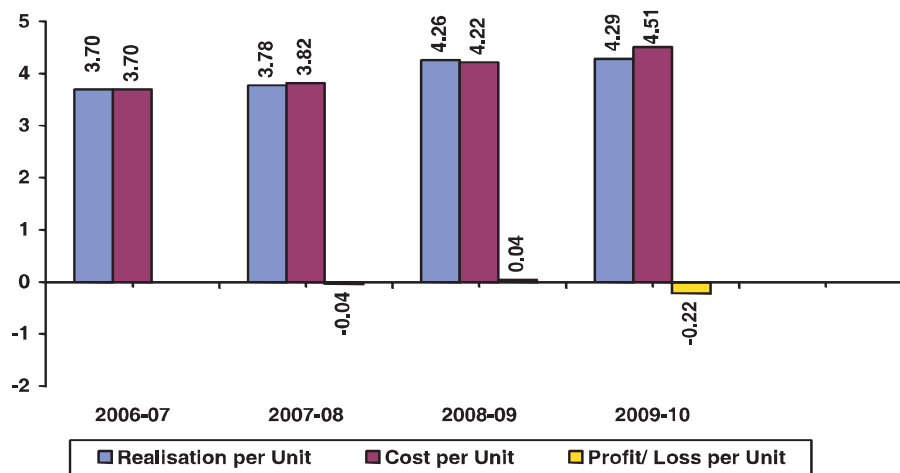
£ The figures are negative due to prior period adjustments.

♣ ED recovered from the consumers and remitted to the Govt. is neither a cost nor an income to the utility. Hence, kept out of the revenue account.

and 22.79 per cent of the total cost in that year. On the other hand sale of power constituted the major elements of revenue in 2009-10 which represented 97.69 per cent of the total revenue.

Recovery of cost of operations

2.7 The Company was not able to recover its cost of operations during the year 2007-08 and 2009-10. The revenue realisation per unit and cost per unit for four years ending 2009-10 is given in the graph below:



It may be seen from the working results that there remained a revenue gap of ₹ 25.38 crore in 2007-08 and ₹ 152.82 crore in 2009-10 (even after including revenue subsidies & grants). The total loss amounted to ₹ 144.01 crore during the four years from 2006-07 to 2009-10 even after adjusting profit of ₹ 34.19 crore earned during 2006-07 and 2008-09. The main reasons for high per unit cost as compared to revenue from sale of power are attributable to higher expenditure on inter state purchase of power, high T & D losses, high employee costs and interest and finance charges which needs immediate attention of the State Government for necessary remedial action.

Audit Findings

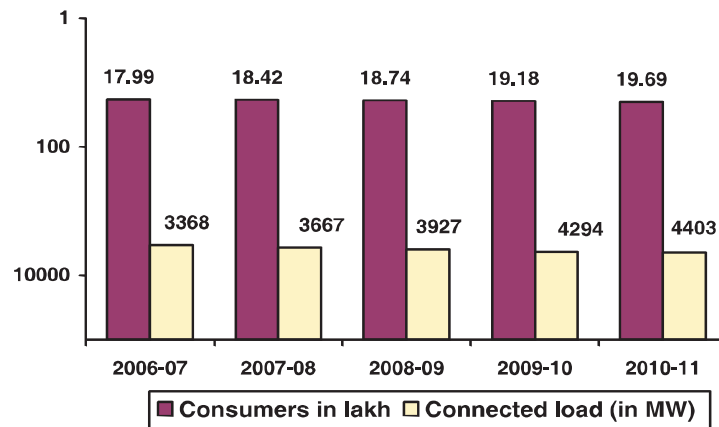
2.8 We explained the audit objectives to the Company at an 'Entry Conference' held on 31 March 2011. Subsequently, audit findings were reported to the Company and the State Government in August 2011 and discussed at an 'Exit Conference' held on 25 October 2011. The Exit Conference was attended by Director (Operation). The replies of the State Government/Company to the audit findings were awaited (October 2011). The views expressed by them during exit conference have been considered

while finalising this performance audit report. The resultant audit findings are as follows:

Distribution Network Planning

2.9 The Company is required to prepare long term/annual plan for creation and upkeep of infrastructural facilities for efficient distribution of electricity so as to cover maximum population in the State. Besides the upkeep of the existing network, additions in distribution network are planned keeping in view the demand/connected load, anticipated new connections and growth in demand based on Electric Power Survey. Considering physical parameters, Capital Investment Plans are submitted to the State Government/SERC. The major components of the outlay include normal development and system improvement besides rural electrification and strengthening of IT enabled systems. Audit noticed that no long term plan was prepared by the company up to March 2011.

The particulars of consumers and their connected load during five years ending 2010-11 is given in the following bar chart:



(Source: Administrative Reports)

The particulars of distribution network planned *vis-à-vis* achievement there against in the State as a whole is depicted in **Annexure 7**. It may be seen from the same that against the planned additions of 5,709 distribution sub-stations over the audit period, only 4,217 distribution sub-stations were actually added.

As compared to the growth of connected load (up to 33 KV) of 3,368.19 MW in 2006-07 to 4,402.80 MW (equivalent to 4,892 MVA) in 2010-11 (30.72 *per cent*) as depicted in the graph, the increase in transformers capacity was from 1,007.98 MVA to 1,228.26 MVA* only (21.85 *per cent*). The ideal ratio of transformation capacities to connected load is considered as 1:1. Thus, the increase in distribution capacity could not match the pace of growth in

* Excluding transformer capacity added by the industrial consumers at their own expenses.

consumer demand mainly due to non-completion of the construction of the sub-stations as planned.

Further, taking into account the connected load of 4,402.80 MW as at the end of March 2011, the requirement of transformers capacity would be 5,136.60 MVA^λ after considering the requirement of spin reserve of 5 *per cent*. However, this capacity was only 1,228.26 MVA which was not adequate to meet the projected load demand as per the Electric Power survey. This led to overloading of network and consequential rotational cuts in distribution of electricity. After giving margin for maximum load at which transformers can function in normal manner, the transformers capacity requirement would work out to 4,447.27 MVA[•]. Though the Company increased its transformation capacity, the same was, however, not commensurate with the increase in connected load resulting in huge gap in transformation capacity. This was mainly due to non/short completion of the construction of the sub-stations as planned.

System Improvement Schemes

Avoidable loss due to late completion/non completion of schemes

2.9.1 System Improvement schemes (13 no.) with total project cost of ₹ 20.30 crore were sanctioned between April 1999 and September 2008. Out of ₹ 20.30 crore; the REC provided loan of ₹ 18.20 crore and the balance ₹ 2.10 crore was to be arranged by the Company. On completion of these schemes the Company had projected addition of 39.8 MVA capacity with consequential saving in losses of 30.69 MUs *per annum*.

Due to non/delayed completion of schemes the Company could not avail the benefit of saving in losses of ₹ 7.99 crore (58.04MUs)

Audit noticed that out of thirteen schemes, eight schemes were completed in time and three schemes scheduled for completion in March 2005 (1 scheme) and October 2009 (2 scheme) had not yet been completed (September 2011) due to which 8 MVA additions could not be made. Further, two schemes (6.4 MVA) were completed in October 2009 and June 2010 against scheduled completion of March 2004. The abnormal delays were mainly due to non-provision of sufficient budget and delayed procurement of material. Thus, due to non-completion/late completion of these five schemes the Company could not avail the envisaged benefit of saving in losses of ₹ 7.99 crore (58.04 MUs).

Implementation of Centrally Sponsored Schemes

Rural Electrification

2.10 The National Electricity Policy (NEP) states that the key objective of development of the power sector is to supply electricity to all areas including

λ $4402.80 \text{ MW}/0.9=4892 \text{ MVA} \times 5\%=244.60$

$4892 \text{ MVA}+244.60 \text{ MVA}=5136.60 \text{ MVA}$.

• $4402.80 \text{ MW}/0.9=4892 \text{ MVA}/110 \times 100=4447.27 \text{ MVA}$ (Overloading of 10 *per cent* has been considered).

rural areas for which the GoI and the State Governments would jointly endeavour to achieve this objective. Accordingly, the Rajiv Gandhi *Grameen Vidyutikaran Yojana* (RGGVY) was launched in March 2005, which aimed at providing access to electricity for all households in five years for which the Government provides 90 *per cent* capital subsidy and 10 *per cent* of the cost of project to be contributed by the Company.

