CHAPTER II

2. Performance Review relating to Government Companies

2.1 Power Distribution Utilities of Karnataka

Executive summary

The distribution system of the power sector constitutes the link between the generation and the consumer. The efficiency of power sector is judged on the basis of performance of distribution network. The reforms in power distribution sector, spelt out in the National Electricity Plan (NEP), focus on system up-gradation, controlling and reduction of Transmission & Distribution (T & D) losses, measures to reduce power thefts and making the sector commercially viable; besides, on framing strategies to generate more financing resources.

Power sector reforms in Karnataka were initiated with the enactment of the Karnataka Electricity Reforms Act in 1999. The regulatory body, Karnataka Electricity Regulatory Commission (KERC) was established in November 1999.

Four Electricity Supply Companies (ESCOMs), viz., Bangalore Electricity Supply Company Limited (BESCOM), Mangalore Electricity Supply Company Limited (MESCOM), Hubli Electricity Supply Company Limited (HESCOM), and Gulbarga Electricity Supply Company Limited (GESCOM) were formed in June 2002. Bifurcating MESCOM, Chamundeshwari Electricity Supply Corporation Limited (CESC) was formed (April 2005). The five ESCOMs, together with a small co-operative society (HRECS), are entrusted with the distribution function in the State.

Audit objectives

The performance review of the working of ESCOMs was conducted to ascertain whether the ESCOMs were able to adhere to the aims and objectives stated in the National Electricity Plan / National Electricity Policy. The objectives of the performance review were to assess whether the network planning and execution was adequate and effective. The implementation of the Central and State schemes, additions to distribution network, operational, billing and collection efficiency, energy conservation and monitoring were also assessed.

Audit findings

Distribution network planning

The transformer capacity has to be enough to meet the connected load. The ideal ratio between connected load and transformer capacity is 1:1. Looking at the trend in growth of connected load during the period 2007-11, we observed that transformer capacity in BESCOM, GESCOM, HESCOM and MESCOM would not meet the ideal ratio by 2012. While the situation in CESC is promising, the situation in HESCOM could be serious, as the addition to connected load was almost twice the increase in transformation capacity during 2007-11. The objective of having a reliable distribution network to provide quality power supply for all by 2012, as per the prime objective of the National Electricity Policy, is doubtful.

Rural electrification

Government of India (GoI) had launched (April 2005) 'Rajiv Gandhi Grameen Vidyutikaran Yojna (RGGVY)' with the goal of electrifying all un-electrified villages and providing access to electricity to all households in five years.

Against 28,191 villages selected for intensive electrification in the State, 23,607 villages were electrified as at March 2011. Further, against the targeted electrification of 8.78 lakh households Below Poverty Line (BPL) and 10.38 lakh other than BPL households, ESCOMs electrified 7.86 lakh BPL households (89.52 per cent) and 1.30 lakh other than BPL households (12.53 per cent) respectively up to the end of March 2011.

Restructured Accelerated Power Development Reforms Programme (R-APDRP)

GoI had launched (July 2008) R-APDRP with a view to achieve loss reduction through establishment of reliable and automated systems for collection of accurate base line data and adoption of Information Technology in the areas of energy accounting, besides distribution strengthening projects.

GoI provided loan for establishment of IT enabled system, which was convertible into grant on completion of the system. The pilot projects were programmed to be completed by December 2010. The implementation of the scheme in 100 identified towns also was lined up for completion by February 2012. The agency appointed for implementation of IT enabled system had not yet (September 2011) completed even the pilot projects and, hence the chances of conversion of loan of ₹391.71 crore into grant were remote.

Transmission, Distribution and Aggregate Technical and Commercial (AT&C) losses

The percentage of transmission loss was higher than that prescribed by KERC in all the years (except in MESCOM) leading to loss of revenue of ₹1,404.27 crore.

Declining trend in distribution losses was observed and the overall percentage of distribution losses decreased from 25.50 per cent in 2006-07 to 16.54 per cent in 2010-11.

As at end of 2010-11, BESCOM and MESCOM were able to bring down the AT&C losses below the 15 per cent norm envisaged.

KERC allowed an incentive of ₹ 64.23 crore and ₹9.77 crore to BESCOM and MESCOM for 2008-09 for reduction in distribution losses. Similarly, incentive of ₹24.72 crore and ₹10.17 crore was allowed for 2009-10 to CESC and HESCOM respectively. KERC imposed penalty of ₹ 3.82 crore on HESCOM for 2008-09 and ₹8.75 crore on GESCOM for 2009-10 for exceeding the upper limits of distribution losses.

The percentage of failures of distribution transformers was higher than the norms prescribed by KERC in CESC and GESCOM.

Against the norm of 1:1 for HT: LT ratio prescribed by KERC, the actual ratio ranged between 0.43:1 and 0.47:1.

Metering

ESCOMs (except MESCOM) could not achieve any significant progress in metering of IP sets. Progress with regard to metering of BJ/KJ installations in HESCOM and GESCOM was much below par.

Purchase of power

Power requirement of the State is determined by the Energy Department on the basis of the requirements of ESCOMs subject to approval by KERC. On behalf of the ESCOMs, PCKL arranges for short-term power purchases, either through energy exchange or through bidding process. The power so procured is distributed amongst ESCOMs as per the share allocated by the State Government.

Reduction in availability of long-term power was observed in 2010-11 as compared to 2006-07. The reasons attributed were problems in Raichur Thermal Power Station and Bellary Thermal Power Station. This forced the ESCOMs to resort to short term purchases and drawal of power by paying Unscheduled Interchange charges. During 2008-11 ESCOMs incurred extra expenditure of ₹793.93 crore on energy purchases at UI charges and ₹ 3,058.93 crore on short term energy purchases.

Cross subsidy and subsidy support

The level of cross subsidy was beyond the limits of plus or minus 20 per cent of the ACOS prescribed in the National Tariff Policy in agricultural, domestic, commercial establishments, motive power and temporary connection category consumers.

The Government reimbursed electricity charges of KJ/BJ consumers/IP set (up to 10 HP) consumers. The re-imbursement received on these counts was ₹87.27 crore in 2006-07, which increased to ₹3,819.66 crore in 2010-11.

Despite cross subsidization and re-imbursement by the Government, the cost of supply was not fully recovered by the ESCOMs. The State Government bridged the difference by way of further financial support, known as gap subsidy. The gap subsidy released during 2006-07 was ₹1,696.38 crore and during 2010-11 was ₹433 crore.

The ESCOMs would have suffered heavy losses in all the years without subsidy support. The profits in 2006-07 and 2007-08 were because of gap subsidy. Despite substantial increase in subsidy the ESCOMs incurred losses in 2008-09 to 2010-11, mainly due to purchase of energy at high cost.

Inspite of the objective of releasing scarce Government resources to other areas of greater priority envisioned in the Reform Policy (1997) in power sector of the State Government, the Government subsidy showed no let up; in fact, it has been increasing over the years from 2006-07 to 2010-11.

Tariff filing

ESCOMs are required to file expected revenue from charges with KERC each year 120 days before the commencement of the subsequent financial year. ESCOMs filed tariff review

petitions belatedly in the years 2009-10 and 2010-11. This had resulted in delayed implementation of tariff orders. Consequently, they could not generate revenue to the tune of ₹941.08 crore.

Financial management

KERC disallowed an expenditure of ₹534.05 crore claimed by ESCOMs towards interest on belated payment of energy bills stating that interest on working capital was allowed separately. KERC also disallowed operation and maintenance charges incurred beyond the norm and excess interest on security deposits, which amounted to ₹308.79 crore.

The electricity tax collected from consumers is required to be remitted to the State Government. The ESCOMs were not regular in payment of electricity tax for which a total interest/penalty of ₹27.21 crore was levied on the ESCOMs.

The dues from consumers increased from ₹3,998.48 crore in 2006-07 to ₹6,378.20 crore in 2010-11. The arrears in terms of months' demand increased year after year. At the end of March 2011, the outstanding amount, pending collection represented 2.81 months' revenue demand in MESCOM, while it was 8.98 months' revenue demand in GESCOM, indicating poor collection efficiency. Further, an amount of ₹217.61 crore was due from permanently disconnected installations.

Irregularities in execution of improvement and extension works were noticed in Kolar and Indi (Bijapur) divisions.

Conclusion and recommendations

The generation of power in the State is insufficient to meet the demand. Absence of committed long-term power supply and increased demand had forced the ESCOMs to resort to short-term power purchases at high cost.

The trend in additions to connected load and transformation capacity during 2007-11 indicate that the distribution network may not be adequate to provide 'power for all by 2012'.

Huge receivables forced the ESCOMs to resort to borrowings.

Aggregate technical and commercial losses and failure of transformers showed a decreasing trend during the last five years.

Energy conservation measures are presently in a nascent stage and need thrust.

The ESCOMs do not have a proper MIS system to generate and supply various information required for efficient functioning of the organisation.

The review contains the following recommendations:

- ***The State has to evolve an integrated energy policy to attain the objective of power for all and also to improve the operational/ financial performance of the ESCOMs.***
- ***The distribution network/infrastructural facilities need to be augmented.***
- ***Providing quality power supply in rural areas and regularisation of unauthorised IP sets need to be accorded priority.***
- ***The aggregate technical and commercial losses have to be reduced further by undertaking energy audit at distribution transformer level, metering of distribution transformers and installations, preventing thefts and improving the billing and collection.***
- ***Efforts need to be made to adhere to the norms and directions prescribed by KERC of failure of transformers and adequacy of HT:LT ratio.***
- ***Efforts should be made to bring down cross subsidy on the lines suggested in the National Electricity Policy.***
- ***Allocation of scarce budgetary resources to meet the gap between revenue and expenditure of the ESCOMs needs a renewed strategy.***
- ***Effective action needs to be taken to realise outstanding dues to improve the financial position and reduce dependence on Government support.***
- ***ESCOMs should give priority to implementation of demand side management and energy conservation measures.***

Introduction

2.1.1 Electricity is an essential requirement to improve the living condition of the people of the country. In fact, it has become a basic human need. It is a critical infrastructure on which the socio-economic development of the country depends. Supply of electricity at reasonable rate to rural India is essential for overall development. Availability of reliable and quality power at competitive rates makes the industry globally competitive and enables it to exploit the tremendous potential of employment generation. Service sector has made significant contribution to the growth of our economy. It is therefore equally important that quality supply of the electricity is provided to service sector.

Recognizing that electricity is one of the key drivers of rapid economic growth and poverty alleviation, the nation has set itself the target of providing access to power to all households.

Major responsibility for achieving the key parameters of the above said importance of electricity devolves on the distribution sector. The distribution system in power sector constitutes the final link between the generation and the consumer. The National Electricity Plan (NEP) proposed reforms in the power distribution sector with focus on system upgradation, control and reduction of Transmission & Distribution (T & D) losses/power thefts and making the sector commercially viable, besides framing financing strategies to generate adequate resources. The NEP further aimed to achieve conservation strategy to optimize utilisation of electricity with focus on Demand Side Management (DSM) and Load Management. To achieve the above objectives, power distribution utilities need to make a financial turnaround to make them commercially viable.

In this review, it is proposed to analyse how far the power distribution utilities in Karnataka planned its operations to achieve the above objectives and the problems encountered during the last five year period from 2006-07 to 2010-11.

Power sector reforms in Karnataka

2.1.1.1 The power sector reforms in Karnataka were initiated with the enactment of the Karnataka Electricity Reforms Act in 1999. The Karnataka Electricity Regulatory Commission (KERC) was established in November 1999 to regulate the power sector in the State. The erstwhile Karnataka Electricity Board (KEB) was corporatised and unbundled (August 1999) into Karnataka Power Transmission Corporation Limited (KPTCL) and Visvesvaraya Vidyuth Nigam Limited (VVNL). KPTCL was vested with transmission and distribution functions. VVNL was entrusted with generating power from small generating stations[15].

[15] **Capacity totaling to 354.32 Mega Watt (MW), comprising of 127.92 MW Diesel / Low Sulphur Heavy Stock (LSHS) power station at Bangalore and four hydro stations of 226.40 MW.**

The distribution activity of KPTCL was split on geographical basis and four Electricity Supply Companies (ESCOMs) were formed in June 2002. The four ESCOMs were: (1) Bangalore Electricity Supply Company Limited (BESCOM), (2) Hubli Electricity Supply Company Limited (HESCOM), (3) Gulbarga Electricity Supply Company Limited (GESCOM) and (4) Mangalore Electricity Supply Company Limited (MESCOM). Another ESCOM *viz.*, Chamundeshwari Electricity Supply Corporation Limited (CESC) was formed (April 2005) by bifurcating MESCOM. The five ESCOMs were entrusted with distribution function[16] in the State. KPTCL was responsible for bulk purchase, transmission and supply of power to the ESCOMs.

2.1.1.2 The Power Company of Karnataka Limited (PCKL) was formed (April 2007) as a special purpose vehicle to facilitate capacity addition, to carry out preliminary activities pertaining to setting up of power projects and to carry out tariff-based competitive bidding process on behalf of ESCOMs.

Vital parameters of Electricity Supply in Karnataka

2.1.1.3 The ESCOMs in the State had sold 28,452.82 Million Units (MUs) of energy during 2006-07, which increased to 37,215.10 MUs in 2010-11, *i.e.,* an increase of 30.80 *per cent*. As on 31 March 2011, the ESCOMs had a distribution network of 6.81 lakh Circuit Kilometers[17] (CKM) of power lines, 330 sub-stations[18] and 3.80 lakh transformers[19] of various categories. The total number of consumers of the ESCOMs was 1.75 crore as at end of March 2011. The turnover of the ESCOMs was ₹ 16,172.99 crore[20] in 2010-11, which was equal to 38.97 *per cent* and 4.25 *per cent* of the total turnover of State PSUs' and State Gross Domestic Product (advance estimates at current prices) respectively. The number of employees in all ESCOMs added up to 34,703 as on 31 March 2011.

Scope and methodology of audit

2.1.2 The present performance audit, conducted during February 2011 to September 2011, covered the functioning of the ESCOMs from 2006-07 to 2010-11. The review mainly deals with Network Planning and Execution, Implementation of Central Schemes, Operational Efficiency, Billing and Collection Efficiency, Financial Management, Consumer Satisfaction, Energy

16 A society called Hukkeri Rural Electric Cooperative Society (HRECS), which distributed electricity in Hukkeri taluk and some villages of Belgaum, Gokak and Chikkodi taluks in Belguam district existed prior to electricity reforms. After the initiation of power sector reforms, HRECS was issued a distribution license under the provisions of the Electricity Act 2003.

17 LT : 4.64 lakh CKM and HT : 2.17 lakh CKM as given in Annexure 8.

18 In respect of BESCOM and CESC, the energy flows directly from sub-stations owned and operated by KPTCL to 11 KV substations/feeders. As such these two ESCOMs do not have their own sub-stations (except 10 number of 33/11KV sub-stations transferred by KPTCL to CESC during unbundling).

19 Details of ESCOM-wise transformers are given in Annexure 9(a).

20 Excluding gap subsidy of ₹ 433 crore.

Conservation and Monitoring. The audit examination involved scrutiny of records in the head offices of ESCOMs and in 25 of the 76 divisions of the five ESCOMs. The probability proportion to size method with estimated expenditure (in which the probability of selection for a sampling unit is directly proportional to a size measure) of the distribution network during the period 2006-10 as size measure was adopted for selection of the divisions.

The methodology adopted to attain the audit objectives with reference to the audit criteria consisted of explaining the audit objectives to the top management, scrutiny of records at head offices and selected divisions, 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.

Performance review in power distribution sector

2.1.2.1 A comprehensive review on 'Rural Load Management System' Scheme was included in the Audit Report (Commercial), Government of Karnataka of the Comptroller and Auditor General of India for the year ended 31 March 2010. The Report was under discussion in COPU and their recommendations are awaited (September 2011).

Audit objectives

2.1.3 The objectives of the performance review were to assess whether:

- aims and objectives of the National Electricity Policy were analysed and the plans to provide reliable and quality power supply were implemented;
- network planning and its execution was adequate and effective;
- the central schemes such as Restructured Accelerated Power Development and Reforms Programme (RAPDRP) and Rajiv Gandhi Grameen Vidyutikaran Yojna (RGGVY) were implemented efficiently and effectively;
- operational efficiency was achieved in meeting the power demand of the consumers in the State;
- billing and collection of revenue from consumers was efficient and effective;
- there was reduction in subsidy over the years and Union/State Government released subsidy in time;
- Annual Revenue Requirement (ARR) and tariff revision petition was submitted timely to ensure adequacy of tariff to cover the cost of operations and maintain the cross subsidisation at prescribed level;
- effective system was in place to assess consumers satisfaction and redressal of grievances;
- the loss reduction techniques and energy conservation measures were undertaken in line with the National Electricity Plan (NEP);

- effective energy conservation measures were undertaken; and
- effective monitoring system was in place and the same was being utilised in review of overall working.

Audit criteria

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

- National Electricity Plan/Policy, plans and norms concerning distribution network of ESCOMs and planning criteria fixed by the Karnataka Electricity Regulatory Commission (KERC);
- Standard procedures for award of contract with reference to principles of economy, efficiency and effectiveness;
- Financial Restructuring Plan;
- Norms prescribed by various agencies with regard to operational activities;
- Norms of technical and non-technical losses;
- Guidelines and directions of Central Electricity Regulatory Commission (CERC) and KERC;
- Terms and conditions contained in the schemes introduced by Central and State Governments;
- Comparison with best performers in the regions/all India averages;
- Electricity Supply and Distribution (ES&D) Regulations of the ESCOMs; and
- Provisions of Electricity Act, 2003.

Audit findings

2.1.5 Audit explained the objectives of the performance review to the Company in an 'Entry Conference' held on 15 February 2011. The audit findings were reported to the Company between February and June 2011 and discussed in an 'Exit Conference' held on 7 September 2011. The exit conference was attended by the Principal Secretary, Energy Department, Government of Karnataka (GoK) and the Managing Directors of all the ESCOMs. The views of the Government/Management, wherever received, have been considered while finalising the review. The audit findings are discussed in subsequent paragraphs.

Distribution network planning

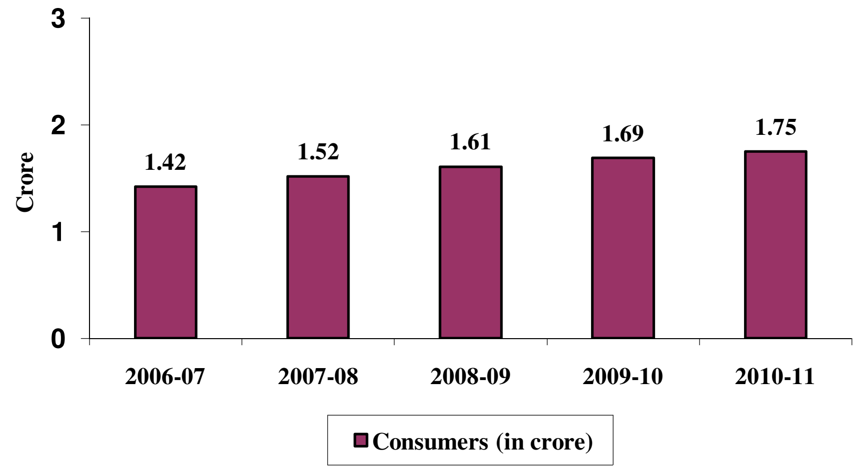
2.1.6 The National Electricity Policy was evolved for achievement of the following aims and objectives.

- Access to electricity –Available for all household in next five years from 2005.
- Supply of reliable and quality power of specified standards in an efficient manner and reasonable rates.

Planning is an essential element in creation of infrastructural facilities for efficient distribution of electricity to cover so as to cover maximum population in the State. Besides the upkeep of the existing network and additions to distribution network are planned keeping in view the demand/connected loads, anticipated new connections and growth in demand. The ESCOMs submit Capital Investment Plans (Capex Plans) to the KERC while projecting the Annual Revenue Requirement. The major components of the outlay include normal development and system improvement works, besides rural electrification and strengthening of information technology (IT) enabled systems.

2.1.6.1 The growth in consumer base[21] during the review period is depicted in the bar diagram below:

Graph 1



The connected load[22] and the transformation capacity to meet the connected load in respect of ESCOMs and the estimated growth by 2012 are given in the

[21] The LT and HT consumers (year-wise) are given in Annexure 10(a).
[22] The ESCOM-wise details are given in Annexure 10(b).

table below:

Table 1 **Capacity in Mega Volt Ampere (MVA)**

	End of 2006-07		End of 2010-11					Estimated for 2011-12	
	Transfo-rmation Capacity	Connec-ted load	Transfor-mation Capacity	Connec-ted load	Average percentage increase in transfor-mation capacity during 2007-11	Average percen-tage increase in connect-ed load during 2007-11	Estimated transfor-mation capacity by 2012	Estima-ted connect-ed load by 2012	Excess (+) / Deficit (-) in connected load considering 1:1 ratio of transforma-tion capacity to connected load
BESCOM[23]	10052.87	9970.78	13421.07	13895.31	8.38	9.84	14263.12	14876.44	(-)613.32
CESC	2571.00	2178.90	3164.49	2766.41	5.77	6.74	3312.86	2913.29	399.57
GESCOM	2576.82	3427.07	3175.38	3963.98	5.81	3.92	3325.02	4098.21	(-)773.19
HESCOM	4906.47	5341.34	5729.66	7351.00	4.19	9.41	5935.46	7853.41	(-)1917.95
MESCOM	1902.97	2686.41	2399.23	3226.58	6.52	5.03	2523.30	3361.62	(-)838.32
	22010.13	**23604.50**	**27889.83**	**31203.28**	**6.68**	**8.05**	**29359.76**	**33102.97**	**(-)3743.21**

Source : Part of the data was provided by ESCOMs and part compiled by audit from ledgers, which is subject to confirmation.

A reliable distribution network to provide quality power supply for all by 2012 is doubtful as envisaged in the National Electricity Policy.

The ideal ratio between connected load and transformer capacity is 1:1. The additions to transformation capacity in BESCOM, CESC and HESCOM were not commensurate with the increase in connected load over the last four years (2007-11). There would be a gap between connected loads and transformation capacities at the end of 2011-12 in four ESCOMs (excluding CESC), with reference to the ideal ratio of 1:1. The data on connected load excludes unauthorised connections and hence the connected load could be more than what is presently assessed.