Besides, the GoI notified the Rural Electrification Policy (REP) in August 2006. The REP *inter-alia* aims at providing access to electricity for all households by 2009 and minimum lifeline consumption of one unit per household per day as a merit good by the year 2012. The other Rural Electrification (RE) schemes viz., Accelerated Electrification of one lakh villages and one crore household, Minimum Needs Programme were merged into RGGVY. The features of the erstwhile '*Kutir Jyoti Programme*' were also suitably integrated into this scheme. Rural Electrification Corporation (REC) was notified as the nodal agency for implementation.

As per guidelines of RGGVY a village would be declared electrified if basic infrastructure (distribution transformer and distribution lines) is provided in the inhabited locality, electricity is provided to public places (Schools, Panchayat Office, Health Centres, Dispensaries, Community Centres etc.) and the number of households electrified should be at least 10 *per cent* of the total number of households in the village. As on 31 March 2006, out of 17,495 villages in the State (as per 2001 Census), 17,386 villages were electrified (99.37 *per cent*). The year-wise target *vis-à-vis* achievement of electrification under RGGVY scheme during the audit period is shown in the table below:

Year	Electrified in the beginning of the year	Targeted for electrification during the year	Electrified during the year	(No. of villages)	
				Electrified in the end of the year	Percentage of achievement against target during the year
2009-10	17386	3	3	17389	100
2010-11	17389	20	23	17412	115

(Source: Data supplied by the company)

Out of 98 villages identified under the scheme only 26 villages were electrified during the two years ending March 2011.

Audit observed that out of total 98 villages identified under the scheme only 26 villages were electrified during the two years ending March 2011. Thus, the remaining 72 villages were yet to be electrified though the scheme was proposed for closure in November 2011. As such, the achievement was only 26.53 *per cent*. The main reasons for this low achievement were failure to enable timely supply of material and deployment of inadequate man power by the contractors.

The position of the funds available *vis-à-vis* utilised under RGGVY during the five years ending 31 March 2011 is depicted in the table below:

(₹ in crore)

Year	Opening Balance	Funds received during the year	Total funds available	Funds Utilised	Unspent funds at the end of the year
2006-07	-	7.48	7.48	-	7.48
2007-08	7.48	-	7.48	2.26	5.22
2008-09	5.22	80.00	85.22	2.50	82.72
2009-10	82.72	122.46	205.18	89.78	115.40
2010-11	115.40	6.35	121.75	98.14	23.61
Total	-	216.29	-	192.68	-

(Source: Data supplied by the Company)

It is evident from the above table that funds amounting to ₹ 192.68 crore (89 *per cent* only) were utilised against ₹ 216.29 crore received during the audit period under this scheme thereby leaving an unspent balance of ₹ 23.61 crore. The reasons for under utilisation of funds were delay in award and execution of works by the company/contractors leading to shortfall in achievement of physical targets.

The component-wise scheme provisions *vis-a-vis* achievement there against ending March 2011 are tabulated below:

Sl.No.	Particulars	Quantity as per scheme	Actual physical achievement	Shortfall	Percentage shortfall
1	33/11 KV2x1.6 MVA Sub-Station	1	--	1	100
2	33 KV line (Km.)	64	13	51	79.69
3	Augmentation of sub-station	8	8	-	Nil
4	DTRs (no.)	2092	1555	537	25.67
5	HT line (Kms)	1934	1035	899	46.48
6	LT lines (Kms)	5905	3523	2382	40.34
7	BPL household electrification (in no.)	13569	4008	9561	70.46

(Source: Data supplied by the Company)

The above table indicated that there were shortfalls in achievement of various components ranging between 26 to 100 *per cent* though the scheme is due for closure by November 2011.

Irregular booking of VAT to RGGVY

2.10.1 Ministry of Power, Govt. of India clarified (February 2008) that state taxes on RGGVY works would not be reimbursed and had to be borne by the concerned State Government/State Utility. Audit, however, noticed that a sum of ₹ 3.88 crore on account of VAT had been charged to the RGGVY grant by eight units test checked in audit in violation of the *ibid* instructions. This had resulted in excess availing of grant to that extent.

VAT amounting to ₹ 3.88 crore had been charged to grant in violation of the instructions resulting in excess availing of grant.

Accelerated Power Development Reforms Programme (APDRP)

2.11 The Government of India (GoI) approved the Accelerated Power Development Reforms Programmes (APDRP) scheme in 2002-03 to leverage the reforms in power sector through the State Government. The scheme was implemented with the objective of up-gradation of sub-transmission and distribution system including energy accounting and metering, for which GoI provided 90 *per cent* grant and 10 *per cent* loan.

Under APDRP, twelve schemes were sanctioned for ₹ 322.77 crore in 12 operation circles.^α The same had been completed (February 2009) after spending an amount of ₹ 389.19 crore (*grant-in-aid*: ₹ 290.48 crore, GoI loan: ₹ 16.39 crore and REC loan: ₹ 82.32 crore). The reasons for excess expenditure were non-execution of works equitably over the scheme period and non/short availability of material.

Shortfall in achievement

2.11.1 APDRP Schemes were implemented through 12 operation circles of the Company. While reviewing the closing data, audit noticed that out of 12 circles, physical achievement was very less as compared to scheme provisions in respect of operation circles Dalhousie and Solan. The detail thereof is given in the table below:

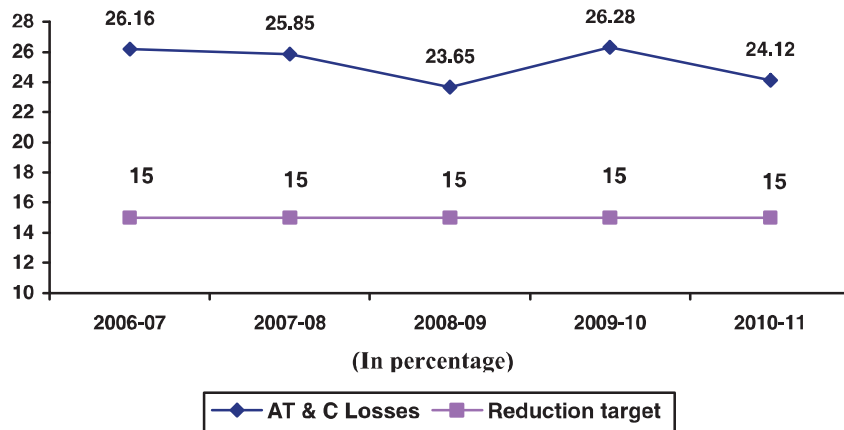
Sl. No.	Description of schemes	Provision as per DPR	Actual achievement	Shortfall	Percentage of shortfall
Dalhousie Circle					
1.	33/11 KV S/Stns. (Job)	2	-	2	100
2.	DTR controls and protection (Job)	1	-	1	100
3.	New Service Wire (KM)	300	149.26	150.74	50.25
4.	New 33 KV line (KM)	18	8.174	9.826	54.59
5.	Re-conductoring of LT Lines (KM)	303.661	73.365	230.296	75.84
6.	LT to HT conversion (KM)	16	4.61	11.39	71.19
Solan Circle					
1.	New Service Wire (KM)	340	27.415	312.585	91.94
2.	LT Capacitor (MVAR)	10.035	-	10.035	100
3.	New 33/11 KV S/Stn. (Nos.)	4	3	1	25
4.	22/11KV Line i/c cables (KM)	154.2	127.094	27.106	18
5.	Re-conductoring of HT line (KM)	245.2	138.909	106.291	43.35

The shortfall in achievement in respect of Dalhousie Circle ranged between 50 and 100 *per cent* under various components. Similarly the shortfall in Solan circle ranged between 18 and 100 *per cent*. Thus, the objective of the scheme could not be achieved in these two circles.

^α Operation Circle, Bilaspur, Shimla, Solan, Nahan, Una, Rampur, Dalhousie, Kullu, Rohru, Mandi, Hamirpur and Kangra.

Aggregate Technical & Commercial Losses

2.11.2 One of the prime objectives of APDRP scheme was to strengthen the distribution system with the focus on reduction of Aggregate Technical & Commercial (AT&C) losses to around 15 per cent. The transmission and distribution losses linked to collection efficiency of the Company are termed as AT&C losses. The AT&C losses include theft, non billing, incorrect billing and inefficiency in collection besides transmission and distribution losses. The Company has not evolved any system for segregation of technical and commercial losses. The graph below depicts the AT&C losses over the audit period in the Company:



Due to non-achievement of AT&C losses reduction target of 15 per cent, the Company suffered loss of ₹ 1,322.37 crore.