The shortage of adequate capacity for distribution would hamper the objective of providing 'Power for all by 2012' as envisaged in the National Electricity Policy. While the situation in CESC is promising, the situation in HESCOM could be serious, as the addition to connected load was almost twice the increase in transformation capacity during 2007-11.

Reference is also invited to Paragraph 2.1 of the Audit Report (Commercial), Government of Karnataka of the Comptroller and Auditor General of India for the year ended 31 March 2010, wherein it was pointed out that the State would not be able to meet the objective of 'Power for all by 2012' from the point of view of generation.

The inadequacy of the distribution network coupled with the deficit in generation of power to meet the demand could prove a dampener in achieving the main objective of providing 'Power for all by 2012'.

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[23] **The KERC in its tariff orders in 2009 and 2010 had observed that despite computerisation of billing activity, BESCOM was unable to furnish details of sanctioned load and slab-wise consumption accurately in its filings with the Commission and had directed BESCOM to improve its database and maintain consistency in the data furnished to the Commission.**

Distribution network planned and achieved

2.1.6.2 The particulars of distribution network planned and achievements there against in the State as per the limited data[24] furnished by the ESCOMs.

A total of 117 sub-stations were added in the three ESCOMs[25] during 2006-11. Capital Expenditure Plans, prepared at the beginning of the year by each ESCOM, included projections for additions to the distribution network. The Karnataka Electricity Regulatory Commission had observed in its various tariff orders (2009 and 2010) that the data on capital expenditure furnished by the ESCOMs were inconsistent and incomplete and contemplated imposition of penalty for non-furnishing of correct data. Penalty, however, was not levied. Audit was furnished (October 2011) with physical and financial achievements of capital budgets for five years in respect of HESCOM and for one year (2010-11) in respect of GESCOM and MESCOM. In view of the observation by KERC and non-availability of data for the review period in respect of all ESCOMs, the achievements of physical and financial targets for the distribution network could not be analysed in audit.

2.1.6.3 In order to assess whether the ESCOMs had adequate plans to provide reliable and quality power supply for all by 2012 as per the prime objective of the National Electricity Policy, the performance of the Central Schemes such as Rajiv Gandhi Grameen Vidyutikaran Yojna (RGGVY) aimed at providing access to electricity to all (free of charge to consumers coming under Below Poverty Line (BPL) category) and Restructured Accelerated Power Development Reform Programme (RAPDRP), aimed at bringing on improvement in the urban distribution sector, were analysed. In addition, specific schemes undertaken by the ESCOMs to provide assured power supply to consumers of Irrigation Pump sets were also reviewed. The findings are given in the succeeding paragraphs.

Implementation of Centrally Sponsored Schemes

Rajiv Gandhi Grameen Vidyutikaran Yojna (RGGVY)

2.1.7 The National Electricity Policy states that the key objective of development of the power sector is to supply electricity to all areas including rural areas, for which the Government of India (GoI) and State Governments would endeavour jointly.

Accordingly, the GoI launched (April 2005) 'Rajiv Gandhi Grameen Vidyutikaran Yojna (RGGVY)' with the goal of electrifying all un-electrified villages and providing access to electricity (free of charge to consumers coming under Below Poverty Line (BPL) category) to all households in the next five years. For implementation of the programme, GoI was to provide 90 *per cent* of the expenditure as grant and Rural Electrification Corporation

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[24] **The details of additions planned to the distribution network are not available in respect of all ESCOMs. The ESCOM-wise details are given in Annexures 11 (a) to(e).**

[25] **Excludes 228 substations added in BESCOM and CESC, which are under the control of Karnataka Power Transmission Corporation Limited.**

(Nodal Agency) the balance 10 *per cent* as loan. The other Rural Electrification (RE) schemes *viz.*, 'Accelerated Electrification' of one lakh villages and one crore households, 'Minimum Needs Programme' and 'Kutir Jyoti Programme' were merged into this scheme.

2.1.7.1 As on 31 March 2006, out of 29,406 villages in the State (as per 2001 Census), 28,191 villages[26] were electrified (95.87 *per cent*). Since 28,191 villages were already electrified in terms of the new definition[27] prior to launching of RGGVY, it was decided (2005) to undertake intensive electrification of these villages under RGGVY. Additionally, 69 un-electrified villages were also included in RGGVY. The scheme specified targets in respect of electrification of un-electrified villages and providing power supply to BPL households.

2.1.7.2 ESCOM-wise details of RGGVY works completed are tabulated below:

Table 2

ESCOM	Target			Achievement by 2010-11		
	Intensive electrification of villages	Rural House-holds other than BPL	BPL House-holds	Intensive electrification of villages	Rural House-holds other than BPL	BPL House-holds
BESCOM	10,543	1,79,256	1,88,904	9,534 (90.43)	26,729 (14.91)	1,82,296 (96.50)
CESC	6,071	2,99,422	2,05,120	4,856 (79.99)	23,798 (7.95)	2,19,934 (107.22)
GESCOM	3,932	1,93,090	1,87,575	3,084 (78.43)	20,690 (10.72)	1,32,656 (70.72)
HESCOM	5,141	3,07,734	2,53,739	4,264 (82.94)	17,849 (5.80)	2,15,728 (85.02)
MESCOM	2,504	58,037	42,527	1,869 (74.64)	40,899 (70.47)	35,293 (82.99)
Total	**28,191**	**10,37,539**	**8,77,865**	**23,607 (83.74)**	**1,29,965 (12.53)**	**7,85,907 (89.52)**

Figures in brackets indicate percentage of achievement to targets.

2.1.7.3 Against 28,191 villages selected for intensive electrification, 23,607 villages were intensively electrified at the end of March 2011. The works in respect of balance 4,584 villages were in progress. Further, of the 69 villages identified as un-electrified and taken up for electrification, works were completed in 59 villages (BESCOM-12, CESC - 34 and HESCOM -13) up to the end of March 2011.

In BESCOM intensive electrification works in 9,534 villages out of 10,543 villages were completed under the scheme by September 2009. BESCOM furnished (May 2010) closure reports for completed works to REC under X

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[26] **1,146 villages were not inhabited.**

[27] **A village would be declared as 'electrified' if (a) the basic infrastructure such as distribution transformer and distribution lines were provided in the inhabited locality as well as the Dalit Basti hamlet where it existed, (b) electricity was provided to public places like Schools, Panchayat Offices, Health Centers, Dispensaries, Community centers *etc.* and (c) the number of households electrified was at least 10 *per cent* of the total number of households in the village.**

Against the targeted electrification of 8.78 lakh households Below Poverty Line (BPL) and 10.38 lakh other than BPL households, ESCOMs had electrified 7.86 lakh BPL households (89.52 *per cent*) and 1.30 lakh other than BPL households (12.53 *per cent*) respectively up to the end of March 2011.

Plan. The final reports, as required by REC for the works completed under X Plan, have not been submitted by CESC, GESCOM and HESCOM till date (October 2011), though the works were closed during September 2009. While these ESCOMs continued the implementation of RGGVY under XI Plan, MESCOM had taken up the works only under XI plan.

Against the targeted electrification of 8.78 lakh households Below Poverty Line (BPL) and 10.38 lakh other households, the actual achievement was 7.86 lakh BPL households (89.52 *per cent*) and 1.30 lakh other households (12.53 *per cent*). The remaining works were in progress (March 2011).

2.1.7.4 ESCOMs had received funds under RGGVY for rural electrification. The position of availability of funds *vis-à-vis* utilisation during the five years ended March 2011 is given below:

Table 3 **₹ in crore**

Year	Opening Balance	Funds received during the year	Total funds available	Funds Utilised	Unspent (+) / excess spent (-) funds at the end of the year
2006-07	56.31[28]	46.41	102.72	260.05	(-)157.33
2007-08	(-)157.33	365.88	208.55	201.58	6.97
2008-09	6.97	68.46	75.43	134.95	(-)59.52
2009-10	(-)59.52	67.30	7.78	117.13	(-)109.35
2010-11	(-)109.35	62.92	(-)46.43	75.07	(-)121.50

The ESCOMs received funds to the extent of ₹ 683.57 crore from REC up to 2010-11 for implementation of RGGVY, against which ₹ 805.07 crore was utilised. As at the end of 2010-11, an amount of ₹ 130.72 crore[29] was receivable by the four ESCOMs from REC towards the RGGVY works. MESCOM had unspent balance of ₹ 9.22 crore.

In respect of BESCOM, the scheme was closed in September 2009 and 'scheme closure' report submitted in May 2010. BESCOM is yet to receive ₹ 22.73 crore as the final report to the Government for countersignature after certification by Chartered Accountant was forwarded only in March 2011. Further, against an amount of ₹ 1,500 per installation for electrification fixed by REC, BESCOM expended higher amounts per installation resulting in additional expenditure of ₹ 15.74 crore. The extra expenditure incurred to provide improved safety measures were not recoverable.

Similarly, CESC, GESCOM and HESCOM had spent ₹ 25.54 crore, ₹ 7.39 crore and ₹ 15.24 crore respectively in excess of sanctioned amounts for works completed under the X Plan due to increase in cost of installation.

28 ESCOMs had received funds of ₹ 72.60 crore prior to 2006-07, of which ₹ 16.29 crore was spent, leaving a balance of ₹ 56.31 crore at the beginning of 2006-07.

29 BESCOM: ₹ 22.73 crore, CESC: ₹ 34.60 crore, GESCOM: ₹ 27.94 crore and HESCOM: ₹ 45.45 crore.

Restructured Accelerated Power Development Reforms Programme

2.1.8 Government of India (GoI) had approved the Accelerated Power Development Reforms Programme (APDRP) to leverage the reforms in power sector through the State Governments. This scheme was implemented by the power sector companies through the State Government to upgrade the sub-transmission and distribution system including energy accounting and metering, for which financial support was provided by GoI.

In order to carry forward the reforms process, the GoI had launched the Restructured APDRP (R-APDRP) in July 2008 as a Central Sector Scheme for XI Plan. Projects under R-APDRP scheme were to be taken up in two parts - Part A and B. Part A was dedicated to establishment of IT enabled system for achieving reliable and verifiable base-line data system in all towns besides installation of SCADA[30] /Distribution Management System. For this, 100 *per cent* loan was to be provided. The loan was convertible into grant on completion and verification of the system by third party independent evaluating agencies. Part B of the scheme deals with strengthening of regular sub-transmission and distribution systems and up-gradation of projects.

It was proposed to cover urban areas - towns and cities with a population of more than 30,000 (10,000 in case of special category states). In addition, in certain high-load density rural areas with significant loads, works of separation of agricultural feeders from domestic and industrial ones and High Voltage Distribution System (11kV) were also required to be taken up. Further, in respect of towns/areas for which projects were sanctioned in X Plan, R-APDRP was to be considered for XI Plan only after completion or short closure of the projects sanctioned earlier.

2.1.8.1 The Ministry of Power, GoI, sanctioned projects covering 100 towns of Karnataka under Part A at an outlay of ₹ 469.60 crore. The GoI, through Power Finance Corporation (PFC), had sanctioned (February 2009) ₹ 391.71 crore[31] as loan (convertible into grant). The terms of the loan agreement stipulated completion of implementation by February 2012. The balance of ₹ 77.89 crore was required to be met by the ESCOMs.

The details of funds released by GoI (through PFC), utilisation and balances in respect of ESCOMs are given below:

Table 4 **₹ in crore**

Year	Opening balance	Funds released by GoI	Funds utilised	Balance	Percentage of funds utilized to funds available
2009-10	-	108.78	24.39	84.39	22.42
2010-11	84.39	24.10	23.09	85.40	21.28

[30] Supervisory Control and Data Acquisition generally refers to industrial control systems and computer systems that monitor and control industrial, infrastructure or facility-based processes.

[31] BESCOM (₹ 261.92 crore), CESC (₹ 27.73 crore), GESCOM (₹ 37.37 crore), HESCOM (₹ 52.62 crore) and MESCOM (₹ 12.07 crore).

The progress in respect of Part-A and Part-B of R-APDRP works are discussed below:

Establishment of IT enabled system

Under R-APDRP, the agency appointed for implementation of IT enabled system had not yet completed (September 2011) even the pilot projects and, hence the chances of conversion of loan of ₹ 391.71 crore into grant were remote.

2.1.8.2 The Part – A of R-APDRP scheme was dedicated to establishment of IT enabled system and SCADA/Distribution Management System. In order to have an integrated and unified solution, carrying out the entire work in all the ESCOMs through a single vendor was envisaged. BESCOM was entrusted with the responsibility of inviting tenders for selection of IT consultants and IT implementing agency. Accordingly, Reliance Infrastructure Limited (RIL) was appointed (June 2009) as the IT consultant at a cost of ₹ 2.50 crore and Infosys Technologies Limited was appointed (December 2009) as the agency to implement Part-A of the scheme at a cost of ₹ 386.68 crore. In terms of the contracts with the above agencies, pilot projects were to be completed by December 2010 and enterprise-wide implementation of IT enabled systems in all the selected areas were to be completed by June 2011.

It was however, observed that the implementing agency had not completed even the pilot projects (September 2011), which were required to be completed by December 2010.

The loan amount of ₹ 391.71 crore sanctioned by GoI would not be converted to grant unless the ESCOMs complete the projects in all the 100 identified towns by February 2012 as per the terms of the agreement governing sanction of loan. Since even the pilot projects are not completed, the possibility of completing the projects within the stipulated period is remote. The conversion of loan of ₹ 391.71 crore into grant is, therefore, doubtful.

Strengthening of sub-transmission and distribution systems

2.1.8.3 Part B of the scheme deals with strengthening of regular sub-transmission & distribution systems and also upgradation of the distribution system. The focus of the scheme was on reduction of Aggregate Technical & Commercial (AT & C) losses on sustainable basis and to strengthen the distribution. Funds to the extent of 25 *per cent* of the cost were to be provided as loan by GoI and the balance 75 *per cent* was to be arranged by the ESCOMs from the Financial Institutions/Power Finance Corporation. Up to 50 *per cent* of the loan along with its interest was convertible into grant on completion of the project within the stipulated time, maintaining it for five years and on achieving the target of 15 *per cent* set for AT&C losses.

An amount of ₹ 949.32 crore was sanctioned (March/June 2010) under Part B, covering 88 towns excluding areas under MESCOM jurisdiction as the AT&C losses in MESCOM were already less than 15 *per cent*. Though funds to the extent of ₹ 102.85 crore[32] were released during 2010-11, the works were not started till March 2011. BESCOM awarded (March 2011) works for all the 24

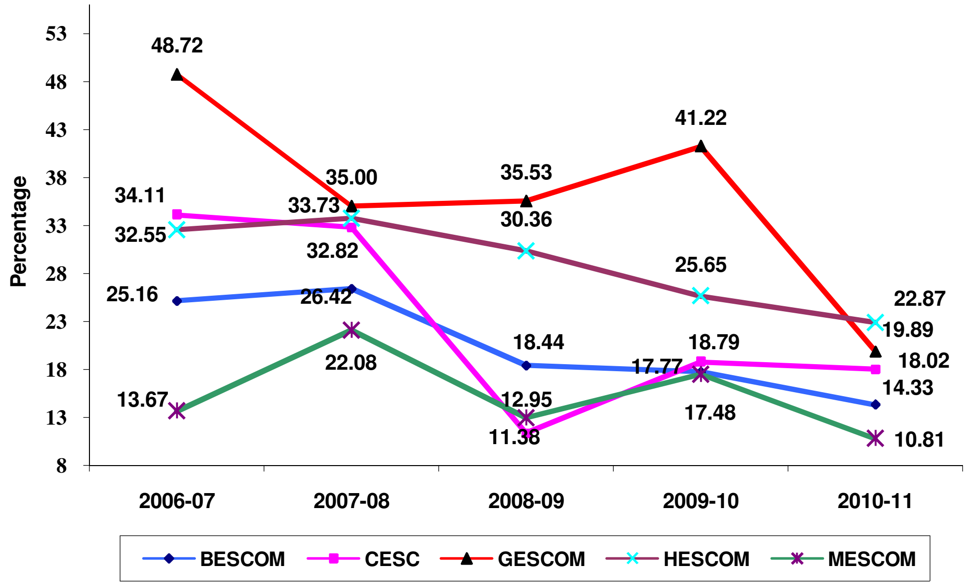
[32] **BESCOM (₹ 43.78 crore), CESC (₹ 28.96 crore) and GESCOM (₹ 30.11 crore).**

towns at the cost of ₹ 292 crore on total turnkey basis. In respect of CESC, the works were under various stages of tendering (September 2011).

Aggregate Technical & Commercial Losses

2.1.8.4 The Aggregate Technical and Commercial (AT&C) losses[33] during the review period in the ESCOMs[34] are represented by the graph below:

Graph 2



2.1.8.5 The ESCOMs were able to reduce AT&C losses substantially by the end of 2010-11 as compared to 2006-07 due to drastic reduction in distribution losses. Further, 100 *per cent* metering of 11kV/33kV feeders as well as consumer metering are yet to be achieved, especially in respect of IP sets.

At the end of 2010-11, only BESCOM and MESCOM were able to bring down the AT&C losses below the norm of 15 *per cent*.

The Government had informed (October 2011) that the AT&C losses were higher in 2006-08 in respect of CESC because the payments from Urban Local Bodies and Irrigation Pump set consumers had not been received.

Consumer metering

2.1.8.6 Total metering of consumption is essential to achieve higher efficiency in energy sales to control theft and to identify misuse of electricity and unauthorised loads. The ESCOMs, in the annual filings submitted to the KERC, had held that metering of IP sets was a difficult task as it was being opposed by a set of IP set consumers. KERC had observed in its tariff orders

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[33] **It is the difference between energy input units into the system and the units for which the payment is collected.**
AT&C Loss (*per cent*) = [{(Energy Input – Energy Realised)} / Energy Input] X100
Energy Realised = Energy Billed X Collection Efficiency
Collection Efficiency (*per cent*) = (Amount Realised / Amount Billed) X100.

[34] **CESC and GESCOM figures for the year 2010-11 are provisional.**

that continuation of supply to unmetered categories of consumers violated the provisions of Section 55 of Electricity Act, 2003. KERC had been directing[35] the ESCOMs to meter all direct connections and replace defective meters (meter-not-reading), time and again.

2.1.8.7 The following table highlights the number of unmetered categories (KJ/BJ, IP sets, Street lights) in ESCOMs at the end of 2010-11.

Table 5

Particulars		BESCOM	CESC	GESCOM	HESCOM	MESCOM	Total
Bhagya Jyothi (BJ)/ Kutir Jyothi (KJ)	No. of installations	6,73,285	4,89,009	5,49,794	7,52,366	1,66,350	26,30,804
	No. of metered installations	6,66,737	4,70,031	4,02,525	6,27,571	1,50,547	23,17,411
	No. of unmetered installations	6,548	18,978	1,47,269	1,24,795	15,803	3,13,393
	Percentage of unmetered installations	0.97	3.88	26.79	16.59	9.50	11.91
IP Sets	No. of installations	6,01,727	2,25,910	2,72,607	5,04,005	2,04,603	18,08,852
	No. of metered installations	56,112	77,870	71,776	1,51,688	1,89,108	5,46,554
	No. of unmetered installations	5,45,615	1,48,040	2,00,831	3,52,317	15,495	12,62,298
	Percentage of unmetered installations	90.67	65.53	73.67	69.90	7.57	69.78
Street lights	No. of installations	47,824	17,593	9,484	17,436	1,4951	1,07,288
	No. of metered installations	47,824	16,844	8,970	17,436	1,4951	1,06,025
	No. of unmetered installations	0	749	514	0	0	1,263
	Percentage of unmetered installations	0	4.26	5.42	0	0	1.18

All the ESCOMs (except MESCOM) failed to achieve significant progress in metering of Irrigation Pump sets.

The ESCOMs (except MESCOM) have to improve metering of IP sets. Nevertheless, substantial progress has been achieved in all the ESCOMs in metering of street lights and BJ/KJ installations.

While 90.67 *per cent* of IP sets were not metered in BESCOM, 92.43 *per cent* of IP sets were metered in MESCOM, indicating lop-sided implementation of metering in the State.

It is to be noted that KERC in its various tariff orders, while reiterating the requirement for 100 *per cent* metering, had warned that action would be taken against the ESCOMs in accordance with the Electricity Act for non-achievement.

Implementation of other schemes

2.1.8.8 In addition to the centrally sponsored schemes undertaken by the ESCOMs as enumerated above in Paragraph 2.1.7 and 2.1.8 the ESCOMs had undertaken (2003-04) Gram Jyothi Scheme (GJS) with the objective of providing assured hours of power supply to Irrigation Pump sets (IP sets)

[35] **Tariff orders 2006 (October 2006), 2008 (January 2008), 2009 (November 2009) and 2010 (December 2010).**

customers and continuous power supply to non-IP set customers. The pilot projects undertaken in five stations were discontinued (2004) after spending ₹ 7.43 crore to give way to another scheme called Rural Load Management System (RLMS) scheme.

The RLMS scheme was undertaken (2004-05) with the same objectives. We had observed[36] that the main objective of the RLMS was not achieved in BESCOM and HESCOM, which had expended a total of ₹ 413.82 crore. This scheme was discontinued during 2008-09. The scheme, implemented at a cost of ₹ 67.72 crore (March 2010) in MESCOM, however, was working successfully.

The ESCOMs are in the process of implementing (2009-10) yet another scheme called Niranthara Jyothi by drawing exclusive feeders for irrigation loads to achieve the same objectives of the RLMS. The scheme is in early stages of implementation (March 2011).

Operational efficiency

2.1.9 The operational performance of an ESCOM is judged on the basis of availability of adequate power for distribution, adequacy and reliability of distribution network, line losses, detection of theft of electricity, *etc*. These aspects are discussed below.

Purchase of power

2.1.10 The demand for energy in the State has been increasing**.** The power requirement of the State is determined by the Energy Department on the basis of the requirements of the ESCOMs and the forecast of the State Load Despatch Centre (SLDC) of KPTCL. The ESCOMs prepare the projections and submit it to the KERC for approval.

The ESCOMs have entered into Power purchase agreements for purchase of long term power. PCKL on behalf of the ESCOMs arranges short-term power either through energy exchange or through bidding process.

The power so procured is allocated[37]amongst the ESCOMs and the bidders/ suppliers raise invoices on each ESCOM against supplies.

It was reported to the KERC that assessment of future demand and requirement of power was calculated on the basis of past consumption trend, present requirement, load growth trend and transmission and distribution (T & D) losses.

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[36] **The performance review on the implementation of the RLMS by ESCOMs between 2006-07 and 2009-10 is included in Paragraph 2.2 of the Report (Commercial), Government of Karnataka of the Comptroller and Auditor General of India for the year ended March 2010.**

[37] **For 2010-11, the percentage of power allocation was BESCOM (49.62 *per cent*), CESC (10.61 *per cent*), GESCOM (13.26 *per cent*), HESCOM (18.18 *per cent*) and MESCOM (8.33 *per cent*).**

2.1.10.1 The details of demand for power assessed for the State on the basis of All India 17th Electric Power Survey (EPS), demand projected to the KERC by the ESCOMs, purchase of power approved by KERC and actual power purchased during the period 2006-07 to 2010-11 in respect of all ESCOMs are given below:

Table 6 **in Million Units**

Year	Demand assessed in EPS	Demand assessed as per ARR/ERC/ MYT filing	Purchases approved by KERC at time of filing ARR	Actual Power purchased	Excess/(Shortfall) in purchase against approved by KERC
(1)	(2)	(3)	(4)	(5)	(6) = (5-4)
2006-07	39,646	37,594.93	34,538.06	40,823.68	6,285.62
2007-08	42,101	43,131.43	40,552.08	40,479.59	(72.49)
2008-09	44,709	46,846.30	44,018.07	42,297.38	(1,720.69)
2009-10	47,477	51,163.92	47,730.89	42,770.07	(4,960.82)
2010-11	50,417	47,325.01	45,634.35	47,212.48	1,578.13

Though KERC had been approving power purchase of quantities lesser than what was being projected by ESCOMs, it was approving the actual power purchases (both quantum and cost) at the time of annual true-up exercise[38] during the course of next tariff revision. The Government endorsing the reply of CESC stated (October 2011) that as per the information furnished by the Company the demand forecast made by adopting a hybrid of Estimated Power Supply laced with hours of supply was in order, while the KERC had concentrated on Cumulative Average Growth Rate of capacity for arriving at the demand forecast. In respect of other ESCOMs, no reply has been furnished (October 2011).

2.1.10.2 In line with the Tariff Policy of the Government, KERC also approves the sources of purchase of power and the purchase cost, based on the estimated sales to different categories of consumers and the normative transmission and distribution losses. Major portion of the power requirement is met through generation by the Karnataka Power Corporation Limited (KPCL) and Central Generating Stations (CGS) and registered IPPs. Power is procured through short term power purchase agreements and power exchanges to cover the shortage. The source-wise purchase of power and the cost (per unit) of purchase during review period are given in **Annexure 12**.

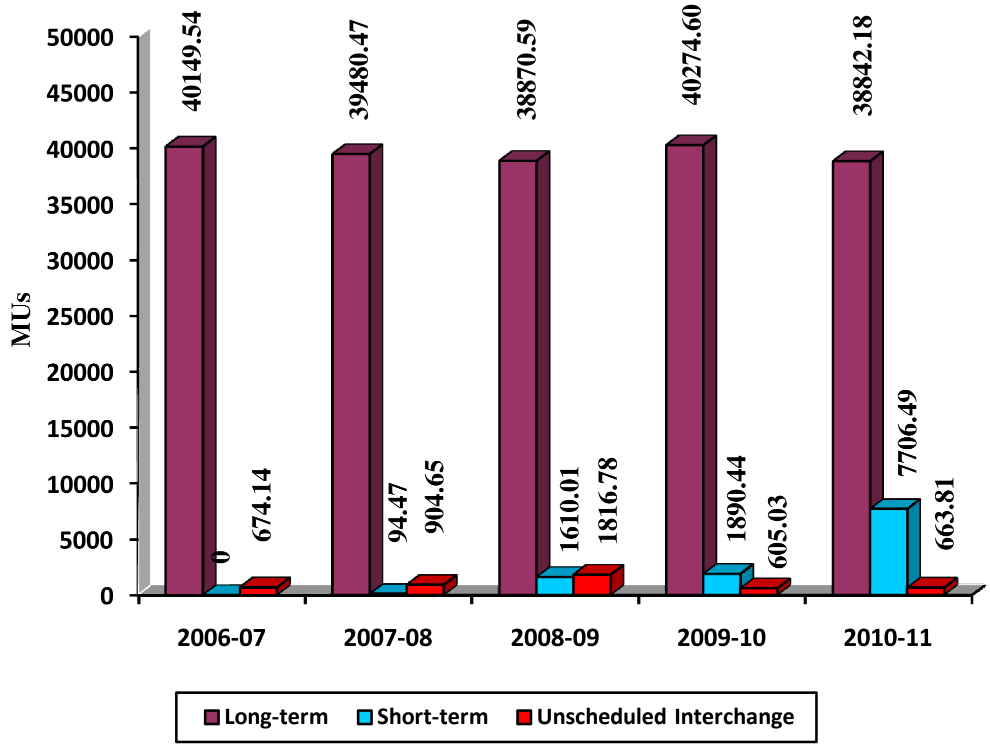
2.1.10.3 Energy is transmitted through the regional grid up to the connection points of KPTCL from where power is distributed to ESCOMs. The ESCOMs are required to maintain grid standards (like voltage profile, drawal of energy as per schedule *etc.,*) fixed by the Central Electricity Authority (CEA) to maintain grid security. The ESCOMs have to restrict their day-to-day net drawal of energy from the regional grid within the schedule. Excessive drawal

[38] **A periodic mechanism for adjustment of a Tariff based on pre-defined parameters to account for errors in estimations and forecasts, for differences in the elements of costs and revenues actually incurred or realized from the projected costs and revenues anticipated under the Tariff and the applicable Tariff Formula (Source : MYT Regulations).**

invites payment of unscheduled interchange (UI) charges. UIs are power cost charges at higher rates based on the frequency of the power prevailing at the time of drawal of power.

2.1.10.4 The total power purchased (as mentioned in previous table) with break-up of long-term, short-term and unscheduled interchange (UI) is given below:

Graph 3



We observed that there had been shortage of power in the State despite significant capacity additions by the State Government. One of the reasons for this shortage was that the demand for electricity had grown faster than the increase in supply. To overcome the shortage, the State had resorted to purchase of short-term power at high cost from all available sources. The recovery of the high cost of power purchase had generally been through increase in tariff for supply and subsidy from the State Government.

It could be seen from the above diagram that between the years 2006 and 2011, there was reduction in drawal of long-term power and increase in purchase of short term power. We had observed[39] that the main reasons for reduction in supply of long-term power were increased forced outages and under-performance[40] in the operation of Raichur Thermal Power Station

[39] **Reference is invited to the Paragraphs 2.1.66 to 2.1.74 of the Audit Report (Commercial), Government of Karnataka of the Comptroller and Auditor General of India for the year ended March 2010.**

[40] **The percentage of forced outages to total available hours increased from 2.08 in 2006-07 to 11.78 in 2008-09 and was 8.22 in 2009-10. Further, the Plant Load Factor (PLF) of RTPS, which was 89.18 in 2006-07 dropped to 81.68 in 2008-09 and 80.78 in 2009-10. The PLF of BTPS, a new unit, was only 65.32 in 2009-10.**

(RTPS) and Bellary Thermal Power Stations (BTPS) during 2008-10. The reduction in long term power was noticed in spite of addition of 1,016 Mega Watt (MW)[41] of long term power to the grid during 2006-11 by the Karnataka Power Corporation Limited (KPCL), a State Government Company.

During 2008-11 ESCOMs incurred extra expenditure of ₹ 793.93 crore on energy purchases at Unscheduled Interchange charges and ₹ 3,058.93 crore on short term purchases.

During the period 2006-11, short term power of 11,301.41 MUs were purchased at average rates ranging between ₹ 4.96 and ₹ 14.63 per unit and 4,664.41 MUs at UI rates. The extra cost as compared to cost per unit of long term power, which was paid during 2006-11 for short term high cost purchases was ₹ 3,176.53 crore and UI charges paid in the same period worked out to ₹ 1,153.57 crore. Of this, the extra cost incurred during the period 2008-11 for purchase of short term power and UI charges were ₹ 3,058.93 crore and ₹ 793.93 crore respectively.

The Government informed (October 2011) that in order to meet the demand-supply gap and maintain grid discipline, overdrawal was inevitable and the overdrawal invited UI charges. The Government also informed (October 2011) that the issue was system specific and could be controlled when the Load Dispatch Centre and SCADA centres of all ESCOMs were interconnected and fully operational.

The points noticed in respect of purchase of power are discussed in succeeding paragraphs.

Delay in signing Power Purchase Agreements

2.1.10.5 The Government had allowed[42] (August/September 2009) CESC to purchase power from three wind mill plants with installed capacity of 1.5 MW each. The tariff approved (January 2005) by KERC for such projects was ₹ 3.40 per unit. However, the PPA was signed only in March 2010 *i.e.,* after six months with validity of 10 years.

Meanwhile, KERC issued (December 2009) new tariff orders for renewable energy sources. The tariff for wind mill projects, where PPAs were concluded after January 2010, was fixed at ₹ 3.70 per unit. As CESC had delayed the agreement the extra expenditure during the currency of the contract would be ₹ 2.58 crore.

The Government had informed (October 2011) that the acceptance was delayed because three suppliers had not submitted complete documents in respect of clearance from KPTCL and Electrical Inspectorate. Further, it was stated that the revision of rates by KERC was a coincidence and CESC would not incur loss.

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[41] BTPS Unit 1 (500 MW), Nagjhari Power House (30 MW), Varahi Underground Power house (230 MW), RTPS Unit 8 (250 MW), Solar Photovoltaic (6 MW).

[42] Apart from power supply to pool account, power projects are allotted to respective ESCOMs by the Government.

Investment in PCKL

2.1.10.6 As per Section 14 of the Electricity Act, 2003, the ESCOMs are deemed licence holders to trade in power as distribution companies. Nevertheless, the State Government accorded (May/July 2007) approval to form a Special Purpose Vehicle *viz.,* Power Company of Karnataka Limited (PCKL) to take up the work of inviting tariff based bids for establishment of Power Projects through competitive bidding and to trade in power. The PCKL proposed to obtain Category 'F' inter-state trading license to facilitate purchase of power for ESCOMs. In order to meet the net worth requirement of ₹ 20 crore for PCKL to obtain the license, BESCOM contributed (January 2008) ₹ 10 crore, while the other four ESCOMs contributed ₹ 2.5 crore each to PCKL.

As the net worth requirement for obtaining the licence increased (February 2009) from ₹ 20 crore to ₹ 50 crore, PCKL decided to keep on hold the process of obtaining the license. We observed that PCKL has neither issued equity shares nor refunded the amount to the ESCOMs till date (June 2011).

The PCKL replied (June 2011) that the Government of Karnataka had incorporated the Company to act as a facilitator for purpose of administrative convenience and for better control over trading activities. The fact remained that the inter-state trading license was not obtained (June 2011).

COPU had instructed (November 2010) one of the ESCOMs, *viz.,* the HESCOM, to obtain refund of the amount of ₹ 2.5 crore paid by them, with interest. The matter has been referred to the GoK.

Sub-transmission and distribution losses

2.1.11 The distribution system is an important and essential link between the power generation source and the consumer of electricity. Some energy is lost in the network during distribution, when carried from source of generation to the consumers. For efficient functioning of the system, it must be ensured that there is minimum loss in sub-transmission and distribution of power. The losses at 33KV stage are termed sub-transmission losses while those at 11 KV and below stages are termed distribution losses. This difference between energy received (paid for) by the distribution Company and energy billed to consumers is termed transmission and distribution (T&D) losses.

The percentage of losses to available power indicates the effectiveness of distribution system. The losses occur mainly on two counts, *i.e.*, technical and commercial. Technical losses occur due to the inherent character of equipment used for transmitting and distributing power and resistance in conductors through which the energy is carried from one place to another. The commercial losses are due to theft of energy, defective meters and unmetered supply.

The details of transmission losses in the ESCOMs in the State as a whole for the five years up to 2010-11 are given below:

Table 7

Sl. No.	Particulars	2006-07	2007-08	2008-09	2009-10	2010-11
1	Total power purchased (in MUs)	40,823.68	40,479.59	42,297.38	42,770.07	47,212.48
2	Power available for Sale (in MUs)	38,190.46	38,103.38	39,893.17	40,942.10	44,592.03
3	Transmission loss (in MUs)	2,633.22	2,376.21	2,404.21	1,827.97	2,620.45
4	Percentage of transmission loss (Sl.No.3 /Sl.No.1) x 100	6.45	5.87	5.68	4.27	5.55
5	Percentage of loss allowed by KERC	4.06	4.06	4.03	4.00	4.00
6	Excess transmission loss (in MUs)	975.78	732.74	699.63	372.43	809.27
7	Average realization rate per unit (in ₹)	3.630	3.774	3.676	4.012	4.534
8	Value of excess transmission loss (₹ in crore) (Sl.No.6 x Sl.No.7)	354.21	276.54	257.18	149.42	366.92

The percentage of transmission loss was higher than that prescribed by KERC in all the years and the energy lost during 2006-11 was 3,589.85 MUs. The loss of revenue suffered by ESCOMs on this count was ₹ 1,404.27 crore.

2.1.11.1 The table below indicates the energy losses due to distribution in the ESCOMs in the State as a whole in the five years up to 2010-11.

Table 8

Sl. No.	Particulars	2006-07	2007-08	2008-09	2009-10	2010-11
1	Power available for sale (in MUs)	38,190.46	38,103.38	39,893.17	40,942.10	44,592.03
2	Energy sold (in MUs)	28,452.82	29,987.93	32,225.38	33,810.25	37,215.10
3	Distribution loss (Sl.No.2 – Sl.No.1) (in MUs)	9,737.64	8,115.45	7,667.79	7,131.85	7,376.93
4	Percentage of distribution loss (Sl.No.3 /Sl.No.1) x 100	25.50	21.30	19.22	17.42	16.54
5	Percentage of loss allowed by KERC [43]	Different for each ESCOM. However, the weighted averages of all ESCOMs are as follows				
		22.66	21.76	20.87	18.54	16.75

The distribution losses showed a declining trend from 25.50 *per cent* in 2006-07 to 16.54 *per cent* in 2010-11.

The distribution losses were within the norms during the last five years (except in 2006-07) considering ESCOMs as a whole. Further, the distribution losses showed a declining trend from 25.50 *per cent* in 2006-07 to 16.54 *per cent* in 2010-11.

We, however, observed that during the period 2006-11, there were variations between the norms prescribed by KERC and actual distribution losses in each

[43] **KERC had prescribed only ESCOM-wise distribution losses. The norm for distribution loss for the State as a whole is worked out considering the weighted average of norm prescribed for individual ESCOMs by KERC.**

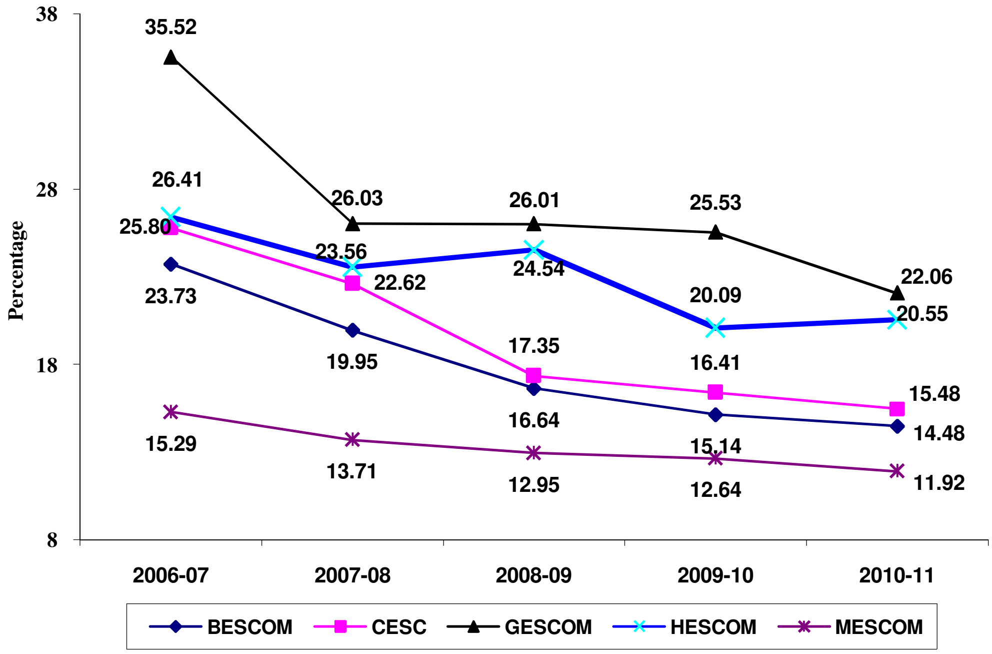
of the ESCOMs as detailed below:

Table 9 **in percentage**

ESCOM	2006-07		2007-08		2008-09		2009-10		2010-11	
	Norm fixed by KERC for distri-bution loss	Actual energy loss	Norm fixed by KERC for distri-bution loss	Actual energy loss	Norm fixed by KERC for distri-bution loss	Actual energy loss	Norm fixed by KERC for distri-bution loss	Actual energy loss	Norm fixed by KERC for distri-bution loss	Actual energy loss
BESCOM	20.50	23.73	20.00	19.95	19.00	16.64	16.00	15.14	14.75	14.48
CESC	25.03	25.80	22.00	22.62	21.00	17.35	19.50	16.41	15.50	15.48
GESCOM	29.23	35.52	27.05	26.03	26.50	26.01	24.02	25.53	23.00	22.06
HESCOM	24.99	26.41	25.00	23.56	24.00	24.54	22.50	20.09	20.00	20.55
MESCOM	15.00	15.29	14.90	13.71	14.80	12.95	14.60	12.64	12.50	11.92

2.1.11.2 The ESCOM-wise distribution losses during the period 2006-11 are depicted below graphically:

Graph 4



2.1.11.3 None of the ESCOMs were able to achieve the norms fixed by KERC in 2006-07. By 2010-11, the distribution losses were below the norm fixed by KERC in all ESCOMs (except HESCOM). The loss suffered by ESCOMs[44] due to non-achievement of the norms which was ₹ 394.53 crore in 2006-07 decreased to ₹ 21.60 crore during 2010-11.

2.1.11.4 In accordance with the Multi-Year Tariff Regulations (MYT), three limits for distribution losses are prescribed by KERC *viz.,* upper, lower and average limits and in the event of the actual distribution losses exceeding the approved upper limit, penalty is leviable for non-achievement of targeted level of loss. Similarly, incentives are allowed by KERC if the actual distribution

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[44] **The ESCOM-wise details are given in Annexure 13.**

losses are within the approved lower limit and such benefits are added to the annual revenue requirement of the ESCOMs.

KERC in its tariff order 2010 issued in December 2010, while appreciating the loss reduction efforts made by BESCOM and MESCOM, allowed incentive of ₹ 64.23 crore and ₹ 9.77 crore respectively for 2008-09. Similarly, incentives of ₹ 24.72 crore and ₹ 10.17 crore were allowed for 2009-10 for CESC and HESCOM respectively. It was also observed that KERC had imposed penalty of ₹ 3.82 crore on HESCOM in 2008-09 and ₹ 8.75 crore on GESCOM for the year 2009-10 for exceeding the upper limits of distribution losses.

Inadequate transformation capacity

2.1.11.5 Transformer is a static device installed for stepping up or stepping down voltage in transmission and distribution of electricity. The energy received at high voltages (110 KV, 66 KV and 33 KV) from primary sub-stations of the transmission Company is transformed to lower voltage (11 KV) to make it usable. 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 to be 1:1. The table below indicates the details of transformation capacity and connected load of the consumers in the State during the period 2006-11.

Table 10 **in MVA**

Year	Transformation Capacity	Connected load	Gap in transformation capacity	Ratio of transformation capacity to connected load
2006-07	22,010.13	23,604.50	1,594.37	0.93:1
2007-08	23,394.22	25,723.32	2,329.10	0.91:1
2008-09	24,858.20	27,161.14	2,302.94	0.92:1
2009-10	26,395.76	29,067.42	2,671.66	0.91:1
2010-11	27,889.83	31,203.28	3,313.45	0.89:1

The ratio of transformation capacity to total connected load during the period 2006-11 was close to 0.91:1.

2.1.11.6 The ratios of transformation capacity to connected load during 2006-11 in respect of ESCOMs are given below:

Table 11

ESCOM	2006-07	2007-08	2008-09	2009-10	2010-11
BESCOM	1.01	0.98	0.98	0.99	0.97
CESC	1.18	1.05	1.18	1.23	1.14
HESCOM	0.92	0.91	0.86	0.79	0.78
GESCOM	0.75	0.78	0.80	0.81	0.80
MESCOM	0.71	0.70	0.70	0.71	0.74

As at end of 2010-11, BESCOM and CESC had adequate transformation capacity to meet the connected load, whereas other ESCOMs had not achieved the optimal ratio of 1:1. In fact, in HESCOM, the ratio was slipping, pointing to a situation where addition to transformation capacity was not commensurate with the increase in connected load or there was no capacity addition.

Performance of Distribution Transformers

2.1.11.7 The KERC had fixed limits of failures of Distribution Transformers (DTRs) in its tariff orders. The norms fixed, DTRs failed and the expenditure incurred on repairs are depicted in the table below:

Table 12

Sl. No.	Particulars	2006-07	2007-08	2008-09	2009-10	2010-11
1	Existing DTRs at the close of the year (in Number)	2,71,500	2,98,086	3,27,807	3,54,573	3,80,163
2	DTR failures (in Number)	34,598	36,934	39,052	45,534	41,530
3	Percentage of failures	12.74	12.39	11.91	12.84	10.92
4	Norms allowed by KERC (*per cent*)	Different norm for each ESCOM				
5	Expenditure on repair of failed DTRs (₹ in crore)	50.49	58.93	64.78	78.60	87.94

2.1.11.8 The percentages of DTR failure were in excess of the maximum percentage of 12 *per cent* in all the years except in 2008-09 and 2010-11 (allowed for rural DTRs as per the standard of performance prescribed by KERC).