It may be seen from the above figure that AT&C losses ranged between 23.65 and 26.28 per cent during the last five years ending 2010-11. The Company could not achieve the target of 15 per cent AT&C losses despite incurring of an expenditure of ₹ 101.44 crore on re-conductoring of HT/LT lines (4,028.615 Kms), replacement of meters (2,04,714 Nos.), service wire (2,189.219 KM) and conversion of LT to HT lines (107.518 Kms). Due to non-achievement of targets of 15 per cent of AT&C losses, the Company suffered loss to the extent of ₹ 1,322.37 crore^δ during 2006-11.

The following deficiencies were noticed in execution of the scheme:

Loss due to delay in execution of scheme

2.11.3 Government of India, MoP sanctioned (August 2002 to May 2003) ₹ 322.77 crore (90 per cent grant and 10 per cent loan) under APDRP for all 12 circles of the Company with scheduled completion period of three years. Of this, GoI released of ₹ 306.88 crore (₹ 290.49 crore grant and ₹ 16.39 crore loan) through the State Government and remaining amount of ₹ 15.89 crore was arranged from M/s. REC Ltd. against loan component. Audit noticed that

^δ Losses in excess of 15 per cent multiplied by average per unit sale rate of each year.

the State Government delayed the release of funds aggregating to ₹ 246.48 crore to the Company by 7 to 638 days. Delay in release of funds hampered the progress with consequential cost escalation of ₹ 73.56 crore in seven circles[‡]. Resultantly, in the initial three years ending March 2005 only ₹ 59.36 crore (31.74 per cent) could be spent against sanctioned amount of ₹ 187.04 crore and works could not be executed equitably over the scheme period. Though the cost escalation was approved (November 2006) by the GoI no financial assistance was provided. Therefore, the cost escalation had to be borne by the Company with loan component of ₹ 66.43 crore (January 2008 to May 2009) from M/s REC on which payment of interest of ₹ 20.99 crore was made up to March 2011.

Non-availing of grant

2.11.4 A provision of ₹ 1.14 crore was made for the construction of 2x1.6 MVA sub-station at Gangath (Dalhousie Circle) under APDRP scheme sanctioned in May 2003. Under the scheme 90 per cent cost of the project (₹ 1.03 crore) was to be financed out of grant and remaining 10 per cent (₹ 0.11 crore) was to be arranged by the Company. The sub-station could not be constructed under APDRP due to non-finalisation of the mode of construction (manned/unmanned) by the Company. In the meanwhile, the said scheme was closed in February 2009. Audit noticed that Gangath sub-station has now (November 2010) been proposed for construction (unmanned mode) by obtaining loan from the REC under system improvement scheme. Thus, non-construction of sub-station under APDRP by availing grant, the Company deprived itself of ₹ 1.03 crore grant, besides non-achievement of reduction in losses as envisaged in the scheme.

Undue favour to the private party

2.11.5 As per Power Purchase Agreement (PPA) entered (October 2000) with Sai Engineering Foundation (Independent Power Producer), the party was to make its own arrangement for evacuation of power from its power house to inter-connecting point of the Company. However, the Company constructed (November 2007) line for evacuation of power from the power house to 22 KV sub-station, Pooh (inter-connection point) and booked an expenditure of ₹ 21.21 lakh under APDRP scheme instead of recovering it from the party. This had resulted in undue favour to a private party and diversion of APDRP funds to that extent.

Blockage of funds

2.11.6 The Company awarded construction of 2x6.3 MVA sub-station, Damtal in February 2008 and associated transmission line in March 2008 at a total cost of ₹ 4.08 core. The sub-station was completed in March 2009 after incurring an expenditure of ₹ 3.21 crore. It was noticed that the construction work of line could not be completed as the work was stopped by the Forest Department in June 2010 after incurring an expenditure of ₹ 0.22 crore due to the reason that the Company failed to obtain forest clearance which was

[‡] Shimla, Solan, Kangra, Dalhousie, Una, Mandi and Kullu

mandatory before start of the work on forest land. The forest clearance has not been obtained so far and the work is held up (September 2011) for want of necessary clearance. Consequently, the sub-station completed in March 2009 could not be commissioned in absence of transmission line. This resulted in blocking of funds of ₹ 3.43 crore on sub-station and transmission line with consequential interest loss of ₹ 0.77 crore* besides depriving of saving in losses as envisaged in the scheme.

2.11.7 XLPE power cable measuring 35.871 Km. valued at ₹ 2.14 crore was procured (May 2005 & June 2006) for Kullu Circle under APDRP. The cable was to be provided in a line from Bhunter to Siubag area under the Circle but could not be utilised due to the reason that no bids were received (November 2006) for execution of this work. The Company thereafter did not take any action to utilise the same in the line for which the cable was purchased. The scheme however was closed in February 2009. This clearly indicated that the cable was procured without its actual requirement in the circle. The Company transferred 19.467 Km. cable (September 2006 to August 2010) to other units of the Company where only 15.410 Km have been used in works not covered in APDRP and the balance 20.461 Kms. valued at ₹ 1.22 crore was still lying unutilised. This had resulted in blockage of funds (₹ 1.22 crore) and diversion of APDRP funds (₹ 0.92 crore) to that extent with consequential interest loss of ₹ 63.75 lakh*.

Non-utilisation of AB Cable

2.11.8 The Company purchased (March 2005) AB Cable 95MM² for replacement of 20 Kms. conductor at Kumarsain local and Nogli-Rampur feeder under the APDRP. AB cable (10.058 Kms.) valued at ₹ 53.08 lakh and its related accessories (₹ 2.68 lakh) were received in the store during June/October 2005. It was noticed that the same could not be utilised due to non-deployment of skilled labour and closure of the scheme in February 2009. Thus, due to failure of the Company in deploying skilled labour, the conductor of above mentioned works could not be replaced with the cable. This not only resulted in blockage of ₹ 55.76 lakh and interest loss of ₹ 35.17 lakh* but also defeated the envisaged purpose of preventing illegal tapping, over-loading of DTRs and stable voltage supply.

Non-replacement of rotten service wires/re-conductoring of HT

2.11.9 Under the APDRP scheme, 650 Km. rotten service wires of different sizes was to be replaced at a cost of ₹ 1.24 crore in two[#] circles. It was noticed that only 196.17 Kms service wire was replaced against the provision of 650 Kms. Thus, the Company could not achieve reduction in T&D losses valuing ₹ 0.94 crore as envisaged in the scheme. The main reasons for non-achievement of the targets were failure to start the works immediately after sanction of the schemes and non-availability of material in field units.

* Calculated at the rate of 11 per cent per annum at which overdraft facility being obtained by the Company.

Rampur & Dalhousie.

2.11.10 Similarly, under the APDRP scheme of Solan circle there was a provision of re-conductoring of 245.200 Kms. HT and replacement of 340 Kms. rotten service wire against which re-conductoring of 138.909 Kms. HT and replacement of 27.415 Kms. rotten service wire was done. Due to shortfall in achievement of targets, the Company could not avail benefit of reduction of T&D losses to the extent of ₹ 10.56 crore as envisaged in the sanctioned scheme.

Restructured Accelerated Power Development Reforms Programme

2.12 In order to carry forward the reforms further, the GoI launched the Restructured APDRP (R-APDRP) in July 2008 as a Central Sector Scheme for XI Plan (2007-12). The R-APDRP scheme comprises Part A and B. Part A was dedicated to establishment of IT enabled system for achieving reliable and verifiable baseline data system in all towns besides installation of SCADA[▲]/Distribution Management System. For this, 100 *per cent* loan was provided, and was convertible into grant on completion and verification of same by the Third Party independent evaluating agencies. The Part B of the scheme deals with strengthening of regular sub-transmission & distribution system and up-gradation of the projects. Power Finance Corporation (PFC) was the nodal agency for the implementation of this scheme.

Financial Performance

2.12.1 The details of the funds released by GoI, mobilised from other agencies (including REC/ PFC/ Commercial Banks) utilisation there against and balances are depicted below:

Year	Funds released by		Funds available	Funds utilised	Balance	Percentage of balance to funds available
	GoI	Others				
2009-10	24.32	-	24.32	-	24.32	100
2010-11	101.25	-	125.57	8.15	117.42	93.51

(₹ in crore)

(Source: Data supplied by the Company)

The above table showed that the major portion (93.51 *per cent*) of the funds was lying un-utilised (March 2011). Out of unspent balance of ₹ 117.42 crore the funds amounting to ₹ 64 crore were invested in FDRs with the banks and funds of ₹ 50 crore had been utilised by the Company towards its working capital requirement. The remaining unspent balance of ₹ 3.42 crore was lying in the current account of the Company (March 2011).