The percentages of failures of distribution transformers were more in CESC and GESCOM than the norms prescribed by KERC.

The ESCOM-wise failures of DTRs are given in **Annexure 9(a).** It could be observed that there was a declining trend in DTR failures in ESCOMs. However, the failures of transformers were high in CESC and GESCOM as compared to other ESCOMs during the period 2006-07 to 2010-11.

Analysis of causes for failures of DTRs done by ESCOMs showed that over-loading was the main reason for premature failures, besides poor preventive maintenance, defective earthing/lightning arrestors, which were controllable in nature. The percentages of failures due to over-loading during the last five years are given below:

Table 13

Year	Total number of failures of DTRs	Number of failures due to over-loading	Percentage of failures due to over-loading to total number of failures excluding manufacturing defects
2006-07	34,598	10,253	29.63
2007-08	36,934	9,305	25.19
2008-09	39,052	9,917[45]	31.27
2009-10	45,534	12,012	26.38
2010-11	41,530	10,997	26.48

[45] **Data for 2008-09 excludes CESC as the information was not made available.**

2.1.11.9 The details of failures of DTRs due to over-loading in each ESCOM are given in **Annexure 9(b).** The following were observed:

- Percentage of failures due to over-loading as compared to total failures of DTRs was unusually high in BESCOM, ranging between 52.04 and 61.80 mainly due to existence of unauthorised Irrigation Pump sets. These IP sets were in areas declared as 'Dark and Grey' by the Government on account of depletion of ground water table. As such, the ESCOMs could not regularize these unauthorised IP sets. In order to bring down the number of unauthorised IP sets, KERC had directed (December 2010) BESCOM in the Tariff Order 2010 to take up the issue with Government.

- In GESCOM, percentage of failures due to over-loading as compared to total failures of DTRs increased from 24.91 *per cent* in 2006-07 to 30.94 *per cent* in 2010-11.

- In MESCOM, percentage of failures due to over-loading as compared to total failures of DTRs declined from 8.88 *per cent* in 2006-07 to 4.23 *per cent* by 2010-11.

Preventing over-loading and conducting periodical maintenance are the key measures to minimize failure of DTRs.

Delay in repair of Distribution Transformers

2.1.11.10 The ESCOMs undertake repairs of damaged transformers through outside agencies. The time limit prescribed for return of repaired transformers was 30 days. Instances of delays ranging from one day to 412 days, beyond the permissible limits, were observed in GESCOM. GESCOM had not levied penalty for the delays in spite of provision in the contract. In other ESCOMs, the performance of repair of transformers was found to be adequate in test checked divisions.

Capacitor Banks

2.1.11.11 Capacitor Bank improves power factor by regulating current flow and voltage regulation. In the event of voltage falling below normal levels, the situation can be redeemed by providing sufficient capacitor banks to the system to improve the voltage profile and reduce dissipation of energy to a great extent, thereby saving loss of energy. Audit observations in respect of three[46] ESCOMs are given below:

- In GESCOM, against the targeted addition of capacitor banks of 1,310 Mega Volt Ampere Reactive (MVAR) Power during the period 2006-11, the actual addition was only 560 MVAR (42.75 *per cent*). The shortfall in addition of capacitor banks led to loss in energy of 68.90 MUs valued at ₹ 25.51 crore.

- In HESCOM, against the targeted addition of capacitor banks of

[46] Excludes BESCOM and CESC as they do not have sub-stations of their own.

577.50 Mega Volt Ampere Reactive (MVAR) Power during the period 2006-11, the actual addition was only 280 MVAR (48.48 *per cent*). HESCOM had informed (July 2011) Audit that it would be difficult to work out or bifurcate energy savings for individual capacitor banks since the loss of energy depended on current factor, length of feeder, type of conductor and connected load.

- In MESCOM, against the targeted addition of capacitor banks of 37.20 MVAR during 2006-11, the actual addition was only 5.80 MVAR (15.59 *per cent*). The shortfall in addition of capacitor banks led to loss in energy of 5.55 MUs valued at ₹ 2.26 crore.

Commercial losses

2.1.11.12 The commercial losses occur due to improper consumer metering, billing and collection, besides theft. The metering and billing aspects are covered under implementation of R-APDRP scheme and billing efficiency in Paragraphs 2.1.8 and 2.1.12 respectively. The other observations relating to commercial losses are discussed below:

Implementation of LT-less system

2.1.11.13 High Voltage Distribution System is an effective method to reduce technical losses, prevent theft, improve voltage profile and provide better consumer service. Against the norm of 1:1 prescribed by KERC, the actual High Tension (HT) : Low Tension (LT) ratio in all the ESCOMs (consolidated)[47] ranged between 0.43:1 and 0.47:1. The ESCOM-wise HT - LT ratios during 2006-11 are given below:

Table 14

ESCOM	2006-07	2007-08	2008-09	2009-10	2010-11
BESCOM	0.44	0.45	0.46	0.48	0.49
CESC	0.37	0.39	0.41	0.42	0.43
GESCOM	0.44	0.45	0.46	0.47	0.48
HESCOM	0.50	0.51	0.51	0.52	0.53
MESCOM	0.33	0.34	0.35	0.36	0.36
TOTAL	**0.43**	**0.44**	**0.45**	**0.46**	**0.47**

ESCOMs need to achieve HT - LT line ratio of 1:1 through implementation of high voltage distribution system for reduction in technical losses, to prevent theft and to improve the voltage profile.

[47] The ESCOM-wise details of HT and LT lines are given in Annexures 11 (a) to (e).

Conversion of LT conductors into Aerial Bunch Cables

2.1.11.14 Aerial Bunch Cables[48] prevent illegal tapping of low voltage distribution lines and help in reducing over-loading of Distribution Transformers and maintaining voltage of the supply. It was observed that CESC, GESCOM and HESCOM had not taken up the conversion of LT conductors into aerial bunch cables. Though such conversion works were taken up in BESCOM and MESCOM, the progress was insignificant as only 377.35 KMs and 7.313 KMs respectively of LT conductors were converted to Aerial Bunch Cables at the end of March 2011.

Theft of energy

2.1.11.15 Substantial commercial losses were caused by theft of energy through tampering of meters by consumers and unauthorised tapping/hooking by non-consumers. As per Section 135 of Electricity Act 2003, theft of energy is an offence punishable under the Act. The number of consumers checked, theft cases, loss assessed and amounts realised are given below:

Table 15

Year	Total number of consumers as at 31 March	Total no. of checking (actuals)	Total no. of theft cases	Total assessed amount (₹ in crore)	Total amount realised (₹ in crore)	Short collection (₹ in crore)
2006-07	1,41,90,982	91,099	14,965	9.23	6.85	2.38
2007-08	1,51,91,093	15,98,473	17,848	21.14	10.68	10.46
2008-09	1,60,91,196	3,74,479	15,544	30.15	14.21	15.94
2009-10	1,69,17,733	1,91,049	23,058	39.38	19.46	19.92
2010-11	1,75,43,806	2,54,728	33,938	43.51	20.31	23.20
TOTAL		**25,09,828**	**1,05,353**	**143.41**	**71.51**	**71.90**

The number of theft cases in GESCOM and HESCOM were showing an increasing trend during the last five years. The total number of theft cases in GESCOM increased from 2,470 in 2006-07 to 25,014 in 2010-11. In HESCOM, the number of theft cases increased from 2,510 in 2006-07 to 5,019 in 2010-11. However, in MESCOM the number of theft cases, which was 1,045 in 2006-07 marginally increased to 1,144 by 2010-11. We, however, observed that during 2010-11, the percentage of AT&C losses in MESCOM was 10.81, while it was almost double in GESCOM and HESCOM at 19.89 and 22.87 respectively.

The checking of consumers' had never crossed five *per cent* of the total number of consumers in any of the ESCOMs in any of the years (except in BESCOM for 2007-08) under review period.

Against an amount of ₹ 143.41 crore assessed for recovery during 2006-11, an amount of ₹ 71.90 crore was pending recovery at the end of March 2011.

[48] **Insulated power conductors twisted and laid together around an insulated wire by isolating the power and neutral conductor forms the Aerial Bunched Cables.**

Performance of raid teams

2.1.11.16 In order to minimise the cases of pilferage/loss of energy and to save the Company from sustaining heavy financial losses on this count, Section 163 of Electricity Act 2003 provides that the licensee may enter the premises of a consumer for inspection and testing the apparatus (connected load and meters). Vigilance team of ESCOMs was entrusted with the work of conducting raids of checking the premises of the consumers. The details of raids conducted during the period 2006-11 are given below:

Table 16 **Amount: ₹ in crore**

Year	Total number of consumers as on 31 March	No. of consumers checked	Assessed amount	Realised amount	Unrealised amount	Percentage of checking to total number of consumers
2006-07	1,41,90,982	1,02,749	22.22	8.33	13.89	0.72
2007-08	1,51,91,093	1,11,927	33.95	12.61	21.34	0.74
2008-09	1,60,91,196	1,68,517	40.10	17.05	23.05	1.05
2009-10	1,69,17,733	1,57,921	82.54	29.03	53.51	0.93
2010-11	1,75,43,806	1,83,472	73.74	33.11	40.63	1.05

The overall percentage of checks was about one *per cent* of the total consumers.

Billing efficiency

2.1.12 The ESCOMs are required to take the reading of energy consumption of each consumer at the end of the notified billing cycle. After obtaining the meter readings, bills for consumption of energy are issued to the consumers. Sale of energy consists of two parts *viz.,* metered and assessed units. All consumers are billed on monthly basis. The Government of Karnataka (GoK), has extended free supply for consumption in Irrigation Pump sets (up to 10 HP) and to all Bhagya Jyothi (BJ)/Kutira Jyothi (KJ) consumers (up to 18 units per month), as a policy. The cost of supply to these consumers is reimbursed by GoK.

The efficiency in billing of energy lies in distribution/sale of maximum energy by the ESCOMs to its consumers. The details of metered and unmetered (assessed) energy sales are given below:

Table 17 **in Million Units**

Sl. No.	Particulars	2006-07	2007-08	2008-09	2009-10	2010-11
1	Energy available for sale (after transmission and distribution losses)	38,190.46	38,103.38	39,893.17	40,942.10	44,592.03
2	Energy sold					
	(a) Assessed sales (unmetered category)[49]	11,180.54	10,216.46	11,091.99	11,184.09	12,333.35
	(b) Energy billed (metered sales)	17,272.28	19,771.47	21,133.39	22,626.16	24,881.75
	(c) Total sales	28,452.82	29,987.93	32,225.38	33,810.25	37,215.10
3	Assessed sales as a percentage of total sales (Sl.No.2(a) /Sl.No.2(c)	39.30	34.07	34.42	33.08	33.14
4	Billed sales as a percentage of total sales (Sl.No.2(b)/Sl.No.2(c)	60.70	65.93	65.58	66.92	66.86

KERC has been emphasising 100 *per cent* metering of all installations including BJ/KJ and IP sets in its tariff orders.

Estimation of agricultural consumption

2.1.12.1 As per the methodology adopted by the ESCOMs, the consumption of Irrigation Pump sets (IP sets) was assessed on the basis of readings obtained from meters fixed at selected distribution transformers (DTRs), predominantly feeding IP sets and the readings so obtained were extrapolated to the entire population of pump sets. The progress of metering of DTRs in the ESCOMs at the end of March 2011 is given below:

Table 18

ESCOM	No. of DTRs existing	Metered DTRs	Unmetered DTRs	Percentage of unmetered DTRs
BESCOM	1,51,458	55,589	95,869	63.30
CESC	52,226	11,008	41,218	78.92
GESCOM	50,145	19,564	30,581	60.99
HESCOM	90,994	39,341	51,653	56.77
MESCOM	35,340	15,746	19,594	55.44
	3,80,163	**1,41,248**	**2,38,915**	**62.85**

KERC while disagreeing with the above method of assessment had been directing the ESCOMs repetitively to install meters in all DTRs predominantly supplying power to IP sets and to put in place a mechanism to obtain periodical readings of such meters for accurate assessment of IP sets' consumption in its various tariff orders. Nevertheless, as at the end of March 2011, 62.85 *per cent* of DTRs remained unmetered. As could be seen from

[49] **Unmetered categories: BJ/KJ, IP sets and street light installations.**

the Paragraph 2.1.8.7 *supra*, with about 70 *per cent* of IP sets not metered, an effective mechanism to assess energy consumption of this sector was absent.

Non-levy of Additional Security Deposit (ASD)

2.1.12.2 As per Section 47 of Electricity Act 2003, a distribution licensee may require any person, who requires supply of electricity in pursuance of Section 43 of the Act, to give reasonable security, as may be determined by regulations. As per Clause 4.1 of KERC (Security Deposit) Regulations, 2007 all consumers shall at all times maintain with the licensee an amount equivalent to fixed charge plus energy charges corresponding to consumption for two months (2 MMD) as security deposit. The licensee should review the adequacy of the amount of security deposit in the first quarter of every year based on the average consumption for the preceding year. After review, the licensee is required to give notice to the consumer concerned for additional security deposit (ASD), if the security deposit falls short of two months' average monthly consumption of the preceding financial year. The additional security deposit is to be paid by the consumer within 15 days of the notice. In the event of consumer failing to pay additional security, the supply is to be disconnected.

In the test checked divisions of BESCOM, it was observed that no review was done to assess the adequacy or otherwise of the security deposits. In respect of GESCOM, a test check of records of four divisions revealed that additional security deposit amounting to ₹ 11 crore was not obtained from consumers as at the end of March 2011. Similarly, additional security deposit amounting to ₹ 5.71 crore was pending collection in MESCOM as at the end of March 2011.

Penal interest liability due to non-refund of excess security deposit

2.1.12.3 Clause 6.2 of KERC (Security Deposit) Regulations, 2007 stipulates that the ESCOMs, based on the adequacy of the security deposits shall refund the excess security deposit held over and above 120 *per cent* of 2 MMD through adjustments in the energy bills of the consumers in the first quarter of the subsequent year. In case the ESCOMs fail to refund the excess security deposits, penal interest at one *per cent* per month on the excess security deposits for the days of delay shall be payable to the consumers for the delays beyond the specified periods.

In test-checked three divisions of GESCOM, it was observed that security deposits of ₹ 77.49 lakh held in excess during the last three years was not refunded to the consumers, resulting in liability of penal interest of ₹ 25.94 lakh.

Payment of electricity tax

2.1.12.4 In accordance with State Government notification (March 2003) of the Karnataka Electricity (Taxation on Consumption) Act, 1959, with effect from April 2003, electricity tax was to be levied at 5 *per cent* on the electricity charges payable (excluding arrears) by all consumers, with the exception of consumers under agricultural IP sets (up to and inclusive of 10 HP), BJ/KJ and

Central Government installations. As per Section 4 of the Act, a licensee may be granted a rebate not exceeding two *per cent* of the tax collected for prompt payment. The rate of rebate prescribed by Government was 1.5 *per cent* up to December 2009 and 0.5 *per cent* from January 2010.

We observed that rebates of ₹ 21.93 crore and ₹ 1.25 crore in respect of BESCOM and MESCOM were receivable from Government (September 2011).

Power factor

2.1.12.5 Power factor is a measurement of how efficiently a facility uses electrical energy. A high power factor means that electrical capacity is utilised effectively while a low power factor indicates poor utilization of electric energy. Low power factor can cause over-loading of the equipment, low voltage conditions, greater line losses, and increased heating of equipment that can shorten service life. The tariff makes it obligatory on the part of the consumer to maintain an average power factor of more than 0.85.

As per clause 23 of Conditions of Supply of Electricity of the Distribution Licensees, if the power factor of the installation is found to be less than 0.85, a surcharge, as applicable, is required to be levied till such time the additional capacitors are installed.

We observed that in two test checked divisions of GESCOM, surcharge amounting to ₹ 71.62 lakh was not recovered from 4,556 public water supply installations though capacitors were not installed to increase the power factor.

Special incentive scheme for HT industries

The ESCOMs offered undue benefits to the tune of ₹ 116.46 crore to HT consumers in spite of poor financial position and deficit in power supply.

2.1.12.6 The erstwhile KPTCL had introduced (1999) an incentive scheme called Special Incentive Scheme for industrial consumers through which the industrial consumers were supplied power with rebate of 50 paise per unit above the base units. The scheme was to improve sales of ESCOMs and to woo back the industrial consumers to the grid,

KPTCL was unbundled (June 2002) and ESCOMs were formed. The KPTCL submitted (June 2002) a fresh proposal for revival of the scheme. KERC considered the proposal of KPTCL and provisionally cleared the continuation of the scheme up to October 2002 subject to the condition that the finances of the ESCOMs were not adversely affected and the ESCOMs should make a fresh application after examining the scheme. ESCOMs filed fresh applications and the Commission passed an order in October 2002 for continuation of the scheme till the next tariff revision.

ESCOMs discontinued the scheme from October/November 2002 without seeking the approval of the Commission. The Commission, however, held that unilateral discontinuation of the scheme was illegal and directed (January 2003) the ESCOMs to continue the scheme till it passed an alternate order.

However, the ESCOMs (except GESCOM) submitted (March 2003) a proposal to re-introduce the scheme, which was approved (December 2003) by KERC. ESCOMs again proposed continuation of the scheme in the tariff filing for the year 2006. The special incentive scheme continued up to tariff order of November 2009. As the ESCOMs were incurring losses under the scheme adversely affecting their finances, KERC approved the proposal for discontinuation of the scheme in its tariff order 2010, from December 2010.

We observed that during the period April 2006 to December 2010, the loss of revenue owing to continuation of the scheme was ₹ 116.46 crore[50]. The ESCOMs, after discontinuing the scheme (October/November 2002) without obtaining the approval of the KERC, had submitted proposal (March 2003) to reintroduce the scheme. The ESCOMs did not approach KERC to discontinue the scheme inspite of their financial position being precarious and the demand-supply gap widening between 2006 and 2010.

Revenue collection efficiency

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

Consumers could make payments against the bills by cash, cheques or by demand draft. In respect of LT services, electricity bills are generally collected by the revenue cashiers except in some areas where collection work is entrusted to private collection agencies. HT consumers are required to pay charges within 30 days while LT consumers are to pay within 15 days from the date of billing.

Collection of revenue through e-Seva

2.1.13.1 Any Time Payment (ATP) machines have been installed in various locations of Mysore City, CESC and BESCOM. In addition, centres such as 'Bangalore One' and 'Tumkur One' were also collecting payments towards electricity bills of BESCOM. MESCOM has concluded an agreement with the Director, e-Seva, Government of Karnataka for enabling the services of 'Karnataka One' Project.

2.1.13.2 The table below indicates the amount outstanding at the beginning of the year, revenue assessed during the year, revenue collected and the balance at the end of the year in each of the five years ended 2010-11.

[50] **₹ 58.29 crore in BESCOM, ₹ 18.39 crore in CESC, ₹ 1.50 crore in GESCOM, ₹ 32.31 crore in HESCOM and ₹ 5.97 crore in MESCOM.**

Table 19 **₹ in crore**

Sl. No.	Particulars	2006-07	2007-08	2008-09	2009-10	2010-11[51]
1	Outstanding at the beginning of the year	3,406.55	3,998.48	5,126.01	5,495.89	6,319.62
2	Revenue assessed/Billed during the year	10,152.85	11138.98	11,617.06	13,321.84	16,605.99
3	Total amount due for realisation (Sl.No.1+ Sl.No.2)	13,559.40	15,137.46	16,743.07	18,817.73	22,925.61
4	Amount realised during the year	9,560.92	10011.45	11,247.18	12,498.11	16,547.41
5	Amount written off during the year	0	0	0	0	0
6	Outstanding at the end of the year	3,998.48	5,126.01	5,495.89	6,319.62	6,378.20
7	Percentage of amount realised to total dues (Sl.No.4/Sl.No.3)	70.51	66.14	67.18	66.42	72.18
8	Arrears in terms of number of months assessment (Sl.No.6/Sl.No.2/12 months)	4.73	5.52	5.68	5.69	4.61

The ESCOM-wise outstanding amounts are given in **Annexure 14**. It could be observed from the Annexures that:

- MESCOM had better realisation efficiency whereas GESCOM had the lowest realisation efficiency in 2010-11. Arrears in terms of months' revenue were 2.81 in MESCOM, whereas it was 8.98 in GESCOM (provisional).
- analysis of group-wise debts outstanding as on 31 March 2011 showed that an amount of ₹ 217.61 crore[52] was due from permanently disconnected installations in ESCOMs.

The dues from consumers increased from ₹ 3,998.48 crore in 2006-07 to ₹ 6,378.20 crore in 2010-11. An amount of ₹ 217.61 crore was due from permanently disconnected installations.

- dues of ₹ 6,378.20 crore at the end of March 2011 included IP sets dues, which were frozen, amounting to ₹ 3,250.47 crore. The State Government had decided to reimburse IP set dues from August 2008 onwards and directed that 100 *per cent* metering of all IP sets was to be done within one year from the date of order and discontinuation of power supply to those farmers resisting installation of meters. Further, the beneficiaries were required to clear the dues (principal) in eight instalments over a period of two years, for whom the interest would be waived off. We observed that the ESCOMs could not achieve 100 *per cent* metering of IP sets and as such the dues of ₹ 3,250.47 crore remained outstanding (September 2011). It is pertinent to mention here that an amount of ₹ 31.79 crore, being the frozen dues collected from farmers, was refunded to them by MESCOM during 2010-11 on the basis of directions of Government.

[51] **CESC and GESCOM figures for the year 2010-11 are provisional. Closing balance of MESCOM for the year 2010-11 is as per DCB as ARR statement for the year 2010-11 is not available.**

[52] **BESCOM (₹ 102.24 crore), CESC (₹12.92 crore), GESCOM (₹ 65.91 crore), HESCOM (₹ 29.52 crore) and MESCOM (₹ 7.02 crore).**

Supply to consumers with heavy arrears

2.1.13.3 As per KERC (Electricity Supply) Code 2004 supply to the consumer was to be disconnected in case the electricity dues were not deposited within due date indicated in the bill.

In respect of water supply and street light/public lighting installations dues of ₹ 2,056.66 crore[53] is pending recovery (March 2011).

Financial management

2.1.14 One of the major objectives of the National Electricity Policy, 2005 was ensuring financial turnaround and commercial viability of electricity sector. The financial position of each ESCOM for the five years ended 2010-11 is given in **Annexures 15(a) to (f).**

The important parameters are as follows:

Table 20 **₹ in crore**

Particulars	Year	BESCOM	CESC	GESCOM	HESCOM	MESCOM	Consolidated
Paid up capital, Reserves & Surplus	2006-07	890.34	187.02	250.70	540.95	307.39	2,176.40
	2010-11	1,549.77	476.78	714.51	1,248.42	497.35	4,486.83
Borrowings	2006-07	711.08	189.65	370.08	861.05	218.87	2,350.73
	2010-11	1,764.63	296.99	578.83	1537.43	381.02	4,558.90
Current liabilities & provisions	2006-07	1,375.76	733.88	977.72	914.96	534.57	4,536.89
	2010-11	1,857.02	1,746.35	2,155.12	2,286.62	1,090.65	9,135.76
Gross fixed assets (including CWIP)	2006-07	2,400.62	714.78	914.05	1,561.12	674.44	6,265.01
	2010-11	4,509.84	1,209.92	1,779.99	2,791.58	1,330.22	11,621.55
Current assets, loans and advances	2006-07	2,731.73	970.27	1,269.95	1,678.14	919.29	7,569.38
	2010-11	3,553.50	1,670.12	2,094.76	2,701.63	1,336.75	11,356.76
Accumulated losses	2006-07	0	0	0.09	0	0	0.09
	2010-11	350.68	319.25	453.13	723.80	0	1,846.86
Net worth	2006-07	890.34	187.02	250.61	540.95	307.39	2,176.31
	2010-11	1,199.09	157.53	261.38	524.62	497.35	2,639.97
Debt-equity ratio	2006-07	3.45:1	6.47:1	1.24:1	3.38:1	2.18:1	2.96:1
	2010-11	2.37:1	1.63:1	1.35:1	1.80:1	2.42:1	1.90:1

The following observations are made:

Owing to the losses incurred by the ESCOMs the accumulated loss (consolidated), which was ₹ 0.09 crore in 2006-07 increased to ₹ 1,846 crore in 2010-11.

- The borrowings in all the ESCOMs increased between the years 2006-07 and 2010-11 despite increase in capital and reserves and surplus. Non-realisation of the dues of consumers using Irrigation Pump sets, water supply and public lighting installations was the main reason for the increased borrowings.
- The current liabilities and provisions had almost doubled from 2006-07 level. The current liabilities and provisions in GESCOM and HESCOM had increased drastically by 2011 because of purchase of energy in 2008-11 at high cost.

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[53] **BESCOM (₹ 966.99 crore), CESC (₹ 325.49 crore), GESCOM (₹ 384.03 crore), HESCOM (₹ 251.19 crore) and MESCOM (₹ 128.96 crore).**

- The net worth had decreased in HESCOM and CESC.
- Owing to the losses incurred by the ESCOMs (except MESCOM) the accumulated loss (consolidated) which was ₹ 0.09 crore in 2006-07 increased to ₹ 1,846.86 crore by 2010-11.
- As per KERC (Terms and Conditions for Determination of Tariff for Distribution and Retail Sale of Electricity) Regulations, 2006, the Debt- Equity ratio of 70:30 (2.33:1) was required to be maintained for financing future projects. The overall debt-equity ratio of the ESCOMs was 2.96:1 in 2006-07, which decreased to 1.90:1 in 2010-11.
- The MESCOM performed creditably in comparison with the other ESCOMs.

2.1.14.1 The particulars of cost of electricity *vis-à-vis* revenue realisation per unit in each of the ESCOM alongwith the consolidated position for the five years ending 2010-11 are given in **Annexures 16(a) to (f).** All the ESCOMs suffered loss in 2008-09 on account of higher volumes of short term purchases of power at high cost. We observed that the expenditure on procurement of power had increased in all ESCOMs drastically over the years due to increase in demand for power, forcing the ESCOMs to resort to short term power purchases and high cost energy. Besides, the expenditure on debt servicing showed an increasing trend during the review period in all ESCOMs on account of increased power purchase.

During 2010-11 also, the ESCOMs incurred losses (before adjustment of prior period items) due to belated filing of tariff petition and consequent implementation of tariff hike only for four months. Besides, KERC while revising the tariff for 2010-11, approved the increased average cost of 45 paise per unit. KERC however, decided to pass on 22 paise per unit in the year 2010-11 and the balance 23 paise per unit was allowed to be recovered (as regulatory asset) in the years 2011-12 and 2012-13. This also had an impact on the profitability of ESCOMs.

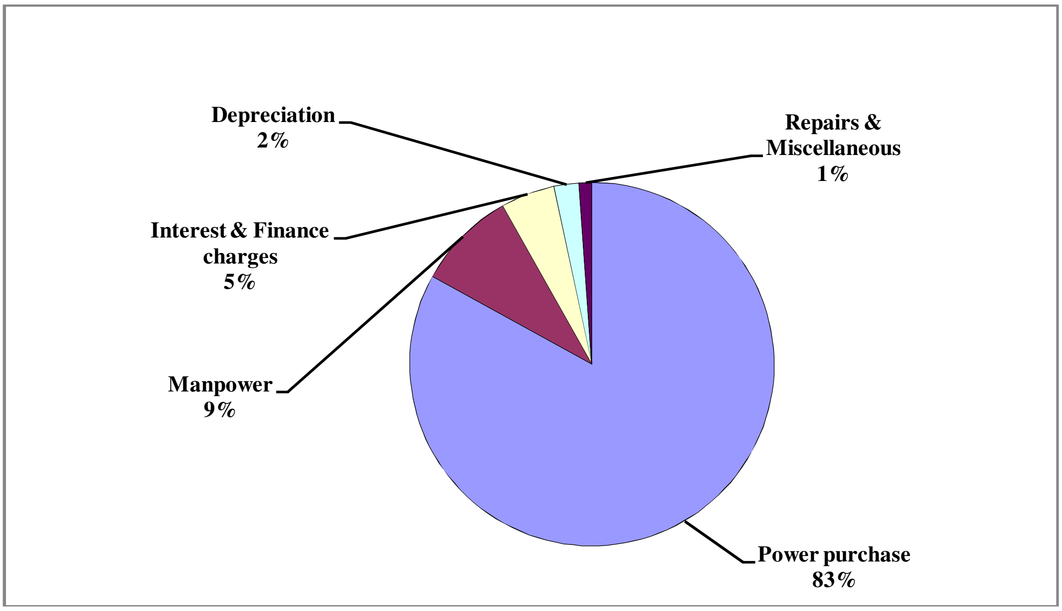
KERC, while fixing the tariff rates, was considering the probable subsidy release from State Government towards gap subsidy. Further, at the end of every financial year, KERC undertakes annual performance review of ESCOMs/true-up exercise and at every such exercise, the commission has been directing the Government to release additional subsidy to ESCOMs to improve the financial strength of ESCOMs. The State Government however, has not been reimbursing the subsidy fully. This was one of the reasons for ESCOMs incurring losses.

Elements of cost and revenue

2.1.14.2 The break-up of cost for 2010-11 (consolidated for all ESCOMs) in percentage is given in the pie-chart below:

Elements of cost

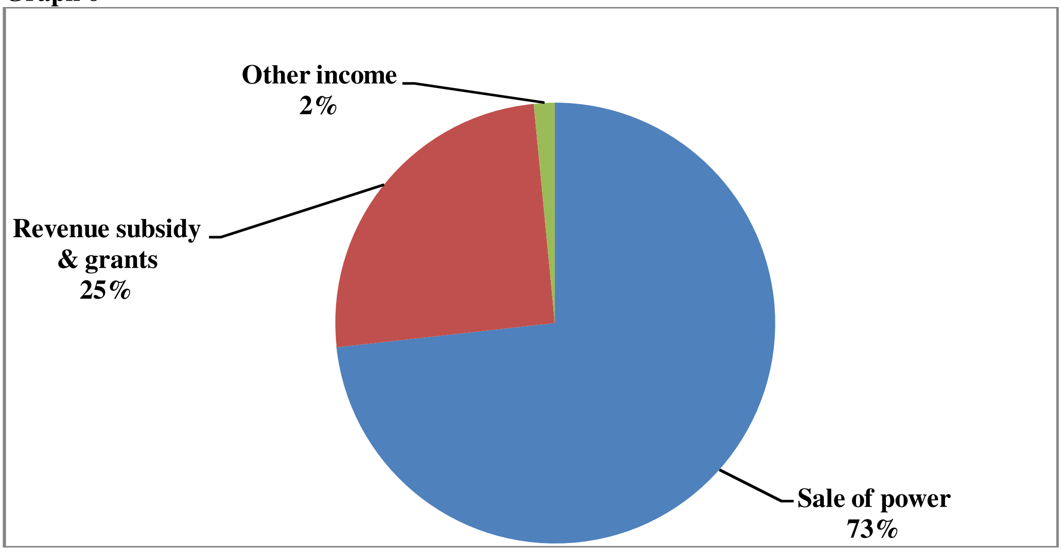
Graph 5



2.1.14.3 The break-up of revenue for 2010-11 (consolidated for all ESCOMs) in percentage is given in the pie-chart below:

Elements of revenue

Graph 6



The expenditures on procurement of power and establishment were the major elements of cost in 2010-11, which represented 83 *per cent* and 9 *per cent* respectively of the total cost in that year. Owing to increase in borrowings from ₹ 2,350.73 crore in 2006-07 to ₹ 4,558.90 crore in 2010-11 the interest and finance charges increased from ₹ 414.34 crore in 2006-07 to ₹ 860.19 crore in 2010-11.

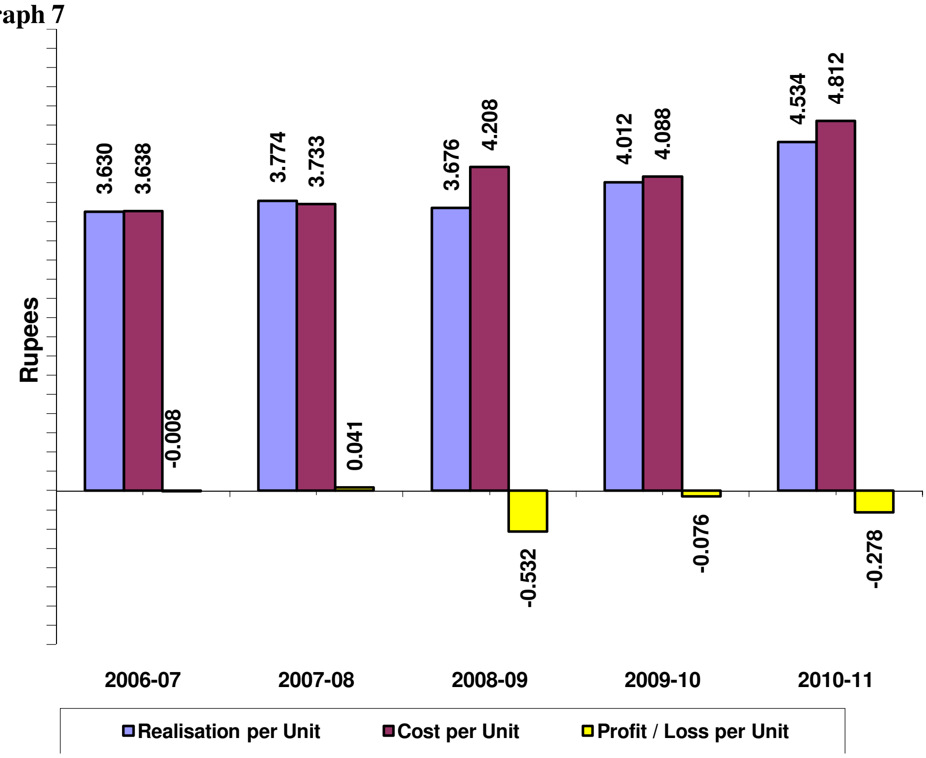
The revenue from sale of power and subsidy from the Government were the major components of revenue in 2010-11, which represented 73 *per cent* and 25 *per cent* respectively of the total revenue.

We observed that revenue from sale of power (excluding subsidy) showed an increasing trend, registering an increase of 47.60 *per cent* during the period 2006-2011. Substantial increase in revenue from sale of power (excluding subsidy) was noticed in 2009-10 and 2010-11 mainly due to the hike in tariff[54] in the revised tariff orders of December 2009 and December 2010 respectively. Similarly, subsidy component of revenue also increased drastically (increase by 145.39 *per cent* in 2010-11 in relation to 2007-08), as the Government had decided to reimburse the energy charges of Irrigation Pump sets from August 2008.

Recovery of cost of operations

2.1.14.4 The profit/loss per unit of the ESCOMs during the last five years ending 2010-11 are shown in the graph below:

Graph 7



The following observations are made:

- The ESCOMs were able to recover the cost of operations only in 2007-08.

[54] ESCOMs were billing its consumers during September 2005 to November 2009 at the rates approved in tariff order 2005.

- BESCOM, GESCOM and HESCOM had incurred losses[55] of ₹ 1.68 crore, ₹ 2.82 crore and ₹ 31.22 crore respectively in 2006-07. However, CESC and MESCOM had made profits of ₹ 2.14 crore and ₹ 10.71 crore respectively (refer **Annexures 16 (a) to (e)**).
- All the ESCOMs incurred losses in 2008-09 because of procurement of high cost energy and the total loss was ₹ 1,717.32 crore[55]. The loss per unit was ₹ 0.532, as indicated in the graph above.
- MESCOM was able to earn profit (₹ 24.04 crore) in 2009-10, whereas the total loss of other ESCOMs amounted to ₹ 282.28 crore; the purchase of power at high cost and lower realization were the major reasons for losses.
- All the ESCOMs had suffered losses in 2010-11, totaling ₹ 745.25 crore.

2.1.15 Efficient fund management serves as a tool for decision making, for optimum utilisation of available resources and borrowings at favourable terms at appropriate time. The financial management of the ESCOMs includes billing, collection, borrowing, interest recovery/payment and other related transactions. While revenue and billing have been dealt with in the preceding paragraphs, the other areas are discussed below.

The details of cash inflow and outflow of each of the ESCOMs for five years ending 31 March 2011 are given in **Annexures 17 (a) to (e).**

We observed that from 2008-09 onwards the ESCOMs had resorted to purchase of power at high cost. Realisation of the entire cost of power was not possible, as the tariff rates of consumers were fixed. The high cost purchases affected the profitability of the ESCOMs and the cash flow position. Short term borrowings and funds available were used for working capital and debt servicing.

2.1.15.1 Instances of imprudent financial management noticed are detailed below:

Interest on electricity tax

2.1.15.2 Prior to June 2006 the electricity tax collected by GESCOM from the consumers used to be adjusted against subsidy payable by the State Government. In July 2005 the Government had directed ESCOMs to remit electricity tax collected from consumers to the treasury. Accordingly, GESCOM started remitting electricity tax collected from consumers to treasury from June 2006. It was, however, observed that GESCOM was not regular in payment of electricity tax during the period December 2006 to March 2008.

The Chief Electrical Inspectorate levied (August 2008) interest of ₹ 1.75 crore for delay in remittance of tax for the above period. GESCOM requested (October 2008) the Chief Electrical Inspectorate to waive the interest

[55] **Before adjustment of prior period items and taxes.**

considering the proposal for adjustment against subsidy receivable from Government. The Energy Department clarified (January 2009) that interest on electricity tax could not be waived and the Company was bound to pay the interest. Accordingly, interest of ₹ 1.22 crore (as worked out by the GESCOM) on belated payment of electricity tax was paid in June 2009. The Electrical Inspectorate had also claimed (March 2011) interest of ₹ 5.21 crore for delayed remittance of electricity tax for the period from September 2008 to December 2010. The Company was yet to remit the interest (May 2011).

The Electrical Inspectorate had levied penalty of ₹ 9.63 crore, ₹ 1.11 crore, ₹ 6.66 crore and ₹ 3.38 crore respectively from BESCOM, CESC, HESCOM and MESCOM for delayed/non-remittance of electricity tax within the stipulated time frame.

Electricity Tax, being a statutory charge collected from the consumers, should have been remitted to the Government in time.

Procurement of aerial fuse boards

2.1.15.3 With a view to reducing the line losses and increasing the reliability and quality of power, the management had decided (March 2005) to replace conventional porcelain aerial fuse boards with Fiber Glass Reinforced Plastic (FGRP) aerial fuse boards in BESCOM. BESCOM procured 1.90 lakh FGRP aerial fuse boards of different capacities during 2005-06, which were fully utilised. The field offices then requisitioned a further quantity of 5.96 lakh boards. Tenders were invited (April 2007) for different capacities based on decision (April 2007) to procure three lakh FGRP fuses. Purchase orders were placed (October /November 2007) for ₹ 25.47 crore. The fuses were delivered between December 2007 and March 2009.

We observed that out of 2.44 lakh boards of 30 amps capacity and 55,600 boards of 60 amps capacity of FGRP aerial fuse boards procured by BESCOM, 97,365 and 34,730 boards respectively have been lying un-utilised since March 2009. Some of the divisions holding the stock had declared these materials as obsolete and unserviceable and as such the serviceability of the remaining fuse boards valued at ₹ 11.15 crore was doubtful.

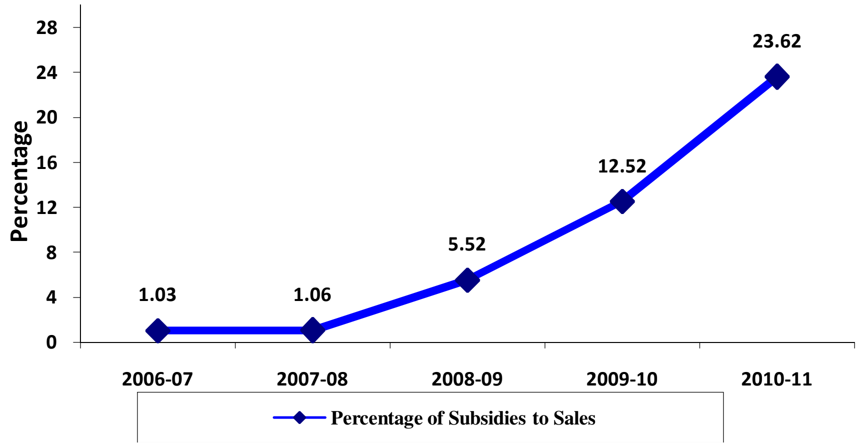
Subsidy support and cross subsidisation

2.1.16 The recovery of cost of service from consumers makes the power sector sustainable. The State Government extends financial support through subsidy to ensure supply of power to specific category of consumers at concessional rates of tariff.

Subsidy support

2.1.16.1 The graph below indicates revenue subsidy (concessional tariff of KJ/BJ and IP set consumers) reimbursed by the State Government as a percentage of sales in the last five years ending 31 March 2011.

Graph 8



The subsidy which was ₹ 87.27 crore during 2006-07 increased to ₹ 3,819.66 crore by 2010-11 as discussed in Paragraph 2.1.16.6.

2.1.16.2 The details of subsidy received and due from the Government in the last five years are detailed below:

Table 21 **₹ in crore**

Particulars	2006-07	2007-08	2008-09	2009-10	2010-11	Total
Receivable at the beginning of the year	136.36	247.71	289.08	491.57	1,226.48	136.36
Receivable from State Government in the year	1,783.65	1,733.00	1,925.87	2,797.75	4,252.66	12,492.93
Total	1,920.01	1,980.71	2,214.95	3,289.32	5,479.14	12,629.29
Received during the year	1,672.30	1,691.63	1,723.38	2,062.84	4,025.44	11,175.59
Receivable at the close of the year	247.71	289.08	491.57	1,226.48	1,453.70	1,453.70

Against the subsidy demand[56] of ₹ 12,492.93 crore during 2006-11, ₹ 11,175.59 crore was released by State Government. The balance subsidy receivable kept increasing between 2006-07 and 2010-11 indicating that the State Government had not been reimbursing the subsidy due in each year fully.

Section 65 of the Electricity Act, 2003 requires the State Governments to pay subsidy in advance. Karnataka Electricity Regulatory Commission (Manner of payment of subsidy by State Government) Regulations, 2007 stipulates that the licensee is required to charge subsidised tariff to a consumer or class of consumers for whom the Government has committed subsidy, subject to subsidy being released in advance every quarter. In case subsidy is not received as per estimate from the State Government in advance before the issue of the electricity bill, the ESCOMs shall raise electricity bills at tariffs as determined by the Commission without subsidy. We observed that neither the State Government had released subsidy in advance nor the ESCOMs issued bills to the consumers.

[56] **Includes only Gap subsidy, Tariff subsidy (BJ/KJ) and IP set subsidy.**

Cross subsidisation

The level of cross subsidy was beyond the limits prescribed in the National Tariff Policy to agricultural, domestic, commercial establishments, motive power and temporary connection category consumers.

2.1.16.3 Section 61 of Electricity Act 2003 stipulates that the tariff should progressively reflect the average cost of supply (ACOS) of electricity and also reduction of cross subsidy in a phased manner as specified by the Commission. The National Tariff Policy envisaged that the tariff of all categories of consumer should be within a range of plus or minus 20 *per cent* of the ACOS by the year 2010- 11.

2.1.16.4 The customers in the commercial category cross subsidised the category of consumers coming under agriculture and lift irrigation schemes in all the five years (2006-11). In all the ESCOMs the cross subsidy to the consumers coming under the categories of agriculture, domestic, commercial establishments, motive power and temporary connections was not within the range of *plus* or *minus* 20 *per cent* [57]of the ACOS, as envisaged under the National Tariff Policy, as at end of March 2011.

2.1.16.5 The details of cross subsidy of the ESCOMs for 2006-07 (year in which there was no purchase at high cost) and 2010-11 (year in which there was purchase of power at high cost) are given in **Annexures 18(a) to (f)**.