▲ **Supervisory Control And Data Acquisition** – It generally refers to computer systems that monitor and control industrial, infrastructure or facility-based processes.

Audit observed that the implementation of the scheme in the State was very slow and the targeted objective to achieve the entire implementation of the scheme in the State appears remote. As such, the conversion of loan to grant as envisaged in the Scheme may not be achievable.

Establishment of IT enabled system

2.12.2 Part – A of the R-APDRP scheme was dedicated to establishment of IT enabled system and SCADA/Distribution Management System. Fourteen towns of the State were found eligible (as per Census 2001 for special category state)* for funding as per DPRs submitted to PFC. Government of India, MoP sanctioned (September 2009) the Part-A of the scheme for ₹ 81.07 crore which was further revised to ₹ 96.40 crore in August 2010. The Company had so far (March 2011) incurred an expenditure of ₹ 8.15 crore on ring fencing and payment of advance to the M/s HCL Info system Limited which was appointed as IT implementing Agency in August 2010. The LOI for the works covered under Part-A was issued on 20 August 2010 and LOA on 30 August 2010 in favour of M/s HCL Infosystems Ltd. with completion period up to September 2011.

Audit observed that the IT enabled system was still (June 2011) incomplete.

Strengthening of sub-transmission and distribution system

2.12.3 In Part-B of the scheme focus was on reduction of Aggregate Technical & Commercial (AT&C) losses on sustainable basis. For implementation of the scheme 90 *per cent* of the sanctioned project cost was to be provided by GoI as loan for special category states and entire loan was to be converted into grant in five tranches depending upon the extent of maintaining AT&C loss level at 15 *per cent* for five years. The balance ten *per cent* was to be arranged by the Company. The schemes for fourteen towns have been sanctioned for ₹ 322.18 crore (₹ 289.97 crore: GoI loan & ₹ 32.21 crore: own funding) by Power Finance Corporation (PFC) Ltd. during August and December 2010. PFC released ₹ 96.65 crore towards first instalment (₹ 49.66 crore for four towns on 28 September 2010 and ₹ 46.99 crore for ten towns on 18 February 2011). Despite receipt of funds, the construction works were yet to be awarded (September 2011) by the Company.

Operational efficiency

2.13 The operational performance of the Company is judged on the basis of availability of adequate power for distribution, adequacy and reliability of distribution network, minimising line losses, detection of electricity theft, *etc.*

• Towns with population of 10,000 and above considered for special category States.

These aspects have been discussed below:

Purchase of Power

2.13.1 The demand for energy has been increasing year after year in the State due to economic and social development. Assessment of future demand and requirement of power is calculated on the basis of past consumption trends, present requirement, load growth trends and T & D losses and its trend. SERC approves the sources of purchase of power and the purchase cost based on the estimates made in the Annual Revenue Requirement (ARR).

The Company had projected its sale for the control period (2009-11) by applying four year compounding of annual growth rate. For non-domestic and non-commercial category of consumers, a growth rate of 10 *per cent* had been considered for projecting the sales.

The details of demand of power assessed on the basis of 17th Electric Power Survey (EPS), purchase of power approved by SERC and actual power purchased during the period 2006-07 to 2010-11 in respect of the State as a whole were as under:

(In Million Units)					
Year	Demand assessed in EPS	Purchases approved by SERC	Actual Power purchased	Power Deficit	Excess/Shortfall in purchase against approved
(1)	(2)	(3)	(4)	(5) = (2 – 4)	(6) = (3 – 4)
2006-07	5585	4267.27	5056.95	528.05	789.68
2007-08	6212	4338.00	5425.76	786.24	1087.76
2008-09	6909	5884.81	6047.50	861.50	162.69
2009-10	7684	6863.79	6616.35	1067.65	(-)247.44
2010-11	8545	7995.73	7649.66	895.34	(-)346.07

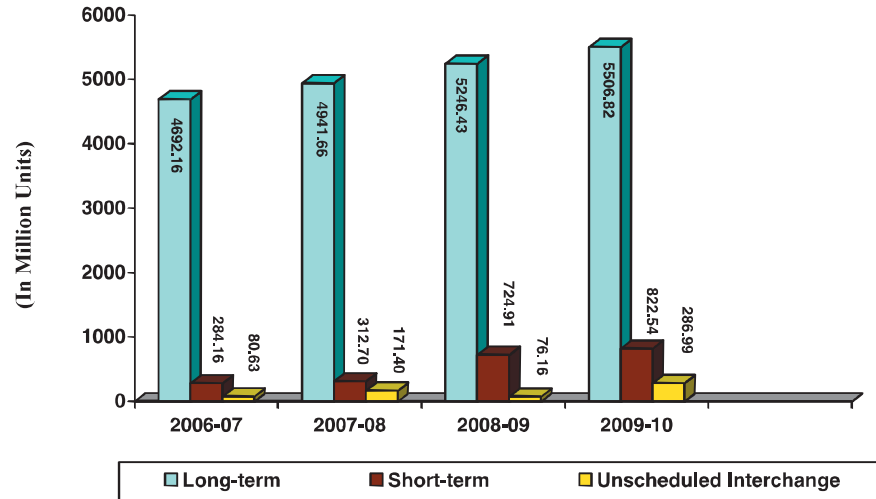
(Source: Electric Power Survey & Tariff orders issued by HPERC)

As may be seen from above table that during 2006-08, the actual purchase of power was much higher than the purchases approved by the SERC due to short generation of power from its own generating stations as compared to the projected generation. Further, the purchases were far below the purchases approved by the SERC during 2009-11 and consequently, the Company had to impose power cuts to the extent of 287.11 MUs.

2.13.2 For the above purchases, the Company entered into long/short-term PPA with various agencies viz., State/Central PSUs, IPPs, *etc.* besides unscheduled interchange (UI) purchases on need basis. The break-up of the

total power purchased (as mentioned in previous table) into these categories was as follows.

The source-wise purchase of power during audit period is given in the **Annexure 8**.



It may be seen from the above graph and annexure that out of 23,146.56 MUs power purchased during 2006-10, 2,759.49 MUs (11.92 per cent) was in the form of overdrawl from the grid and short-term power purchase. The overdrawal from grid and short term power purchases were made at ₹ 3.60 per unit* and ₹ 4.52 per unit* respectively as compared to long term sources at rate of ₹ 2.27 per unit*. Had the Board resorted to well planned long-term arrangements of power purchase, the overdrawal from grid and short-term purchase of power at high cost ₹ 564.29** crore incurred during 2006-10 could have been avoided.

Sub-transmission & Distribution Losses

2.13.3 The distribution system is an important and essential link between the power generation source and the ultimate consumer of electricity. For efficient functioning of the system, it must be ensured that there are minimum losses in sub-transmission and distributing the power. While energy is carried from the generation source to the consumer, some energy is lost in the network. The losses at 33 KV & 11 KV stage are termed as sub-transmission losses while those at 440/220 volts are termed as distribution losses. These are based on the difference between energy received by the Distribution Company and energy billed to consumers. The percentage of losses to available power indicates the effectiveness of Distribution System. The losses occur mainly

* Average rate for four years period from 2006-07 to 2009-10.