The Government reimbursed electricity charges up to 18 units in respect of KJ/BJ consumers and fully in respect of IP set (up to 10 HP) consumers based on claims preferred by ESCOMs. The re-imbursement received on these counts in 2006-07 was ₹ 87.27 crore, which increased to ₹ 3,819.66 crore in 2010-11. The amount not recovered through tariff rates of consumers and re-imbursement by Government was ₹ 2,163.16 crore in 2006-07 and ₹ 2,073.23 crore in 2010-11.

Despite cross subsidization and re-imbursement by the Government, the cost of supply was not fully recovered by the ESCOMs. The State Government was forced to bridge the difference by way of further financial support, known as gap subsidy. The gap subsidy released during 2006-07 was ₹ 1,696.38 crore and during 2010-11 was ₹ 433 crore.

2.1.16.6 The details of profit before tax[58] and subsidy (Tariff/Gap) in respect of ESCOMs are given below:

Table 22 **₹ in crore**

Description	2006-07	2007-08	2008-09	2009-10	2010-11
Profit /loss (-) of ESCOMs	(-)1,671.29	(-)1,662.68	(-)3,548.16	(-)3,004.83	(-)4,534.08
Subsidy in respect of KJ/BJ and IP set connections	87.27	100.32	566.43	1,506.60	3,819.66
Net profit / loss (-)	**(-)1,584.02**	**(-)1,562.36**	**(-)2,981.73**	**(-)1,498.23**	**(-)714.42**
Gap subsidy	1,696.38	1,632.68	1,359.44	1,291.15	433.00
Net profit / loss (-) after all subsidies	**112.36**	**70.32**	**(-)1,622.29**	**(-)207.08**	**(-)281.42**

[57] ESCOM-wise / category-wise details for 2006-07 and 2010-11 are given in Annexures 18 (a) to (f).
[58] ESCOM-wise profitability is given in Annexure 16(a) to (e).

Despite substantial increase in subsidy, the ESCOMs incurred losses during 2008-09 to 2010-11 mainly due to purchase of energy at high cost.

The ESCOMs would have suffered heavy losses without subsidy support in all the years. The profits in 2006-07 and 2007-08 were because of gap subsidy. In the remaining years, despite substantial increase in subsidy (both reimbursements towards KJ/BJ, IP and Gap), ESCOMs incurred losses continuously from 2008-09 to 2010-11, mainly due to purchase of energy at high cost[59].

The objective of the reform policy (1997) of the Government of Karnataka was to release the scarce Government resources deployed in the power sector, to other areas of greater priority. Even after a lapse of more than 13 years from the date of reform policy, the dependence on Government subsidy showed no let up; in fact, it has been increasing over the years.

Additional subsidy

The State Government had not paid additional subsidy of ₹ 2,574.28 crore approved by KERC for 2007-08 and 2008-09.

2.1.16.7 KERC in its tariff order 2009 (November 2009) while carrying out Annual Performance Review (APR) for financial years 2007-08 and 2008-09, had directed the Government to release additional subsidy of ₹ 2,574.28 crore in twelve monthly installments (from December 2009) in order to ensure that the ESCOMs earned required Return on Equity. The ESCOMs were also directed to take up the matter with State Government for release of additional subsidy. However, the State Government filed a review petition before KERC seeking review/modification of this direction; in response to which the Commission modified the number of installments for release of subsidy from twelve to thirty-six payable from January 2011. The Government is yet to comply with this Order (September 2011).

Similarly, the Commission on ESCOMs' application for APR for the year 2009-10 while carrying out truing-up of Annual Revenue Requirement of 2009-10 had ordered (tariff order 2010 of December 2010) that the Government was liable to pay additional subsidy of ₹ 2,983.52 crore to ESCOMs. The Government had released (March 2011) an amount of ₹ 2,506.82 crore and the balance of ₹ 476.70 crore is pending till date (September 2011).

Tariff fixation

2.1.17 The financial viability of the ESCOMs depends upon generation of surplus (including fair returns) from the operations to finance their operating needs and future capital expansion programmes by adopting prudent financial practices. Revenue collection is the main source of generation of funds for the Company. While other aspects relating to revenue collection have been discussed in preceding paragraphs, the issues relating to tariff are discussed here under.

[59] **The extra cost incurred on purchase of short term power amounted to ₹ 3,058.93 crore and towards Unscheduled Interchange charges was ₹ 793.93 crore during 2008-11 as enumerated at Paragraph 2.1.10.4.**

The tariff structure of the power distribution companies are revised by the respective State Electricity Regulatory Commission (SERC) after the objections, if any, received against Annual Revenue Requirement (ARR) petition filed by them within the stipulated date. According to Section 27 (7) of the Karnataka Electricity Reform Act, 1999, an annual filing of expected revenues from charges is to be done for each year 120 days before the commencement of the respective year for each year and the Commission (KERC) has to either approve the tariff proposed by the ESCOMs or provide an alternative tariff. The Commission accepts the applications filed by the ESCOMs with such modifications/conditions as may be deemed appropriate and after considering all suggestions and objections from public and other stakeholders issues an order containing targets for controllable items and the tariffs for the year, within 120 days of the receipt of the application.

The National Tariff Policy mandated implementation of Multi Year Tariff (MYT) for tariffs to be determined from 1 April 2006 onwards. In pursuance of the tariff policy, KERC had issued MYT Regulations in May 2006. According to these Regulations, MYT approach was to be implemented from April 2007 and the first control period was three years. Under the MYT framework, the Commission determines the tariff year-wise, for each year of the control period at the beginning of the control period itself. In the case of retail consumer tariff, the Expected Revenue from Charges (ERC)/Annual Revenue Requirement (ARR) for the control period of the ESCOMs is approved by the Commission at the beginning of the control period, while the ESCOMs are required to file their application for retail tariff determination every year. The ESCOMs were required to make their first ERC filing under the MYT framework for the first control period of three years commencing from 2007-08 to 2009-10 before the end of November 2006.

2.1.17.1 The table below shows ESCOM-wise due dates for filing ARR, actual date of filing, date of approval of tariff petition and the effective dates of the revised tariffs.

Table 23

Year	Due date of filing	Actual date of filing	Delay in days	Date of approval	Effective date
2006-07	30.11.2005	12.05.2006	163	16.10.2006	ARR was filed by the ESCOMs belatedly. The order of KERC was challenged by ESCOMs before the Appellate Tribunal for Electricity (ATE) and the implementation of tariff order was stayed.
2007-08	30.11.2006	30.11.2006	No delay	11.01.2008	
2008-09	30.11.2007	No ARR was filed by ESCOMs.			
2009-10	30.11.2008	30.06.2009	212	25.11.2009	01.12.2009
2010-11	30.11.2009	13.08.2010	256	07.12.2010	07.12.2010
2011-12	30.11.2010	15.06.2011	197	Not yet approved	

ESCOMs had filed tariff review petitions belatedly in the years 2009-10 and 2010-11, which resulted in delayed implementation of tariff orders. Consequently, they could not generate revenue of ₹ 941.08 crore.

Belated submission of tariff review petitions resulted in delay in finalisation of tariff order with consequent delay in their implementation. The revised tariff to be effective from 1 April of the period concerned could be implemented after a delay of seven to eight months in both the cases. As a result the ESCOMs could not generate additional revenue of ₹ 941.08 crore[60], which was possible through increased tariff.

2.1.17.2 The table below gives details of sales, variable costs, fixed costs, contribution and deficit in recovery of fixed costs for the last five years ending March 2011:

Table 24 **₹ in crore**

Year	Sales (excluding gap subsidy)	Variable costs	Fixed costs	Contribu-tion	Deficit in recovery of fixed costs	Deficit as percentage of sales
(1)	(2)	(3)	(4)	(5) = (2) – (3)	(6) = (4) – (5)	(7)={(6)/ (2)} X 100
2006-07	8,456.47	8,494.01	1,856.97	(-)37.54	1,894.51	22.40
2007-08	9,506.30	9,135.44	2,060.29	370.86	1,689.43	17.77
2008-09	10,257.62	11,389.78	2,173.59	(-)1,132.16	3,305.75	32.23
2009-10	12,030.69	11,218.74	2,602.63	811.95	1,790.68	14.88
2010-11	16,172.99	14,983.68	2,926.26	1,189.31	1,736.95	10.74

The ESCOMs could not recover fixed costs in all the years. The deficiency in recovery of fixed costs, which was ₹ 1,894.51 crore in 2006-07 increased to ₹ 3,305.75 crore in 2008-09. It, however, decreased to ₹ 1,736.95 crore in 2010-11.

Measures improving operational efficiency such as reduction in/control of AT&C losses, conversion of LT lines to HT lines, metering of unmetered connections/defective meters, improving billing and collection efficiency, *etc*., would bridge the gap between cost and revenue. Avoidance of wasteful expenditure and making investments in capital assets judiciously would bring down the fixed cost. These aspects have been discussed separately in the review.

[60] **Refer Annexure 19 for details. The revenue loss is worked out considering that KERC would have taken the same amount of time (about four months) to finalise the tariff in the normal course.**

Major amounts disallowed by KERC

2.1.17.3 The details of major amounts disallowed[61] by KERC in respect of all the ESCOMs are given below:

Table 25 **₹ in crore**

	Interest on belated payment of energy bills	Interest on consumers security deposit	Operation & Maintenance expenses	Total amount disallowed
BESCOM	31.93	18.66	8.21	58.80
CESC	118.66	3.15	73.38	195.19
GESCOM	169.96	5.36	81.08	256.40
HESCOM	162.00	7.37	49.90	219.27
MESCOM	51.50	1.91	59.77	113.18
Total	**534.05**	**36.45**	**272.34**	**842.84**

KERC had disallowed the claim under interest on belated payment of energy bills since interest on working capital was being allowed separately. In respect of Operation and Maintenance expenses, KERC had limited the claim of the ESCOMs on the basis of norms prescribed in Multi Year Tariff Regulations duly considering consumer growth, inflation, growth in consumers and efficiency factors. In respect of allowing interest on security deposits, while ESCOMs paid interest on incremental additions to deposits of consumers and other forms of consumer deposits, KERC considered only the outstanding security deposit of consumers as at end of the previous year without considering incremental additions and other forms of deposit of consumers.

Consumer satisfaction

2.1.18 One of the key elements of the Power Sector Reforms is 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.

2.1.18.1 In accordance with Section 57 and 59 of the Electricity Act, 2003, KERC had framed (May 2004) KERC (Licensees' Standard of Performance) Regulations, 2004 specifying the Standards of Performance (SoP) of a licensee engaged in the activities of distribution of power. The licensee was liable for prosecution or penalty in the event of failing to adhere to the standards and payment of compensation to the aggrieved consumer due to sub-standard performance. The licensee was required to furnish to KERC compliance with the SoP at the end of each quarter.

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[61] **Disallowances by KERC for the period 2008-10, refers to tariff order 2009 and 2010 (in tariff order 2009, Annual Performance Review (APR) of both 2007-08 and 2008-09 was carried out while in tariff order 2010, APR of 2009-10 alone was carried out). The year-wise disallowances are given in Annexure 20.**

We observed that compliance with SoP was being furnished by ESCOMs to KERC regularly.

Redressal of grievances

2.1.18.2 KERC specified the mode and time frame for redressal of grievance in Consumer Grievance Redressal Forum & Ombudsman Regulation, 2004 in pursuance of Section 42(5) the Electricity Act, 2003. The Commission had also prescribed the Standards of Performance (SoP) for ESCOMs in which the time limit for rendering services to the consumers and compensation payable for not adhering to the same were specified. Accordingly, ESCOMs constituted Consumer Grievance Redressal Forums (Forum).

In accordance with Clause 6 of SoP, consumers not satisfied with the services rendered by the jurisdictional field officers, can represent to the Forum within 30 days from the date of lodging complaint. Upon admission of the complaint, the Forum is to cause a notice of hearing and pass orders within a maximum period of sixty days. The Forum is to furnish a quarterly report on the number of complaints received, redressed and pending, within one month of the end of each quarter. A copy of the report is to be furnished to the Ombudsman and the Commission. Further, the Forum and the Ombudsman are to furnish to the Commission, within 15 days at the end of every quarter of the year, the information with respect to the complaints received and disposed of by it in the form prescribed by the Commission.

From the information furnished to audit, we observed that complaints were redressed within the stipulated time. Further, no compensation was paid for failure to redress grievances of consumers.

Energy conservation

2.1.19 Recognizing 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 had enacted the Energy Conservation Act, 2001. The conservation of energy being a multi-faceted activity, the Act provides for both promotional and regulatory roles on the part of various organizations. 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.

KERC had directed ESCOMs to explore the possibility of introducing the following Demand Side Management (DSM) and Energy Efficient Measures. Actions initiated were as follows:

- Installation of automatic switchers for the street lights maintained by the Bruhat Bangalore Mahanagara Palike (BBMP)/Urban Local Bodies in a phased manner, use of LEDs for street lights in selected areas has been taken up as a pilot project. The Company had requested BBMP to reduce energy consumption in street lights, hoardings and parks.

- The Distribution Reforms and Upgrades Management (DRUM) Project in BESCOM was conceived by the MoP, GOI. The Company identified (August 2006) Doddaballapur town for the pilot project. The total cost of the project was ₹ 25.06 crore and the Company has spent ₹ 21.71 crore as at end of February 2011. The project was in completion stage. BESCOM has been bestowed 'National Power Award 2009' for taking up initiative in energy efficiency, conservation and demand side management in agricultural sector.

- Opinions of representatives of industrial establishments are being obtained by the Company to explore the possibility of bringing in 'Time of Day' tariff as compulsory instead of optional.

- BESCOM had issued directions to the field officers to adhere to the notifications issued regarding mandatory use of solar water heating systems by the consumers as per the guidelines of State Government. A rebate of 50 paise per unit of electricity consumed subject to a maximum of ₹ 50 per installation per month is being allowed to certain category of consumers, if solar water heaters are installed and used. The number of installations with solar heaters as at end of March 2010, as submitted to KERC, was 1.64 lakh.

- As per the Bachat Lamp Yojna launched by Bureau of Energy Efficiency (BEE), Ministry of Power, GoI, up to four CFLs per customer would be sold at ₹ 15 per CFL in place of incandescent bulbs by agencies being selected through tendering process. This scheme was under Clean Development Mechanism (CDM), wherein the agency would get the benefits of Certified Emission Reductions (CERs) duly following the procedure stipulated for CDM projects under the supervision of BEE. The Company invited (October 2010) tenders for implementation of the scheme in all the seven rural districts of BESCOM. The Agencies started the sale of CFL to consumers from February 2011.

Energy audit

2.1.20 A concept of comprehensive energy audit was put in place with the objective of identifying the areas of energy losses and reducing the same through system improvements, besides accounting for the units purchased/ sold and losses at each level accurately. 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[62] of equipment;
- Massive savings in operational costs and increase in revenue, *etc.*

[62] **Periods when the machinery / equipment was not working mainly due to malfunction or technical failures.**

2.1.20.1 In accordance with the directions of KERC, ESCOMs were required to undertake energy audit of DTRs on 11 KV feeders to reduce distribution losses to a maximum of 15 *per cent* wherever it was above this level in towns and cities having a population of over 50,000. Further, KERC had also directed ESCOMs to file a trajectory of level of AT&C losses for each year backed by relevant studies to justify loss levels with segregation of technical and commercial losses.

- In BESCOM, energy audit was conducted in 14 towns against 15 towns directed by KERC. Out of 21,078 DTRs audited during March 2011, 391 DTRs recorded distribution loss above 20 *per cent* while 929 DTRs recorded losses between 10 *percent* and 20 *per cent.*
- In CESC, energy audit of DTRs was restricted only to metered DTRs of urban areas. Of the 2,308 metered DTRs in urban areas, energy audit was conducted in respect of 1,795 DTRs. Energy audit of metered DTRs of urban areas showed that seven DTRs reported distribution loss beyond 30 *per cent* and 338 DTRs reported distribution loss in the range of 10 *per cent* and 20 *per cent*.
- In GESCOM, where energy audit was conducted in 11 towns, it was observed that though there was a slight improvement in overall energy loss, no town could achieve the prescribed 15 *per cent* level and the losses ranged between 15.27 *per cent* (Hospet in 2010-11) and 43.79 *per cent* (Shahabad in 2008-09). Instead, in four towns (Shahabad, Sindhanur, Bidar and Basavakalyan) the energy loss levels had increased in the range of 3 *per cent* to 17 *per cent*.
- In MESCOM, during 2010-11, energy audit was conducted in 582 feeders out of 612 feeders of 11 KV voltage and distribution loss beyond the prescribed level of 15 *per cent* was observed in 428 feeders. Further, out of 10,214 DTRs which were subjected to energy audit during 2010-11, 2,301 DTRs recorded distribution loss above 20 *per cent* while 4,252 DTRs recorded losses between 10 *per cent* and 20 *per cent.*
- Information from HESCOM on the status of energy audit was awaited (October 2011).

Monitoring

2.1.21 The Power Distribution Companies play an important role in the State economy. For such big organisations to succeed in operating economically, efficiently and effectively, there has to be a Management Information System (MIS) for monitoring by top management. We observed that no effective MIS was in place in ESCOMs as was evident from the frequent directions of KERC at the time of every filing of ARR. KERC has been regularly directing the ESCOMs to improve MIS, provide more details and basis for all projections indicating the sources of data and method of estimating the projected values, in addition to improving database and achieve consistency in the data furnished to the commission.

Irregularities in execution of works

2.1.21.1 Technical Audit Wing of BESCOM had reported (January 2009), irregularities in execution of improvement and extension works awarded (September 2006/October 2007) in Kolar division. As per the report of the Technical Audit Wing, out of 6,534 works stated to have been completed, 2,993 works were either incomplete or were not executed as per the specifications, resulting in loss of ₹ 8.06 crore.

Though the Management had directed (October 2010/February 2011) the Executive Engineer of the Kolar Division to file criminal cases against the erring contractors no action was found to have been initiated (October 2011).

Similarly, in Kolar Gold Fields Division (January 2009) there was a loss to the tune of ₹ 13.08 lakh as the works were either incomplete or were not executed as per the specifications. Besides, completion reports of works, for which materials valued at ₹ 7.60 lakh had been drawn, were not submitted.

2.1.21.2 RGGVY is carried out on turnkey basis. The works are entrusted to a registered contractor who succeeds in the bid. Under this scheme, BPL beneficiaries are identified by the Revenue Authorities and thereafter the contractor, under the supervision of the officers of the Company, gives service connections to the selected BPL beneficiaries. After completion of the works and after compliance with tender stipulations, payments are made to the contractor. The section officers concerned are required to open revenue register dockets after servicing the BPL installations and transfer them to revenue section for issuing electricity bills thereafter.

GVPR Engineers Limited, Hyderabad was entrusted with the work of electrification of BPL households along with associated infrastructure in Bijapur district under RGGVY scheme. On a random inspection of the installations serviced by the contractor in Indi, Bijapur, the internal audit team of HESCOM observed that 6,311 installations (Nos.) were claimed to have been serviced but only 2,319 were actually serviced and fictitious bills for 3,992 were raised towards electrification of BPL households resulting in excess payment of ₹ 1.12 crore. On a further verification, it was found that excess expenditure to the tune of ₹ 4.07 crore was made. The Company suspended (March 2010) 19 employees and has filed criminal complaints against the contractor and the concerned officials. Special audit teams have been formed to carry out thorough investigation of works executed under RGGVY works.

Non-reconciliation of ESCOM-wise purchases

2.1.21.3 We observed that there were differences between the cumulative purchases as per books of accounts of the ESCOMs, PCKL and Load Despatch Centre. The ESCOMs need to periodically reconcile the purchase of power with PCKL and Load Despatch Centre.

Acknowledgement

Audit acknowledges the co-operation and assistance extended by the staff and the Management of the Companies at various stages of the performance review.

Conclusions

The generation of power in the State is not sufficient to meet the demand. Absence of committed long-term power supply and increased demand had forced the ESCOMs to resort to short-term power purchases at high cost.

The trend in additions to connected load and transformation capacity during 2007-11 indicate that the distribution network may not be adequate to provide 'power for all by 2012'.

Huge receivables forced the ESCOMs to resort to borrowings.

The Aggregate Technical and Commercial losses and failure of transformers showed a decreasing trend during the last five years.

Energy conservation was presently in a nascent stage and needed thrust.

The ESCOMs do not have a proper Management Information System to generate and supply various information required for efficient functioning of the organisation.

Recommendations

The following recommendations are offered:

- **The State has to evolve an integrated energy policy to fulfill the objective of power for all and also to improve the operational/ financial performance of the ESCOMs.**
- **The distribution network/infrastructural facilities need to be augmented.**
- **Providing quality power supply in rural areas and regularisation of unauthorised IP sets needed to be accorded priority.**
- **The Aggregate Technical and Commercial losses have to be reduced further by undertaking energy audit at distribution transformer level, metering of distribution transformers and installations, preventing thefts and improving the billing and collection.**
- **Efforts need to be made to adhere to the norms and directions prescribed by KERC regarding failure of transformers and adequacy of HT:LT ratio.**
- **Efforts should be made to bring cross subsidy on the lines suggested in the National Electricity Policy.**

- **Allocation of scarce budgetary resources to meet the gap between revenue and expenditure of the ESCOMs needs a renewed strategy.**
- **Effective action needs to be taken to realise long outstanding dues to improve the financial position and reduce dependence on Governmental support.**
- **ESCOMs should give priority to implementation of demand side management and energy conservation measures.**

2.2 Performance Review on the Construction activities of Karnataka Rural Infrastructure Development Limited

Executive summary

The Karnataka Land Army Corporation, renamed (August 2009) as Karnataka Rural Infrastructure Development Limited, was incorporated (August 1974) as a wholly owned Government Company with the main objectives of undertaking and carrying out all types of rural development works either entrusted to it by Government Departments, Local Bodies, Undertakings, Institutions and individuals and/or obtained through tenders.

The works executed by the Company are broadly divided into directly entrusted works (Entrusted Works) and works obtained through participation in tenders (Tender Works). Over the years the works obtained through participation in tenders have declined steadily.

Audit objectives

The performance review on construction activities of the Company was carried out to assess whether reasonable care was taken in preparing the estimates; works were executed as per the schedules; the delays were analysed; procurement of materials was done economically and in accordance with the provisions of law; works were executed efficiently to achieve economy; the system for timely billing was followed and prompt realization was ensured and effective monitoring system and internal controls were in place.

Audit findings

Entrusted works

The Company failed to include its charges, taxes and labour cess in the estimates resulting in non-recovery of expenditure of ₹ 2.10 crore.

The BBMP Zone entrusted 125 works valued at ₹ 22.28 crore to sub-contractors in violation of Government orders. The sub-contractors were executing these works with their own funds. There were no mobilization advances, work codes and job work rates. The works were not accounted in the books of the Company. The expenditure incurred on these works was ₹ 20.23 crore.

Tender works

Out of 32 works valued at ₹ 55.27 crore, the Company suffered loss of ₹ 5.92 crore in 14 works. The loss was due to cost escalation, levy of liquidated damages and/or penalty and/or fine as a result of delay in completion and non-acceptance of quantities recorded in bills.

Pattern of income

Major part of the Company's profit was earned in the last three years from bank deposits and mutual funds (₹36 crore) and not from the core activities of construction (₹33 crore).

Flow of funds

The Company received funds from Government departments and agencies without any mention or assignment of work orders, especially towards the end of every financial year. Between 2007-08 and 2010-11 the Company had received ₹ 43.90 crore without work orders for the same. Subsequently, the departments/agencies withdrew ₹38 crore without attributing reasons, after periods ranging from one to sixty months.

Billing

Submission of bills in 12 works for ₹ 4.43 crore was delayed for periods ranging between one and 48 months. In 39 works, realisation of bills amounting to ₹ 11.76 crore was delayed for periods ranging between one and 34 months.

The Urban Development Department, Government of Karnataka had directed (July 2007) the Commissioner, BBMP not to recover security deposit from the bills of the Company, as the works were awarded on entrustment basis. BBMP, however, recovered security deposits from bills of ₹ 4.20 crore, which were not refunded (September 2011). This included ₹1.83 crore outstanding for more than three years.

Miscellaneous

Government permitted (February 2010) claiming of reimbursement of Value Added Tax paid on construction materials used in building low cost houses under 'Aasare' scheme within

30th of the month following the purchases of materials. The Company preferred claims for ₹ 2.19 crore after the issue was raised by audit. The balance of ₹ 0.65 crore remained unclaimed.

As per Karnataka Value Added Tax (KVAT) Act, organizations are allowed to adopt either payment under composition or payment under full VAT. The Act allows payment on steel involved in execution of works contract at 4 per cent. The value of steel involved in execution of works was much less than the value considered for the payment of VAT. This had resulted in payment of lesser tax by ₹ 5.02 crore and had concomitant risks such as payment of penalty and interest.

Conclusion and recommendations

The Company has incurred significant losses in major works, as the planning for and estimates of works have been faulty, as all inputs and costs were not taken into account and there were inordinate delays in execution. Compliance with rules and regulations and budgetary control and monitoring system needs improvement.

The following recommendations are made:

- ***The Company has to streamline the works wing to ensure that all inputs and costs are considered, the works are completed within scheduled time, estimated costs are not exceeded and activities are monitored effectively;***
- ***The monetary advantages to the Company embedded in the SR should be retained;***
- ***The system of procurement of materials from unregistered dealers has to be streamlined and the provisions in the KTPP Act should be followed;***
- ***Billing should be done promptly;***
- ***The Company should stop the practice of accepting funds without work orders so as to prevent the Government departments in making use of this facility as a means to avoid lapsing of funds at the end of the year; and***
- ***Internal control system should be tightened and maintenance of records improved.***

Introduction

2.2.1 The Karnataka Land Army Corporation Limited, renamed (August 2009) as Karnataka Rural Infrastructure Development Limited (Company), was incorporated (August 1974) as a wholly owned Government Company with main objectives:

- To undertake and carry out all types of rural development works either entrusted to it by Government Departments, Local Bodies, Undertakings, Institutions and individuals *etc.,* and/or on its own;
- To construct, execute, carry out, improve, work, develop, administer, manage all types of construction and civil works and other works secured from any source; and
- To carry out the business of builders, contractors, engineers, developers, architects, surveyors, consultants, designers and others and take up real estate projects.

The Company has been primarily executing works entrusted by the Government of Karnataka (GoK) and Government of India (GoI).

Organisational setup

2.2.2 The Management of the Company is vested with a Board of Directors consisting of 12 Directors, including the Chairman and the Managing Director (MD). The MD, the only functional Director, is the Chief Executive of the Company. The MD is assisted by three General Managers (Technical) for monitoring the works and a General Manager (Finance) at Head Office.

The Company functions through six Zones, 32 Divisions and 75 Sub-divisions headed by Joint Directors (JD), Deputy Directors (DD) and Assistant Directors (AD) respectively.

Scope of audit

2.2.3 The present Performance Review covered the construction activities of the Company during the period from 2006-07 to 2010-11. We examined the records maintained at the Corporate Office, four Zonal Offices, 11 Divisions and 16 Sub-divisions. Out of 7,523 works valuing ₹ 2,188.78 crore undertaken during the review period, we had selected 435 works[63] and reviewed 377 works[64] (345 entrusted works and 32 tender works) valued at ₹ 282.26 crore. The selection of works was based on Monetary Unit Sampling method with estimated value of works as size measure. The remaining 58 works were non-existent as the database provided for sampling contained work codes of unsuccessful bids allotted at the time of payment of Earnest Money Deposit

[63] Including 359 entrusted and 76 tender works.

[64] 65 works (₹ 193.36 crore) of value > ₹1 crore, 60 works (₹ 45.38 crore) of value < ₹ 1 crore and > ₹ 50 lakh, 142 works (₹ 38.07 crore) of value < ₹ 50 lakh and >₹ 10 lakh and 110 works (₹ 5.45 crore) of value < ₹ 10 lakh.

(EMD) but not de-activated, two work codes for the same work and assigning of works to the unrelated Sub-divisions.

Audit objectives

2.2.4 The performance review on construction activities of the Company was carried out to assess whether:

- adequate care was taken in preparing the estimates while submitting quotations;
- the works were executed effectively, time and cost overrun were analysed subsequently;
- the procurement of materials was done economically and in accordance with the provisions in law and accepted practices and inventory was managed efficiently;
- an effective monitoring system and internal control were in place; and
- the system for timely billing was followed and prompt realization was ensured.

Audit criteria

2.2.5 The audit criteria considered for assessing the achievement of the audit objectives were:

- Schedules of Rates (SR) issued by the Public Works Departments (PWD), Government of India (GoI) and Government of Karnataka (GoK);
- General conditions of contracts, terms and conditions of specific construction contracts;
- Job-work bills, monthly running accounts and the monthly progress reports;
- Material-at-site accounts, Measurement Books (MBs) *etc*.
- Procurement and operation manual of the Company, KPWD Code/Manual and recommendations of the tender scrutiny committee;
- Prevailing market rates of major materials; and
- Instructions/guidelines issued by the State Government and Company.

Audit methodology

2.2.6 The following methodology was adopted for collection of data and gathering of evidence:

- Scrutiny of minutes and agenda papers of meetings of the Board of Directors, estimates and offers, contract documents, correspondences with the administrative department and clients;
- Examination of circulars and office orders, instructions of the GoK and GoI pertaining to relevant activities, the reports relating to physical inspection of work sites and internal audit reports;
- Scrutiny of MBs, material-at-site accounts, job work bills, monthly running accounts and monthly progress reports;

- Review of annual accounts of the Company; and
- Interaction with the Management and issue of audit queries.

Audit findings

2.2.7 The objectives of the performance review were explained to the Company during an 'Entry Conference' held in April 2011. The audit findings were reported to the Management between May and July 2011 and were also discussed in an 'Exit Conference' held with the representatives of the Government/Management in September 2011. The views expressed by the Government/Management have been considered while finalizing this Review. The audit findings are discussed in subsequent paragraphs.

Financial position and working results

2.2.8 The working results of the Company for the last five years ending 31 March 2011 were as follows:

₹ in crore

Sl. No.	Particulars	2006-07	2007-08	2008-09	2009-10	2010-11 (provisional)
State of affairs						
1	Share holders' funds	12.27	12.27	45.25	66.48	82.35
2	Borrowings	120.71	101.59	84.67	72.16	58.95
3	Current liabilities and provisions	743.82	942.48	858.89	1,131.62	1,564.04
4	Fixed assets and capital work-in-progress	4.16	4.05	28.76	34.64	40.64
5	Current assets, loans and advances	868.87	1,039.48	960.37	1,234.42	1,665.59
Performance						
1	Turnover (value of work done)	218.51	205.06	344.86	380.21	599.64
2	Direct works expenditure	200.50	193.16	299.95	339.95	554.56
3	Administrative overheads	23.72	26.34	28.35	31.68	37.04
4	Operating margin (Sl.No.1-Sl.No.2-Sl.No.3)	(-)5.71	(-)14.44	16.56	8.58	8.04
	Percentage of operating margin to turnover	(-)2.61	(-)7.04	4.80	2.26	1.34
5	Other income[65]	6.08	6.38	12.69	22.27	23.81
6	Other charges	5.91	0.04	6.38	8.56	5.05
7	Overall profit / loss (-)	(-)5.54	(-)8.10	22.87	22.29	26.80
	Percentage of profit / loss (-) to turnover	(-)2.53	(-)3.95	6.63	5.86	4.47

[65] **Includes interest of ₹ 2.86 crore, ₹ 5.30 crore, ₹ 8.70 crore, ₹ 8.22 crore and ₹ 18.71 crore during 2006-07, 2007-08, 2008-09, 2009-10 and 2010-11 respectively.**

Cost control

2.2.9 The entrusted works were 99.68 *per cent* and 99.82 *per cent* respectively of the total works undertaken in the years 2009-10 and 2010-11. The Entrusting Agencies (EAs) allotted works at costs estimated as per SR. The rates in the SR are inclusive of contractor's profit of 10 *per cent* and provision to meet overheads to the extent of 10 *per cent*. The Company is also eligible for 5 *per cent* of the estimated cost as Company's (KRIDL) charges. The cost structure of the entrusted works leaves 75 *per cent* of the estimated cost for the direct costs of works undertaken. We observed that the direct costs incurred were 97.74 and 98.66 *per cent* of the estimated costs of the respective years. Thus, the percentages of actual margin from operations to turnover were 2.26 and 1.34 in 2009-10 and 2010-11 respectively. The increased cost was due to higher job work rates allowed and cost escalation due to time overrun. The Company, however, could control its overheads to 10 *per cent* of the estimated cost.

With better investment of excess funds available, the Company maintained the percentage of profit to turnover at 5.9 and 4.5 *per cent* for the last two years ending 2010-11, against the expected 15 *per cent* of the turnover.

Construction activities

2.2.10 The works executed by the Company are broadly divided into two categories:

- Directly entrusted works (Entrusted Works); and
- Works obtained through participation in tenders (Tender Works).

Position of works

2.2.11 The table below exhibits the position of works secured[66] by the Company under the entrusted and tender categories during the five years ended 31 March 2011.

Value : ₹ in crore

Particulars		2006-07	2007-08	2008-09	2009-10	2010-11
Entrusted works	No.	956	595	895	1833	3211
	Value	146.11	62.26	211.53	355.92	661.18
Works secured by participation in tenders	No.	391	30	24	8	4
	Value	633.24	116.46	76.87	1.14	1.19
Total	**No.**	**1,347**	**625**	**919**	**1,841**	**3,215**
	Value	**779.35**	**178.72**	**288.42**	**357.06**	**662.37**
Percentage of entrusted works to total works		18.75	34.84	73.34	99.68	99.82
Percentage of tender works to total works		81.25	65.16	26.66	0.32	0.18

[66] Limitations brought out in Paragraph 2.2.3.

The works secured by participation in tenders had decreased steadily from 81.25 *per cent* of the total works in 2006-07 to 0.18 *per cent* in 2010-11. However, the value of the entrusted works had increased correspondingly from 18.75 *per cent* in 2006-07 to 99.82 *per cent* in 2010-11.

The Management attributed (September 2011) the steep decrease in tender works to paucity of working capital, as the Company had to invest a minimum 25 *per cent* in the form of EMD and margin money. Further, it was found difficult to participate in tenders and to compete with private contractors. The Company emphasized the need for exemption from Karnataka Transparency in Public Procurements (KTPP) Act, 1999 for some more time to consolidate its financial position and to grow stronger to manage and execute tender works.

The reply is not tenable in view of the fact that the Company had enough resources in the form of liquid cash to compete with the private companies to undertake tender works.

Flow of funds

2.2.12 On entrustment of works by the Government agencies/departments, the Company receives funds in the following manner:

Type of work	Agency	Schedule of completion	Release of funds
Entrusted	Government Departments	Below 12 months	100 *per cent* in advance.
		Beyond 12 months	50 *percent* advance. 25 *per cent* on completion of 40 *per cent* work. 25 *per cent* on completion of 70 *per cent* work.
	BBMP		25 *per cent* advance. Balance on submission of Running Account (RA) bills.

Between 2007-08 and 2010-11 the Company had received ₹ 43.90 crore without receipt of work orders. Subsequently, the departments/ agencies withdrew ₹ 38 crore after a period ranging from one to sixty months.

2.2.13 As against the value of work allotted by Government agencies and departments, the Company received the following funds in the last three years ending 2010-11.

₹ in crore

	2008-09	2009-10	2010-11
Value of works entrusted	211.53	355.92	661.18
Amount of advance received	332.42	510.89	743.54
Excess advances received	120.89	154.97	82.36
Cash and bank balances	188.15	322.60	485.99

On analysis of the excess funds received by the Company as compared to the value of work entrusted we observed that the Company had received ₹ 43.90 crore between 2007-08 and 2010-11 without receipt of work orders. Subsequently, the departments/agencies withdrew ₹ 38 crore without attributing reasons, after periods ranging from one to sixty months. An amount of ₹ 5.18 crore was still available with the Company as of March 2011, awaiting instructions from the departments/agencies, which included ₹ 4.64 crore received in 2008-09 from the Department of Rural Development and Panchayat Raj.

The Company had been receiving funds from Government departments and agencies without any work orders being mentioned/assigned, especially at the fag end of the financial year. These funds were withdrawn at a later time without mentioning reasons.

The Company should stop the practice of accepting funds without work orders so as to prevent the Government departments in making use of this facility as a means to avoid lapsing of funds at the end of the financial year.

While there were cases of receipt of funds without work orders, there were also cases of non-receipt of advances alongwith the work orders. We observed that the Company did not receive or claim advances of ₹ 6.74 crore, in respect of 49 works[67] entrusted by Bruhat Bangalore Mahanagara Palike (BBMP) during 2007 to 2011.

The Company replied (September 2011) that BBMP gave advance subject to submission of Bank Guarantee for equal amount. The reply is not factually correct as only in 11 out of the 49 cases bank guarantees were insisted upon and the Company's financial position was sound enough to furnish bank guarantee in those cases.

The MD had issued (February 2010) instructions that the entrusting agencies must be informed to specify the nature of work while entrusting work and, in case of refunds, administrative charges of 10 *per cent* should be deducted from the amount received. Administrative charges were, however, not deducted and the amounts were returned in full. The amount refunded after issue of the instruction was ₹ 28.76 crore and the administrative charges deductable amounted to ₹ 2.88 crore.

The Company stated (September 2011) that the instruction to deduct 10 *per cent* for administrative charges was applicable only when EA had specified the nature of work for the parked funds. The Company further stated that in these cases, works were not specified and no preliminary expenses were incurred and hence, money was returned in full. The reply, however, indicates that the instruction issued by the MD was not followed.

[67] **Out of the total works selected for review.**

Pattern of Income

Major part of the Company's profit in the last three years was earned from bank deposits and mutual funds and not from the core activity of construction.

2.2.14 As seen from the table in Paragraph 2.2.8 and 2.2.13, we observed that while the Company had received an excess advance of ₹ 358.22 crore during the last three years ending 2010-11, it had huge cash and bank balances of around ₹ 997 crore during the same period. By skillfully employing these funds in short term deposits and mutual funds, it had earned an interest income of ₹ 36 crore during the same period while the Company had earned an operating income of ₹ 33 crore during the same period from the core activity of the Company *viz.,* construction.

In short, over a period of time the Company is becoming more a Finance Company rather than a Construction Company from the point of view of earning of income.

Entrusted works

2.2.15 The Secretary, Department of Rural Development and Panchayat Raj (RDPR), GoK, had requested (January 2005) the Executive Officers of all Panchayats to allot works to the Company on entrustment basis.

The Karnataka Transparency in Public Procurement (KTPP) Act, 1999 was enacted to ensure transparency in public procurement of goods and services by streamlining the procedures in inviting, processing and acceptance of tenders by entities. Section 4(g) of the Act provides for exemption in respect of specific procurements as may be notified by the Government from time to time.

In line with this provision, the Government exempted (January 2008) the Company from application of the above Act in regard to procurement of the construction requirements of Government Departments and other procurement authorities in respect of works of construction of schools, colleges, anganwadi buildings, hostel buildings, houses for weaker sections, primary health centers, hospitals, staff quarters, rural water supply, sanitation *etc*., not exceeding ₹ 50 lakh. The limit was increased to ₹ 1 crore in August 2009. The order stipulated that the works should be executed under the direct supervision and responsibility of the Company's own personnel and the work should not be sub-contracted (except for sourcing material and labour).

The orders of exemption from the Act were to remain in force for a year and were to be renewed yearly. The present exemption expires in March 2012. The Government has allowed the Company to execute the works directly entrusted as per the schedule of rates of the PWD, applicable to the geographical locations of the works to be executed, with nominal administrative costs. Works were taken up on the basis of administrative approvals of the estimates, handing over of the sites and release of funds.

Sub-contracting of works

2.2.16 In violation of the order of the GoK exempting award of works from the provisions of KTPP Act, the Company had sub-contracted the works entrusted, especially by the BBMP.

The Company received 18 works[68] for ₹ 3.29 crore in 2009-10, which were sub-contracted to nine firms[69] for ₹ 2.90 crore. These works were given out inviting quotations from a few shortlisted contractors. We observed that in each case only three contractors had submitted their quotations and the works were allotted to the contractors with the lowest quotations.

The Company stated (September 2011) that short term tender notifications were invited and works awarded to the lowest tenderers. It was observed that the orders of exemption were meant to sustain the operations of the Company, at the risk of rates not being competitive. Sub-contracting by the Company negated this objective.

Preparation of estimates

2.2.17 The plans and estimates of works entrusted directly are prepared by the Company in consultation with the Entrusting Agencies (EAs) concerned and forwarded to the department/agency concerned for approval. The estimates are increased by 5 *per cent* for Company's charges ('KRIDL charges') and a further 5 *per cent* for taxes. In respect of orders entrusted by BBMP, the estimates are prepared by themselves at the rates in the prevailing SR.

We observed the following in the test checked cases:

The Company failed to include its charges, taxes and labour cess in the estimates resulting in non-recovery of expenditure of ₹ 2.10 crore.

- The GoK had instructed (January 2007) all Departments, Public Sector Undertakings (PSUs) and Government agencies to deduct one *per cent* from the contractor's bills for labour cess and remit it to the Karnataka State Building and Other Construction Workers' Welfare Board. The Company accordingly directed (January 2007) all Sub-divisions to include one *per cent* for labour cess in the estimates. It was observed that out of 82 test checked works, in 45 works, the Company had paid labour cess of ₹ 11.69 lakh from its own funds and in balance 37 works the Company has a liability of ₹ 30.97 lakh for labour cess, due to non-inclusion of cess in the estimates.

- The GoK had entrusted (March 2010) construction of 11,624 houses for the flood affected people under 'Aasare Scheme' at an estimated cost of ₹ 158.15 crore. The labour cess at one *per cent* was not included in the estimate prepared by the Government.

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[68] 18 works were entrusted to the Company in one order, including the two selected for review.

[69] Arvind Electricals (8 works), Shah Electrical (2 works), SS Electricals (2 works), Annapoorneswari Enterprises (1 work), Rajsurya Electricals (1 work), Vijayalaxmi Developers (1 work), Sreenivasa Electricals (1 work), Chandu Electricals (1 work) and Balaji Electricals (1 work).

- The Company did not include Karnataka Value Added Tax (VAT) in the estimates submitted to the EAs in construction of four flood damaged buildings in Davangere district, which resulted in loss of ₹ 8.83 lakh.
- The Company did not include 'KRIDL charges' in the estimates in three works resulting in loss of ₹ 0.71 lakh.

The Company stated (September 2011) that there was no provision to include KRIDL charges and VAT in the estimates of works using MLA/MP grants. We observed that there was no such exemption for works executed with MLA/MP grants. The Company, however, had included VAT in the estimates of all works in Harihar Sub-division.

Execution of works

2.2.18 As per Paragraph 33 of the Standing Orders (SO) issued by the Company, the Deputy Directors (DD)/Assistant Directors (AD) have to make a thorough study of labour available in the local area for the requirement of the projects. Further, as per Paragraph 41 of the SO, specific work in a project has to be entrusted to a group of workers of not more than 20 to 25 headed by a group leader, who should be one among the workers. Such works are to be entrusted on quantum basis at job work rates fixed by DD/AD from time to time. Works executed by such groups are to be measured and recorded in Measurement Books (MBs) and also in Job Work Bills (JWB). The names of all labourers in the group are to be entered in the pro-forma attached to the JWB, with particulars of the number of days worked, the actual quantity of work done by each and the amount payable to each.

Non-observance of procedures

2.2.19 It was seen in audit that the payments for the works were released in lump sum to the group leaders as per assessment of the work done by the Sub-divisions without details of names of labourers deployed in the groups, the proforma to be attached to the Job Work Bills, the particulars of days worked, the actual quantity of work done by each, *etc.,* in contravention of the requirements in Paragraph 41 of the Standing order (refer *supra*).

The Company accepted the observation and stated (September 2011) that this would be followed in future.

Lapses in accounting/recording the details of work executed for BBMP

2.2.20 The Company has created a separate Zone for execution of works entrusted by the BBMP. It enters into agreements with the BBMP after work orders were issued by them on the basis of estimates prepared. The work orders are to be accompanied by mobilization advance equal to 25 *per cent* of the estimated cost. On receipt of advance, the Sub-divisions submit request for release of money and the Head Office releases the amount with a Limit Order (LO)[70]. While releasing the LO, work codes[71] are allotted for the works. As

[70] Limit order – The order to the bank prescribing the monetary limit for release of amount to the Sub-division for execution of works by the Sub-division.