** Short term purchases = 2,144.31 MUs x ₹ 2.25 = ₹ 482.47 crore.

Un-scheduled interchange charges = 615.18 MUs x ₹ 1.33 = ₹ 81.82 crore.

on two counts, *i.e.*, technical and commercial. Technical losses occur due to inherent character of equipment used for transmitting and distributing power and resistance in conductors through which the energy is transmitted from one place to another. On the other hand, commercial losses occur due to theft of energy, defective meters and drawl of un-metered supply, *etc.*

The table below indicates the energy losses for the power distribution company in the State as a whole for last five years up to 2010-11:

(In Million Units)						
Sl.No.	Particulars	2006-07	2007-08	2008-09	2009-10	2010-11 (Provisional)
1.	Energy purchased/available for sale	6442.78	7189.20	8014.51	8322.24	9583.37
2.	Energy sold	5555.71	6217.06	6958.72	7098.35	8144.77
3.	Energy losses (1 – 2)	887.07	972.14	1055.79	1223.89	1438.60
4.	Percentage of energy losses {(3 / 1) x 100}	13.77	13.52	13.17	14.71	15.01
5.	Percentage of losses allowed by SERC	18.5	17.5	13.14	12.79	12.49
6.	Excess losses (in MUs)	-	-	2.40	159.75	241.52
7.	Average realisation rate per unit (in ₹)	3.70	3.78	4.26	4.29	4.35
8.	Value of excess losses (₹ in crore) (6 x 7)	-	-	1.02	68.53	105.06

(Source: Annual Accounts of the Company/Board)

It would be seen from the above table that losses ranged between 13.17 and 15.01 *per cent* during the last five years ending 31 March 2011. The actual losses were in excess of 403.67 MUs (valuing ₹ 174.61 crore) than the percentage of losses fixed (13.14, 12.79 & 12.49 *per cent*) by the SERC during 2008-09 to 2010-11. Reduction in these losses is the most significant step towards making the Company financially self-sustaining. The importance of reducing losses can be gauged from the fact that a one *per cent* reduction in losses would have reduced the losses annually by ₹ 41.69^Δ crore. The main reasons for such high energy losses were insufficient transformation capacity, lengthy feeders, over loaded system, defective and electro-mechanical meters and theft of electricity, *etc.*

Inadequate transformation capacity

2.13.4 Transformer is a static device installed for stepping up or stepping down voltage in transmission and distribution of electricity. The energy received at high voltage (132 KV, 66 KV, 33 KV) from primary sub-stations is transformed to lower voltage (11 KV) at 33/11 KV sub-stations to make it usable by the consumers. In order to cater to the entire connected load, the transformation capacity should be adequate. The ideal ratio of transformation capacity to connected load is considered as 1:1. The table below indicates the

Δ Computed at one *per cent* of energy loss of 1438.60 MUs for 2010-11 *i.e.* 95.84 MUs x average realisation rate of ₹ 4.35 per unit.

details of transformation capacity at 33/11 KV sub-stations and connected load of the consumers in the State during the period 2006-11:

(In MVA)

Year	Transformation Capacity	Connected load	Gap in Transformation capacity	Ratio of Transformation capacity to connected load
2006-07	1048.37	3368	2319.63	0.31:1
2007-08	1101.79	3667	2565.21	0.30:1
2008-09	1146.63	3927	2780.37	0.29:1
2009-10	1182.41	4294	3111.59	0.28:1
2010-11	1228.26	4403	3174.74	0.28:1

(Source: Administrative Reports of the Company)

It can be seen from the table above that there was wide gap of transformation capacity which led to overloading of the system resulting in frequent trippings[^] and adverse voltage regulation with consequential higher quantum of energy losses.

Performance of Distribution Transformers

2.13.5 The SERC fixed the norm of failure of Distribution Transformers (DTRs) in its Standards of Performance Regulations, 2005. The details of norms fixed, actual DTRs failed and the expenditure incurred on their repairs is depicted in the table below:

Sl.No.	Particulars	2006-07	2007-08	2008-09	2009-10	2010-11
1.	Existing DTRs at the close of the year (in Number)	19181	19907	20572	21302	22472
2.	DTR Failures (in Number)	928	1312	822	675	941
3.	Percentage of failures	4.84	6.59	4.00	3.17	4.19
4.	Norm allowed by SERC (in percentage)	2.00	2.00	2.00	2.00	2.00
5.	Excess failure percentage over norms (3-4)	2.84	4.59	2.00	1.17	2.19
6.	Number of DTRs failed in excess of two <i>per cent</i> norms	544	914	411	249	492
7.	Estimated expenditure on repair of failed DTRs in excess of norms (₹ in crore)	4.47	5.05	4.64	3.51	5.90

(Source: Data supplied by the Company)

[^] 1,32,695 trippings for 58,527 hours were reported during the audit period under Chief Engineer (Op) North Zone, Dharamshala and Central Zone, Mandi.

It may be seen from the above table that the failure rate of DTRs was in excess of the norms fixed by the SERC in all the five years from 2006-07 to 2010-11. During 2007-08 excess failure rate of transformers was as high as 6.59 per cent. Failure of DTRs could have been minimised by taking adequate steps for preventive maintenance and avoiding over-loading of the same. Cause-wise analysis of failure of DTRs could not be done due to the fact that in most of the cases the reasons for failure were recorded as “due to internal fault”.

Higher repair cost of DTRs

2.13.6 The repair cost incurred by the Company on distribution transformers during the review period is tabulated below:

Sl. No.	Particulars	2006-07	2007-08	2008-09	2009-10	2010-2011
1.	Number of transformers repaired	1032	694	869	720	846
2.	Direct Cost (₹ in crore)	4.31	3.69	4.69	3.95	5.78
3.	Indirect cost (cost of supervisory staff and administrative cost) (₹ in crore)	3.32	3.57	4.62	5.59	5.54
4.	Total repair cost (₹ in crore)	7.63	7.26	9.31	9.54	11.32
5.	Cost of new transformers (₹ in crore)	8.04	5.24	7.43	7.39	9.05
6.	Excess repair cost (₹ in crore)	(-) 0.41	2.02	1.88	2.15	2.27

(Source: Data supplied by the M&T wing)

Against the repair cost of ₹ 45.06 crore incurred on 4,161 transformers, the cost of same number of new transformers would have been ₹ 37.15 crore.

It may be seen from the above table that the repair cost of damaged DTRs (25 KVA to 250 KVA) after including supervisory and administrative costs was very high. Against the repair cost of ₹ 45.06 crore incurred on the repair of 4,161 transformers the cost of same number of new transformers would have been ₹ 37.15 crore. The Company had not analysed the reasons for abnormally high repair cost so as to reduce the same. Audit noticed that the higher repair cost was due to excess supervisory staff and shortfall in repair of available DTRs during the last five years ending March 2011.

Capacitor Banks

2.13.7 Capacitor bank improves power factor by regulating the current flow and voltage regulation. In the event of voltage falling below normal, the situation can be set right by providing sufficient capacity of capacitor banks to the system as it improves the voltage profile and reduces dissipation of energy

to a great extent thereby saving loss of energy. The position as regards capacitor banks is shown in the **Annexure 9**.

Against the planned addition of 127 MVAR capacitor banks the Company had not installed any capacitor bank during the last five years ending March 2011. Therefore, the Company was deprived of the benefit of saving in losses of ₹ 1.13 crore. Further the Company had not fixed any target for addition of capacitor banks during the year 2006-07 to 2008-09.

Reactive Power

2.13.8 As per the Indian Electricity Grid Code (effective from April 2006), beneficiaries are expected to provide local Voltage Ampere Reactive (VAr) compensation so that they do not draw VAr from the EHV grid. To discourage VAr drawals by beneficiaries, VAr exchanges with Inter State Transmission System shall be priced as follow:

- The beneficiary pays for VAr drawal when voltage at the metering point is below 97 per cent.
- The beneficiary gets paid for VAr drawal when voltage is above 103 per cent.

Non-maintenance of required voltage limits resulted in avoidable payment of reactive energy charges of ₹ 2.76 crore.

In order to avoid payment of reactive energy charges, voltage was required to be maintained within the prescribed limit by installing and effectively operating shunt capacitors. Audit noticed that out of 805.53 MVAR capacitors installed in the system of the Company, 97.1 MVAR capacitors were lying defective (March 2011) due to which the voltage could not be maintained within the prescribed limit. Non-maintenance of required voltage limits resulted in avoidable payment of reactive energy charges of ₹ 2.76 crore between April 2006 and March 2011.

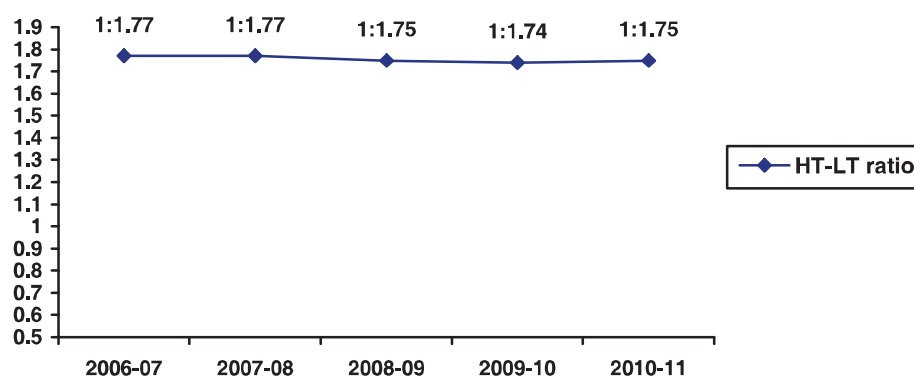
Commercial losses

2.13.9 The majority of commercial losses relate to consumer metering and billing besides pilferage of energy. The observations relating to commercial losses are discussed below:

Implementation of LT less system

2.13.10 High voltage distribution system is an effective method of reduction of technical losses, prevention of theft, improved voltage profile and better consumer service. The GoI had also stressed (February 2001) the need to adopt Low Tension (LT) less system of distribution through replacement of existing LT lines by HT lines to reduce the distribution losses.

The HT-LT ratio during the audit period is depicted in the graph below:



(Source: Data supplied by the Company)

It may be seen from the above graph that the HT/LT ratio ranged between 1:1.74 and 1:1.77 during the last five years ending March 2011 against the ideal ratio of 1:1.

High incidence of theft

2.13.11 Substantial commercial losses are caused due to theft of energy by tampering of meters by the consumers and unauthorised tapping/hooking by the non-consumers. As per Section 135 of Electricity Act, 2003, theft of energy is an offence and punishable under the Act. The number of checking, theft cases, assessed amount and amount realised there against are given in **Annexure-10**, which show that the number of checking of consumers premises is in decreasing trend (54.93 *per cent*) from 3,796 in 2006-07 to 1,711 in 2008-09 except 3,295 in 2009-10. As theft cases increased (86.39 *per cent*) to 1,027 in 2009-10 against 551 noticed during 2006-07, there is an imperative need for increasing the number of checking to curb the theft of energy.

Performance of flying squads

2.13.12 In order to minimise the cases of pilferage/loss of energy and to save the Company from sustaining heavy losses on this account, section 163 of Electricity Act, 2003, provides that the licensee may enter in the premises of a consumer for inspection and testing the apparatus. Accordingly, three flying squads under the control of CE (Commercial) have been formed (2001-2002) to check at least 3,600 connections of all categories of consumers in a year against the then total number of 15.25 lakh consumers (0.23 *per cent* of the total number of consumers). Though the number of consumers had increased to 19.18 lakh in March 2010, the Company did not consider suitable revision of the norms. Audit noticed that there was shortfall in the number of

consumers checked as compared to the norms during the four year period ending 31 March 2011 as per details given in the following table:

Sl. No.	Year	Total number of consumer	Number of consumers required to be checked [£]	Number of consumers checked	Percentage shortfall in checking	Assessed amount (₹ in crore)
1	2006-07	17,99,271	4,138	3,796	8.26	0.23
2	2007-08	18,41,695	4,236	3,074	27.43	0.94
3	2008-09	18,74,314	4,311	1,711	60.31	1.05
4	2009-10	19,17,689	4,411	3,295	25.30	0.96

(Source: Data supplied by the Company)

As may be seen from the above table, the percentage of shortfall in checking by the raid teams ranged between 8.26 *per cent* and 60.31 *per cent* during the last four years ending March 2010.

The HPERC in its tariff order for 2006-07 also directed to strengthen its existing flying squads network. However, the Company did not initiate any action to strengthen the flying squad network so far (June 2011).

Billing Efficiency

2.14 As per procedure prescribed in the Commercial and Revenue Manual, the Company is required to take the reading of energy consumption of each consumer at the end of the notified billing cycle. After obtaining the meter readings, the Company issues bills to the consumers for consumption of energy. Sale of energy to metered categories consists of two parts viz., metered and assessed units. The assessed units refer to the units billed to consumers in case meter reading is not available due to meter defects, door lock, *etc.* Billing of all the consumers is being done at sub-division/division/circle level. Domestic consumers are being billed on monthly, bi-monthly and tri-monthly basis, while other consumers billed on monthly basis.

The efficiency in billing of energy lies in distribution/sale of maximum energy by the Company to its consumers and realise the revenue in time.

£ Computed with reference to 0.23 *per cent* fixed for the year 2001-02.

Instances of undue favour to consumers in various forms noticed in audit are discussed hereunder:

Non-recovery of Lower Voltage Supply Surcharge

LVSS of ₹ 2.06 crore was not recovered from the consumers as per provisions of the tariff.

2.14.1 As per Schedule of Tariff, consumers availing electricity supply at voltage lower than the “Standard Supply Voltage,” a Lower Voltage Supply Surcharge (LVSS) at a specific rate (ranging from five to two *per cent*) depending on supply voltage shall be charged. Test check of records of 47 units revealed that some industrial consumers had availed supply on lower voltage than the standard voltage fixed by the Company/SERC but LVSS of ₹ 2.06 crore was not recovered from the consumers as per provisions of the tariff.

Short levy of energy charges

2.14.2 According to clause 4.4.8 of Himachal Pradesh Electricity Supply Code, 2009 effective from May 2009, in case of defective meter, the consumer shall be billed for the period on the basis of average consumption of previous six months prior to the date of meter becoming defective and in the absence of consumption of previous six months, average of next six months should be considered.

It was observed that in six^f Sub-divisions test checked, energy meter of ten consumers became defective from time to time. However, the sub-divisions billed the consumers either incorrectly or billed for lesser amount during the period (December 2006 to May 2011) the meters remained defective in contravention to the *ibid* instructions. This resulted in loss of revenue of ₹ 46.05 lakh.

Non-levy of initial/Additional Security

2.14.3 As per Security Regulations, 2005 and supply code, 2009, the consumer is required to deposit initial security before the release of connection. A security deposit to cover the estimated power consumption for a month/two months based on billing cycle was to be determined at the time of release of connection and to be reviewed every year. In case, the consumer fails to deposit the additional security, the supply of the defaulting consumers was to be disconnected.

Initial security of ₹ 1.76 crore and the additional security of ₹ 2.29 crore was not recovered from the consumers.

A test check of records of six operation circles^ψ revealed that initial security was not recovered to the extent of ₹ 1.76 crore from 1,964 consumers of various categories. Further, the additional security amounting to ₹ 2.29 crore assessed during 2008-09 and 2009-10 (based on average monthly consumption) in respect of three units (Operation Circle Una, ED Nahan and Parwanoo) was not recovered from 46 consumers in compliance with the codal provisions *ibid*. Thus, failure of the concerned units in not following the regulations strictly as issued from time to time resulted in non-recovery of amount.

^f Dharmshala –II, Khalini, Dharampur, Panchrukhi, Sarahan and Kala Amb.
^ψ Mandi, Bilaspur, Hamirpur, Kangra, Rohroo and Rampur.

Non-levy of electricity duty at revised rates

2.14.4 As per Electricity Duty Act, 2009, the electricity duty was leviable on energy charges at specific rate ranging between 3 and 13 *per cent* for different categories of consumers. The rates in respect of medium (up to 100 KW) and large supply (above 100 KW) consumers were revised (September 2009) from 13 to 15 *per cent* and for large supply consumers the rates were further revised (July 2010) from 15 to 20 *per cent*. It was noticed that in 45 sub-divisions electricity duty was not recovered/levied at revised rates. The main reasons for non-recovery of ED at the revised rates were attributed to delay in receipt/non-receipt of circulars by the field units. Further, there is no system in place to ensure timely communication of circulars to all the field units. This resulted in short recovery of ₹ 1.79 crore during the period from September 2009 to March 2011.

Non-loading of data through Meter reading instrument (MRI)

2.14.5 Schedule of tariff applicable from time to time provided for levy of energy charges at different rates for energy consumed during normal, night and peak hours, besides penalty on overdrawl of power during peak hours. In order to record all these parameters, time of day/electronic energy meters compatible for MRI to record half hourly energy consumption from 00 hours to 24.00 hours have been installed on the premises of the consumers. However, in two zones[▲] the data in respect of 4,718 consumers (out of total 7,317, having connected load more than 20 KW, was not being downloaded through MRI. Consequently, the violation of contract demand could not be ascertained and penalty for the same, if any, remained un-recovered.

2.14.6 Further a test check in Electrical Division (Recong Peo) under South Zone, Shimla revealed that no MRI data was being downloaded in respect of consumers having connected load above 20 KW (92 consumers) owing to non-availability of MRI. Scrutiny of records (log sheets maintained at Nathpa Sub-station) of sub-division Tapri under the division revealed that one consumer had drawn load over and above the contract demand ranging between 619 KVA and 4,488 KVA during June 2007 to March 2010. After being pointed out (July 2010) by Audit, an amount of ₹ 1.26 crore was recovered (November 2010 & February 2011) from the consumer as per Company's revised calculation.