[71] Work codes signify unique identification for each work. The works are undertaken by Sub-divisions after work codes are assigned for each of the work.

The Company entrusted 125 works valued at ₹ 22.28 crore to sub-contractors in violation of Government orders.

per the procedure followed, the works have to be entrusted to group leaders at job work rates fixed prior to commencing the works. The Sub-divisions commence the works on release of funds by the Head Office.

Two Sub-divisions (South and West) were allotted 125 works valued at ₹ 22.28 crore between November 2009 and February 2011. The agreements for 103 works were signed during this period. No agreements were signed for 22 works.

Of the works started (November 2009), 88 works were completed and 13 works were in different stages of construction. The balance 24 works were not taken up (September 2011). The expenditure on these works was ₹ 20.23 crore. The Sub-divisions had submitted bills to the extent of ₹ 14.87 crore (September 2011).

We observed that registered contractors of BBMP executed the works with their own funds. The works were/are being executed without:

- agreement and work orders from BBMP (22 works),
- getting mobilization advance (all works),
- allotting work codes (all works),
- job work rates (all works),
- limit orders (all works), and
- bringing them into account even after completion (88 works).

Neither the Zonal Office nor the Head Office had accounted for these 101 works in their books of accounts, inspite of the fact that 88 works had been completed (May 2011) and 13 works were in different stages of completion. We further observed that the process of executing the BBMP works was not transparent and the Company was used as a platform to award works to contractors in violation of Government directives.

The Company stated (September 2011) that the works were executed due to pressure from the local public and BBMP. The fact remains that the works were awarded to and executed by sub-contractors in violation of Government directives.

Works taken up without work order/agreement/technical sanction

2.2.21 As per the Standing Orders, the Sub-divisions have to obtain the technical sanction and approval of job work rates for various items from competent authority (DD/JD/MD) before commencement of works. Based on this work orders are issued. In the test checked works, we observed that 20 works in 5 Sub-divisions valued at ₹ 9.46 crore were commenced prior to/without technical sanction and approval of job work rates by competent authority and also without entering into agreements with the EAs.

The Company stated (September 2011) that the works were to be carried out urgently and were started in anticipation of work orders/agreements/technical sanctions from EA.

Delay in handing over completed works

2.2.22 Twelve works valued at ₹ 2.43 crore, completed between September 2009 and March 2011, were not handed over to the EA (August 2011). This resulted in maintaining the projects even after completion.

The Company stated (September 2011) that two works out of the 12 had been handed over to the entrusting agency.

Execution of tender works

2.2.23 The Company prepared quotations against Notice Inviting Tenders considering the prevailing market rates, overheads and applicable taxes and ensuring minimum savings of 10 *per cent*. The power to participate in tenders was delegated to various officers[72] and the MD was authorized to take final decision regarding quoting of rates, negotiation and finalization.

Loss in works

In 32 works valued at ₹ 55.27 crore, the Company suffered loss of ₹ 5.92 crore in 14 works.

2.2.24 A review of the 32 executed works valued at ₹ 55.27 crore showed that the Company suffered loss of ₹ 5.92 crore in 14 works as detailed below:

Sl. No.	Work code	Delay in months	Total cost[73]	Bills submitted	Amount admitted	Loss
			₹ in lakh			
1	9181	24	1,515.46	1,708.58	1,390.53	124.93
2	7536	9	71.98	71.98	68.16	3.82
3	7535	17	97.32	87.9	84.32	13
4	6805	26	47.91	45.68	41.01	6.9
5	6806	23	137.39	129.8	110.28	27.11
6	6807	23	72.14	64.96	26.7	45.44
7	7646	0	22.41	13.38	13.38	9.03
8	7866	0	27.17	22.86	22.86	4.31
9	2553 / 2554	19	1,909.2	1727.8	1,652.55	256.65
10	6872	23	203.19	166.62	166.62	36.57
11	6873	30	168.1	149.44	149.44	18.66
12	6875	23	165.34	145.71	145.71	19.63
13	6877	23	136.5	116.67	116.67	19.83
14	5753	14	58.05	54.03	51.93	6.12

[72] **(a) Deputy Directors for works costing up to ₹ 5 crore, (b) Joint Directors for works costing up to ₹ 10 crore (c) General Managers for works costing up to ₹ 50 crore and (d) Managing Director for works costing ₹ 50 crore and above.**

[73] **Includes Penalty: ₹ 68.93 lakh, Royalty : ₹ 36.76 lakh, Labour cess and others: ₹ 39.68 lakh.**

The losses were due to:

- delay in completion resulting in cost escalation,
- levy of liquidated damages, penalty, fine *etc.,* and
- non-acceptance of quantities recorded in bills by the entrusting agencies.

Security deposits and Earnest Money Deposits

2.2.25 We observed that in respect of 17 works security deposits of ₹ 2.71 crore, recovered from the bills by the agencies, who awarded the works, have not been refunded even 4 to 25 months after the stipulated period of one year after completion. The Company has not taken any action to get the security deposits refunded (September 2011).

Further, in these 17 works the amount of ₹ 60.42 lakh deducted towards Earnest Money Deposits has not been claimed 4 to 36 months after from completion of works.

The Company stated (September 2011) that the matter had been taken up with the EAs.

Penalties

2.2.26 In respect of 5 works[74] where the final settlement of bills were made by the entrusting agencies, liquidated damages of ₹ 68.93 lakh were deducted for delay in execution of the works.

Delays in execution of entrusted works

2.2.27 Sixty eight of the 377 works reviewed were delayed for periods ranging between one and 30 months from the schedule dates of completion as detailed below:

	Total no. of works	**Delay in months**				
		1-6	**7-12**	**13-18**	**19-24**	**25-30**
Completed works	38	14	7	3	11	3
On-going works	30	20	6	4	0	0

Reasons for delay:

	Total no. of works	**Delay in months**				
		1-6	**7-12**	**13-18**	**19-24**	**25-30**
Delay in release of funds	10	5	3	1	1	0
Delay in handing over site	12	8	1	1	2	0
Total	**22**	**13**	**4**	**2**	**3**	**0**
Delay due to other reasons	5	0	2	2	0	1
Slow progress of work	41	21	7	3	8	2

In respect of 22 works, the delays were attributable to entrusting agencies and in the rest, to the Company. The Company stated (September 2011) that the

[74] **Work code 9181, 6872, 6873, 6875 and 6877.**

delays were due to delays in handing over of sites by EAs and financial constraint faced by the Company. The reply is not correct as the Company was in good financial position and only 12 out of the 68 works delayed were due to site problems.

Procurement and inventory management

2.2.28 The Company procured materials like steel and cement on rate contract basis through 'e-tendering'. The tenders were invited and the rates were decided for each station on the basis of lowest accepted quotations. The field offices were required to place orders for supplies of the required quantities. Other materials like sand, bricks, jelly *etc*., were procured by the Sub-divisions from unregistered dealers (URD).

We observed that:

- the Company had not prepared a Purchase Manual (September 2011);
- the Company had no system of analyzing the actual quantity ordered by each Sub-division against the quantity of order placed with different suppliers;
- though the Head Office had issued instruction to endorse copies of supply orders/invoices to Head Office, their receipt and analysis were not monitored;
- while initiating new tendering process, consolidated details of earlier orders placed and supply completed were not recorded;
- manufacturing companies with an annual turnover of ₹ 500 crore and above only are eligible to quote for supplies of cement and steel. This stipulation may result in creating monopolistic situations and also losing the option of procuring the materials produced by other reputed manufacturers at economical rates. The Company has reduced (January 2010) the annual turnover criteria to ₹ 100 crore to quote for supply of steel to the Company;
- the Clause No.9 of the Notification of October 2008 attached to KTPP Act stipulated that successful tenderer should deliver security deposit to the employer equivalent to five *per cent* of the contract price within 20 days of receipt of Letter of Acceptance. The Company, however, collected only one *per cent* of the tender value as EMD, which was later converted as security deposit.

The Company replied (September 2011) that Purchase Committees had been constituted at Divisions and Zones as per the financial powers delegated (November 2001) by the Board of Directors. It was also stated that as the cement manufacturing companies had large turnover, the ceiling of ₹ 500 crore was stipulated. The fact, however, remains that by stipulating turnover limit for submitting tenders, the Company failed to procure cement at competitive rates. The yearly requirement of cement was around ₹ 50 crore only.

Purchases from unregistered dealers

2.2.29 The Sub-divisions of the Company procured a number of items such as bricks, jelly, sand and stones from unregistered dealers. We observed that:

- these items were procured without inviting competitive tenders.
- there were no invoices for supply of materials.
- no records of receipt, issue and the balance quantity of materials were maintained. The Sub-divisions, however, prepared month-wise and work-wise consolidated statements of materials-at-site. Hence, the receipts and issues were not verifiable.
- there were no receipts signed by the suppliers for payments made to them. The payments were only certified by the engineers of the Company.

The Company procured items valued at ₹ 148.78 crore[75] in the four years ended 31 March 2010, without fulfilling the above stated requirements.

The Management stated (September 2011) that suitable monitoring measures were proposed to be introduced to purchase from registered dealers duly supported by tax invoices.

Billing

2.2.30 As per the Clause 73 of Standing Orders, the Company prepares work-wise running account bills each month and submits to the EA for payment. On completion of the work, final bills are prepared and submitted. The payments against the running account bills and final bills are to be released within 7 days and 30 days respectively.

The Company delayed the submission of bills of ₹ 4.43 crore in respect of 12 works for periods ranging between one to 48 months.

In the BBMP Zone, the Sub-divisions had been submitting statement of works along with 'blank' signed contract certificates, without mentioning the values of the works and details of the payments deducted. The MBs were prepared and kept by the BBMP. Subsequent bills were submitted only on clearance of the previous bills. Copies of the bills pending settlement were not available in the Sub-divisions. The Sub-divisions did not maintain work order/bill registers for entering the receipts of work orders and for submission of bills. As the Company was not maintaining the Measurement Books, the correctness of the billing was not verifiable in audit.

We observed that:

- the Company did not submit monthly bills in any of the entrusted works selected. In 12 works, the submissions of final bills amounting to ₹ 4.43 crore were delayed for periods ranging between one and 48 months.

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[75] ₹ 30.68 crore, ₹ 23.60 crore, ₹ 44.99 crore and ₹ 49.51 crore during 2006-07, 2007-08, 2008-09 and 2009-10 respectively. The figures for 2010-11 are awaited as the Company is yet to file its tax returns (September 2011).

The Company stated (September 2011) that the bills in respect of BBMP works were prepared by BBMP Engineers and agreed to maintain bill/work order register;

- in 39 works**,** the realization of bills amounting to ₹ 11.76 crore was delayed for periods ranging between one and 34 months.

- the claims were not settled as per the estimates in 25 works and deductions amounting to ₹ 1.31 crore were made without assigning reasons. The Company, however, had not taken up the matter with the EA.

- in 15 completed works, Horticulture Department under BBMP recovered ₹ 3.15 lakh as EMD. EMD is an amount collected at the time of participating in tender. As these were in the nature of entrusted works, the recovery of EMD from running account bills was not in order. The Company neither objected to this recovery nor claimed the amount back (September 2011). The Company replied that the matter had been taken up with the BBMP.

Deduction of security deposit

2.2.31 The Urban Development Department, GoK had directed (July 2007) the Commissioner, BBMP not to recover security deposit from the bills of the Company as the works were awarded on entrustment basis without going through tendering process. We observed that BBMP had however, recovered security deposit amounting to ₹ 4.20 crore[76] from the bills, which had not been refunded (September 2011). The Company stated (September 2011) that the matter had been taken up with the EAs for refund of security deposit.

Manpower management

2.2.32 The Company has 344 engineers against a sanctioned strength of 382. The table below indicates the value of work done, number of engineers designated as Task Force Commandants (TFC)/Assistant Task Force Commandants (ATFCs) in position, *etc*., in the year 2010-11:

Sl. No	Zone	Value of work done (₹ in crore)	No of engineers in position		Total	Average turnover per TFC/ATFC (₹ in crore)
			DD	TFC/ATFC		
1	Gulbarga	144.94	19	25	44	5.80
2	Central	101.78	26	33	59	3.08
3	Mysore	62.88	24	28	52	2.25
4	Bangalore	61.38	13	24	37	2.56
5	Belgaum	153.27	32	37	69	4.14
6	BBMP	82.86	7	15	22	5.52

[76] **Deduction of ₹ 0.60 crore in 2006-07, ₹ 1.23 crore in 2007-08, nil in 2008-09, ₹ 0.05 crore in 2009-10 and ₹ 2.32 crore in 2010-11.**

The works were executed in the Sub-divisions through engineers designated as TFC/ATFCs. We observed that there was no rationalization in distribution of the works, which varied between ₹ 2.25 crore and ₹ 5.80 crore per TFC/ATFC.

Monitoring System

Budgetary control

2.2.33 Timely preparation of budgets and analysis of the variations noticed in execution of works to take suitable remedial measures for achievement of the desired objectives make budgetary control important. The Company did not prepare budgets till 2008-09. The budgets for the years 2009-10 and 2010-11 were approved by the Board in June 2009 and July 2010 respectively, and communicated to field offices in July 2009 and August 2010 respectively. Cash budgets for planning financial/operational activities were also not prepared.

The Company (September 2011) stated that cash budgets would be prepared from next financial year.

Allotment of work codes

2.2.34 Work codes were allotted to works when Limit Orders for commencement of works were issued by Head Office in respect of entrusted works or when the Company participated in tenders. As the work codes of unsuccessful tenders were not identified as defunct in the system, the system-generated data and information received from the field office through monthly progress reports lacked accuracy. The Company stated (September 2011) that action had been taken to allot work codes only after receipt of administrative approvals from EAs.

Inspection

2.2.35 As per Paragraph 45 of the Standing Orders issued by the Company, DD/AD needed to inspect the works periodically and a copy of Inspection Note was to be endorsed to Head Office. It was observed that during inspection of works, the DDs/ADs issued instructions orally as and when required and inspection notes were not forwarded to the Head Office.

The Company stated (September 2011) that a system was in place to monitor the progress of the work. The Company, however, could not produce records in evidence of regular monitoring of works.

Closure of projects

2.2.36 Once a work is completed, a handing over note and completion certificate is to be prepared and the work order is to be closed and the Head Office informed, for effective monitoring of work and financial management.

There were delays of 1 to 18 months in preparing handing over notes and completion certificates. Further, the work codes remained even after completion of the works, without marking the same as 'completed' in the database.

Agreeing with the observation the Company stated (September 2011) that instructions had been issued to all concerned in this regard.

Internal control/Internal audit

2.2.37 The Company has an internal audit section with nine Audit Officers. The internal audit of field offices was carried out by Chartered Accountants till 2009-10 and thereafter the audit was centralized by appointing a firm of Chartered Accountants at Head Office.

It was observed that in none of the selected works, internal audit had conducted check of the estimates on receipt of work orders, measurements during the execution of work, preparation and submission of bills and realization and transfer of money to the Head Office. Further, the Statutory Auditors in their reports had commented that internal control system in the Company was weak.

The Company stated (September 2011) that action had been taken to improve the internal audit by appointing more Audit Officers for scrutiny of transactions.

Miscellaneous

Reimbursement of VAT on Aasare houses

2.2.38 The GoK allotted the work of construction of 11,624 low cost houses for the flood affected people of the State under the 'Aasare' scheme. GoK allowed (February 2010) reimbursement of Value Added Tax (VAT) on construction materials used. The order stipulated that monthly claim for reimbursement of VAT paid should be submitted within 30th of the month following the purchase of materials along with copies of the purchase bills. The Company completed construction of 6,647 houses and 3,154 houses were in various stages of construction (June 2011). The Company had not, however, preferred claims for reimbursement of VAT. On this being pointed out in audit (February 2011), the Company preferred (June/July 2011) claims to the extent of ₹ 2.19 crore for reimbursement. A balance of ₹ 0.65 crore remained unclaimed (September 2011).

The Company stated (September 2011) that efforts would be made to get the reimbursement from the Government.

Payment of royalty

2.2.39 The Hon'ble High Court of Karnataka had decided (1994 and 2006) that where the contractor had used materials purchased from open market, *i.e.,* from private sources like quarry lease holders and private quarry owners, there was no liability on the part of contractors to pay royalty on materials. The Company issued a circular in this regard to all project officers only in February 2010.

Nevertheless, the payment of royalty continued. The Company paid royalty of ₹ 2.66 crore[77] during 2006-11 on materials purchased from open market.

The Company stated (September 2011) that the circular issued in February 2010 was applicable to entrustment works and not for tender works. However it was seen that no such differentiation was made either in the Court Order or in the circular issued by the Company.

Payment of VAT on works

Value of steel used in execution of works in the 29 tax centres of the Company was lesser than the value considered for the payment of VAT on the works contracts resulting in payment of lesser tax by ₹ 5.02 crore.

2.2.40 As per Karnataka Value Added Tax Act (KVAT), organizations are allowed to opt for either payment under composition or payment under full VAT (*i.e.,* turnover reduced by labour and other charges). In case of composition of tax the assessee had to pay VAT at 4 *per cent* on total turnover without availing of input credit of tax paid on materials used for value addition or labour charges. In case of payment under full VAT, which was opted for by the Company, VAT was to be paid at 12.5 *per cent* on turnover reduced by labour and other charges. The Act allowed payment of 4 *per cent* VAT on steel used in execution of works.

In 2009-10, six tax centres[78] paid tax at 12.5 *per cent* on turnover after deducting labour and other charges. Twenty nine tax centres paid VAT at 4 *per cent* on steel used in execution of works and 12.5 *per cent* for the balance turnover. It was observed that the value of steel used in execution of works in the 29 tax centres was lesser than the value considered for the payment of VAT on the works contracts. This had resulted in payment of lesser tax by ₹ 5.02 crore with the risk of liability of penalty and interest.

In Davangere Division, the Commercial Tax Department had issued a notice (February 2011) for non-payment of tax (₹ 77.66 lakh) with penalty and interest (₹ 40.88 lakh).

The Company stated (September 2011) that the value of works contract on which payment of VAT was made was the value comprising iron and steel used plus value relating to several other goods employed. The reply overlooked the fact that 4 *per cent* VAT was allowed only for the steel consumed and not for the other materials consumed.

Loss due to payment of full VAT

2.2.41 The KVAT allows any Division/Sub-division of the Company to register with VAT authorities. The organizations are allowed to adopt either payment under composition or payment under full VAT. In case of composition of tax (Method I) the assessee has to pay VAT at 4 *per cent* on total turnover without the benefit of input credit of tax paid on material used for value addition or labour charges. In case of payment under full VAT (Method II), 12.5 *per cent* tax has to be paid on total turnover reduced by 30 *per cent* or actual for labour

[77] ₹ 0.74 crore, ₹ 0.76 crore, ₹ 0.40 crore, ₹ 0.35 crore and ₹ 0.41 crore during 2006-07, 2007-08, 2008-09, 2009-10 and 2010-11 respectively.

[78] Tax centres are Divisions or Sub-divisions of the Company or a combination of Division and Sub-divisions for the purpose of tax assessment.

and other like charges, whichever is higher. The assessee is allowed to avail of input credit of tax paid on raw materials in this method. The calculations of VAT on the basis of the returns submitted by one Zone (BBMP Zone) of the Company, under different methods are given below:

₹ in lakh

Particulars	2006-07	2007-08	2008-09	2009-10
Payment under composition (Method I)				
(a) Total turn over	2,629.03	1,802.21	2,441.45	4,617.48
(b) Value Added Tax (4 *per cent*)	105.16	72.09	97.66	184.70
(c) Tax payable on purchases from unregistered dealers (4 *per cent*)	10.44	9.18	6.72	9.69
(d) Tax payable (b+c)	115.60	81.27	104.38	194.39
Payment under full VAT (Method II)				
(e) Deduction claimed for labour and other like charges	Nil	807.07	918.30	1,645.31
(f) Taxable turnover (a) – (e)	2,629.03	995.14	1,523.15	2,972.17
(g) VAT on Work Contract	328.63	124.39	190.39	371.52
(h) Input tax credit	84.47	33.68	31.32	101.35
(i) Tax payable (g)-(h)	244.16	90.71	159.07	270.17
Excess tax (i) – (d)	**128.56**	**9.44**	**54.69**	**75.78**

As the works were executed with substantial purchases from unregistered dealers and VAT was not paid on those purchases, the value of such purchases attracted VAT in works contracts at 12.5 *per cent* (Method II) instead of 4 *per cent* under Composition (Method I). The Zone, thus, paid excess tax of ₹ 2.68 crore for the four years ended March 2010[79].

The Company stated (September 2011) that the tax payable for the year 2006-07 would have been only ₹ 1.04 crore had the labour charges been deducted and the credit for input tax allowed on URD purchases availed. It was also stated that all procurements would be made from registered dealers so that the Company would be in a position to avail the input tax credits.

The contention of the Company that the payment would have been lesser is hypothetical as the tax return for 2006-07 had already been filed. The reply is, however, silent on the workings related to the years 2007-08, 2008-09 and 2009-10.

The Performance Review was issued to the Government in July 2011; its reply is awaited (September 2011).

Acknowledgement

Audit acknowledges the co-operation and assistance extended by the staff and Management of the Company in conducting the performance review.

[79] **The BBMP Zone is yet (September 2011) to file its tax returns for 2010-11.**

Conclusion

The Company has incurred significant losses in major works, as the planning for and estimates of works have been faulty, and all inputs and costs were not taken into account and there were inordinate delays in execution. Compliance with rules and regulations and budgetary control and monitoring system needs improvement.

Recommendations

The following recommendations are made:

- **The Company has to streamline the works wing to ensure that all inputs and costs are considered, the works are completed within scheduled time, estimated costs are not exceeded and activities are monitored effectively;**
- **The monetary advantages to the Company embedded in the SR should be retained;**
- **The system of procurement of materials from unregistered dealers has to be streamlined and the provisions in the KTPP Act should be followed;**
- **Billing should be done promptly;**
- **The Company should stop the practice of accepting funds without work orders so as to prevent the Government departments in making use of this facility as a means to avoid lapsing of funds at the end of the year; and**
- **Internal control system should be tightened and maintenance of records improved.**