Under billing

2.14.7 In order to overcome the shortage of power due to damage (August 2009) of 220/66 KV, 80/100 KVA transformer installed in Katha sub-station, Barotiwala, the Company allowed five[^] industrial consumers to inject power generated through D.G. sets installed at their premises to its system.

▲ Central zone, Mandi & North zone, Dharamshala.

^ M/s Vardhman, M/s Birla Textile, M/s Unichem-II, M/s Unichem-II and M/s GPI Textile.

As per tariff orders issued by the HPERC from time to time, the energy charges from the consumers having connected load of above 20 KW are to be billed on kVAh basis.

Issue of bills to five industrial consumers based on kWh instead of kVAh resulted in under billing of ₹ 1.09 crore.

Audit observed that the Company while issuing energy bills for 44.40 MUs generated through DG sets, issued bills based on kWh* instead of billing unit kVAh@ to the consumers. As the units in kVAh works out to 49.33 MUs for 44.40 MUs generated in kWh, this resulted in under billing of 4.93 MUs (44.40 MUs/.90) valuing ₹ 1.09 crore.

Deficiency in Billing Software

2.14.8 Billing software introduced (August 2008) in 10 sub-divisions under (Operation) Circle Shimla had deficient provision for the recovery of demand charges from the consumers who had not declared the contract demand. In such cases, a provision for the recovery of demand charges should have been made as “Connected load (in KW)/0.90 x 80 per cent” as per schedule of Tariff. However, a provision was wrongly introduced in the software as “Connected load (in KW)/0.90/80 per cent x 90 per cent.

This had resulted in short recovery of demand charges of ₹ 0.75 crore during the period from August 2008 to April 2010.

Revenue collection efficiency

2.15 As revenue from sale of energy is the main source of income of company, prompt collection of revenue assumes greater significance. The salient features of the collection mechanism being followed by the company are as follows:

- Consumers may make payments of the bills by cash, cheques or by demand draft.
- Revenue billed in respect of HT services is collected at collection counters located at every sub-division office.
- In respect of LT services, electricity bills are generally collected by the revenue cashiers (RC) except in some areas where collection work is entrusted to certain private collection agencies.
- Industrial consumers are required to pay current charges within ten days from the date of delivery of the bills. The consumers of other categories are required to pay bills within 15 days, failing which the consumers are liable for payment of additional charges of one paisa per rupee per month of delay on the amount of the bill (excluding electricity duty/taxes) for the period of the delay.

* Kilo-watt-hours.

@ Kilo-volt-ampere-hours (computed at 0.9 power factor).

The table below indicates the balance outstanding at the beginning of the year, revenue assessed during the year, revenue collected and the balance outstanding at the end of the year during last five years ending 2010-11:

(₹ In crore)						
Sl.No.	Particulars	2006-07	2007-08	2008-09	2009-10	2010-11
1	Balance outstanding at the beginning of the year	189.00	189.59	225.35	256.11	322.18
2	Revenue assessed/Billed during the year	1369.75	1636.89	1960.11	2119.33	2525.29
3	Total amount due for realisation (1+2)	1558.75	1826.48	2185.46	2375.44	2847.47
4	Amount realised during the year	1369.16	1601.13	1929.35	2053.26	2495.41
5	Balance outstanding at the end of the year	189.59	225.35	256.11	322.18	352.06
6	Percentage of amount realised to total dues (4/3)	87.84	87.66	88.28	86.44	87.64
7	Arrears in terms of No. of months assessment	1.66	1.65	1.57	1.82	1.67

(Source: Data supplied by the Company)

We observed that:

As on 31 March 2011 an amount of ₹ 9.24 crore was due from disconnected services.

- The balance dues outstanding at the end of the year increased from ₹ 189 crore in the beginning of 2006-07 to ₹ 352.06 crore in 2010-11.
- Group-wise analysis of debts outstanding as on 31 March 2011 revealed that an amount of ₹ 9.24 crore was due from disconnected services.
- The balances outstanding include dues from private categories of consumers which increased from ₹ 140.14 crore in 2006-07 to ₹ 250.63 crore in 2010-11 and from Government/semi Government bodies it increased from ₹ 49.45 crore to ₹ 101.43 crore during the corresponding period.

Since the Company has means of disconnecting the services of defaulters, its collection efficiency of 88 *per cent* is not a good performance. We observed that the Company had not taken any action against the officers responsible for non-disconnection of the power supply of the defaulting consumers in time and non-filing of recovery suits against the defaulting consumers.

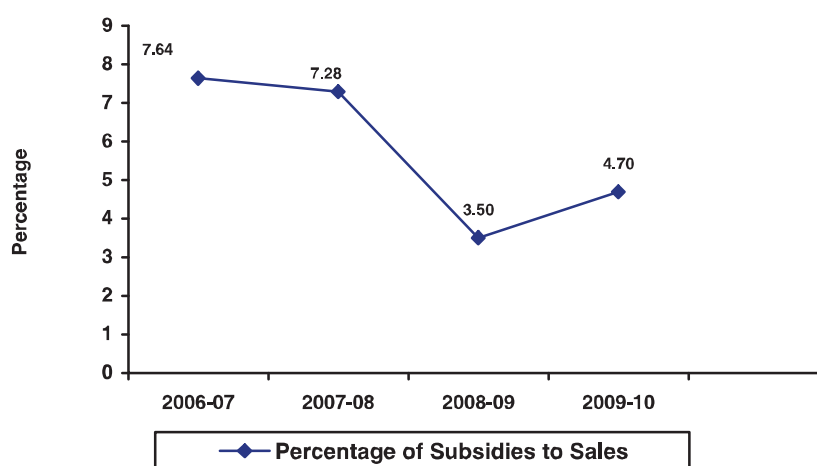
The Company needs to improve its collection efficiency by resorting to timely disconnection and should also take action against the officers who do not realise the dues in time.

Subsidy Support and Cross Subsidisation

2.16 There is an urgent need for ensuring recovery of cost of service from consumers to make the power sector sustainable. The State Government is providing subsidy with a view to ensure supply of power to specific category of consumers at concessional rates of tariff.

Subsidy Support

2.16.1 The graph below indicates revenue subsidy support from State Government (against concessional tariff) as a percentage of sales for the last four years ending 31 March 2010.



It is evident from the above that percentage of subsidy support from the Government decreased from 7.64 in 2006-07 to 3.50 in 2008-09. However, it increased to 4.70 per cent in 2009-10. Further, against the subsidy claim of ₹ 567.07 crore in respect of four years ending March 2010, only ₹ 556.47 crore was actually paid by the State Government as detailed below:

Particulars	₹ in crore			
	2006-07	2007-08	2008-09	2009-10
Opening balance	46.46	1.34	(-) 34.73	4.87
Add: Due from State Government during the year	101.35	131.93	141.60	145.73
Less: Received during the year	146.47	168.00	102.00	140.00
Closing balance	1.34	(-) 34.73	4.87	10.60

(Source: Data supplied by the Company)

It may be seen from the table above that the closing balance of subsidy receivable has increased over the last three years period (except 2007-08) indicating that the State Government has not been fully reimbursing the subsidy due in each year. The subsidy receivable from the State Government at the end of 2009-10 was ₹ 10.60 crore. This would not only adversely affect the financial health of the Company but also infringes the provisions of Section 65 of the Electricity Act, 2003 requiring the State Governments to pay the subsidy in advance.

Cross subsidisation

2.16.2 Section 61 of Electricity Act, 2003 stipulates that the tariff should progressively reflect the average cost of supply (ACOS) of electricity and also reduce cross subsidy in a phased manner as specified by the Commission. National Tariff Policy envisaged that the tariff of all categories of consumers should range within plus or minus 20 *per cent* of the ACOS by the year 2010-2011. The position as regards cross-subsidisation in respect of various categories of consumers is depicted in the table below:

Particulars	2006-07		2007-08		2008-09		2009-10	
Average cost of supply (ACOS)- (paisa per unit)	370		382		422		451	
Average Revenue from:	Paise per unit	Per cent - age of ACOS	Paise per unit	Per cent - age of ACOS	Paise per unit	Per cent - age of ACOS	Paise per unit	Per cent - age of ACOS
Domestic	229	61.89	235	61.52	261	61.85	262	58.09
Commercial	497	134.32	486	127.22	501	118.72	502	111.31
Industrial*	299	80.81	314	82.20	342	81.04	344	76.27
Irrigation/Agriculture	634	171.35	639	167.28	555	131.52	530	117.52
Others*	432	116.76	414	108.38	480	113.74	499	110.64

(Source: Compiled from balance sheet and tariff orders)

It may be seen from the above table that the cross subsidies to the domestic consumers were more than 20 *per cent* of the ACOS during the audit period. This category was cross subsidised by the commercial, irrigation/agriculture and other categories of consumers. Thus, the domestic consumers are largely benefited from the cross subsidisation at the cost of others.

There is a need to correct this imbalance by progressively and gradually reducing the existing cross subsidies limits.

♣ Including Public Water Works.
 • Including NDNC, Govt. Irrigation exceeding 20 KW, Public lighting, Bulk and Temporary connections, etc.

Consumer Satisfaction

2.17 One of the key elements of the Power Sector Reforms was to protect the interest of the consumers and to ensure better quality of service to them. The consumers often face problems relating to supply of power such as non-availability of the distribution system for the release of new connections or extension of connected load, frequent tripping on lines and/or transformers and improper metering and billing. The Company was required to introduce consumer friendly actions like introduction of computerised billing, online bill payment, establishment of customer care centers, *etc.* to enhance satisfaction of consumers and reduce the advent of grievances among them.

Audit observed that out of 51 divisions, computerised billing was being done only in 10 sub-divisions under two divisions. Further, the Company has not so far introduced the system of online bill payments. However, customers' care centre is functioning at head office Shimla since September 2008.

Redressal of Grievances

2.17.1 The HPERC specified the mode and time frame for redressal of grievance in Standards of Performance Regulations, 2005 in pursuance of the Electricity Act, 2003. The Commission had also prescribed the Standards of Performance for Company in which the time limit for rendering services to the consumers and compensation payable for not adhering to the same. The nature of services contained in the Standards *inter-alia* include line breakdowns, Distribution Transformer failures, period of load shedding/scheduled outages, voltage variations, meter complaints, installation of new meters/ connections or shifting thereof, *etc.*

During the years 2008-09 and 2009-10, 15.75 lakh complaints were received by the Company which were redressed within the time frame by the commission.

Energy Conservation

2.18 Recognising the fact that efficient use of energy and its conservation is the least-cost option to mitigate the gap between demand and supply, the GoI enacted the Energy Conservation Act, 2001. The conservation of energy being a multi-faceted activity, the Act provides both promotional and regulatory roles on the part of various organisations. The promotional role includes awareness campaigns, education and training, demonstration projects, R & D and feasibility studies. The regulatory role includes framing rules for mandatory audits for large energy consumers, devising norms of energy consumption for various sectors, implementation of standards and provision of fiscal and financial incentives.

Atal Bijlee Bachat Yojna (ABBY)

2.18.1 . The Government of Himachal Pradesh launched a scheme through Company titled “*Atal Bijlee Bachat Yojna*” to utilise the electricity so saved for the development of State besides claiming Carbon Credits[♣] under Clean Development Mechanism (CDM). Under the *yojna*, a pack containing four Nos. CFLs (2x15 Watts & 2x20 Watts) was to be distributed to each domestic consumer for replacement of equal number of conventional incandescent bulbs. In order to assess the quantum of saving in energy, separate electrical wiring for four points of CFLs was to be provided in the consumers premises for sub-metering the consumption of these four points by selecting a minimum of four/five consumers per sub-division (in all 1,000 consumers). We noticed that the CFLs were distributed to the consumers free of cost yet no assessment of saving in energy has been done despite incurring an expenditure of ₹ 65.12 crore. The Company had also not initiated any action to claim the benefit of CDM accrued on this account so far (June 2011).

Further, 64,363 packets valued at ₹ 2.68 crore could not be distributed to the consumers in seven units test checked in audit, as the Company had disallowed the same to defaulted consumers and also as a few consumers did not come forward to collect the CFLs. This had not only resulted in blocking of funds to that extent but the very objective of the scheme was defeated.

Energy Audit

2.19 A concept of comprehensive energy audit was put in place with the objective to identify the areas of energy losses and take steps to reduce the same through system improvements besides accurately accounting for the units purchased/sold and losses at each level. The main objectives of energy audit are as follows:

- better and more accurate monitoring of the consumption of electricity by consumers;
- elimination of wastages;
- reduction of downtime of equipment; and
- massive savings in operational costs and increase in revenue, *etc.*

A review of the energy audit reports/ returns during the audit period revealed that the main objective of energy audit was to identify the pockets having higher losses by installing energy meters on distribution feeders and DTRs. Test check in seven units revealed that out of total 4,259 DTRs, meters on 4,220 DTRs were installed. Out of 4,220 meters, 769 meters were defective, resultantly energy audit in respect of energy being supplied from 808 DTRs (39 un-metered and 769 defective) was not being done accurately.

♣ Under CDM mechanism, emission reduction projects in developing countries can earn certified emission reduction credits. These saleable credits can be used by industrialised countries to meet a part of their emission reduction targets under Kyoto Protocol.

Failure in achieving energy losses reduction targets contributed ₹ 68.67 crore to financial loss of the Company.

In four* units test checked, the energy losses on 11 KV feeders were ranging between 4.30 *per cent* and 34.66 *per cent* during the year 2009-10 against the ideal losses of four *per cent* fixed by the CEA. Further losses on DTRs (Distribution Losses) were ranging between 7.74 and 78.62 *per cent* during 2009-10 against the ideal losses of 7.50 *per cent* prescribed by CEA. This contributed ₹ 68.67* crore to overall financial loss of the Company during the period of audit.

Monitoring by top Management

2.20 The Power Distribution Company plays an important role in the State economy. For such a giant organisation to succeed in operating economically, efficiently and effectively, there has to be a Management Information System (MIS) for monitoring by top management. While reviewing the existing MIS for monitoring by top management, we observed that:

- The company sets the targets for addition in the infrastructure but the basis for the same were not available on record.
- The company while setting targets for addition in HT and LT lines, failed to visualise the achievement of ideal ratio of 1:1.
- The company had not developed programme for online access to its inventory in whole of the state to minimise the blockage therein.
- The company did not develop centralised system to monitor the loading position of individual sub-station/feeder.
- There exists no mechanism to review the division-wise physical progress of various schemes from time to time at Management level so as to initiate timely action to gear-up the progress.

Conclusion

Performance audit of distribution of power by the Company disclosed the following:

- **The Company failed to recover its cost of operation in 2007-08 and 2009-10 as per unit revenue earned by the Company was not sufficient to cover per unit cost. The accumulated losses of the Company increased by 61.49 *per cent* during 2006-10.**
- **Distribution capacity could not match with the pace of load growth.**

* Operational Circles Dalhousie, Solan, Nahan and Electrical Division, Reckong Peo.

♣ Losses in excess of prescribed limit of 4 and 7.5 *per cent* multiplied by average per unit sale rate.

- **The Company had incurred huge expenditure on purchase of power under unscheduled interchange and short-term agreements due to ill planning of purchase under long-term agreements.**
- **The Company was not able to derive full benefits of the schemes introduced for strengthening of distribution system and failed to implement them economically, efficiently and effectively.**
- **The Company failed consistently to achieve the performance parameters regarding damage rate of distribution transformers and addition of capacitor banks.**
- **The Company failed to take action for non-disconnection of power supply to defaulting consumers and non-filing of recovery suits against them.**
- **The domestic consumers are largely benefited from cross subsidisation at the cost of other categories of consumers.**

Recommendations

The company needs to:

- **make the plans to bring out the system upgradation, reduction of T&D losses and power thefts to generate sources of additional revenue to make the power distribution commercially viable;**
- **review physical and financial progress of incomplete schemes periodically for remedial action and to add appropriate/planned capacity;**
- **explore the sources of availability of power at concessional rates and consider the desirability to enter into long-term power purchase agreements to meet shortages of power in the State;**
- **strive to achieve performance parameters and targets set by HPERC, failing which accountability should be fixed against officials at fault;**
- **percentage of vigilance/flying squad checks should be improved;**
- **ensure downloading of energy data of all consumers having load in excess of 20 KW through MRI for proper implementation of two part tariff; and**
- **take adequate and effective steps for recovery of dues from the defaulting consumers.**

The matter was reported to the Government/Company in August 2011; their reply is awaited (October 2011).