THIRTEENTH KERALA LEGISLATIVE ASSEMBLY

COMMITTEE
ON
PUBLIC UNDERTAKINGS
(2014-2016)

EIGHTY FIRST REPORT

(Presented on 23rd March, 2015)

SECRETARIAT OF THE KERALA LEGISLATURE

THIRUVANANTHAPURAM

2015

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On

Kerala State Electricity Board based on the Report of the Comptroller and Auditor General of India for the year ended 31st March, 2011 (Commercial)

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INTRODUCTION

I, the Chairman, Committee on Public Undertakings (2014-2016) having been authorised by the Committee to present the Report on their behalf, present this Eighty First Report on Kerala State Electricity Board based on the Reports of the Comptroller and Auditor General of India for the year ended 31st March, 2011 (Commercial) relating to the Government of Kerala.

The Reports of the Comptroller and Auditor General of India for the year ended on 31st March, 2011 was laid on the Table of the House on 23-3-2012. The consideration of the audit paragraphs included in this Report and the examination of the departmental witness in connection thereto was made by the Committee on Public Undertakings constituted for the years 2011-2014.

This Report was considered and approved by the Committee at the meeting held on 25-2-2015.

The Committee place on record their appreciation of the assistance rendered to them by the Accountant General (Audit), Kerala in the examination of the Audit Paragraphs included in this Report.

The Committee wish to express their thanks to the officials of the Power Department of the Secretariat and Kerala State Electricity Board for placing before them the materials and information they wanted in connection with the examination of the subject. They also wish to thank in particular the Secretaries to Government, Power and Finance Department and the officials of Kerala State Electricity Board who appeared for evidence and assisted the Committee by placing their considered views before the Committee.

K. N. A. KHADER,
Chairman,
Committee on Public Undertakings.

Thiruvananthapuram,
23rd March, 2015.

REPORT

ON

KERALA STATE ELECTRICITY BOARD

Introduction

3.1 The distribution system of the power sector constitutes the final link between the power sector and the consumer. The efficiency of the power sector is judged by the consumers on the basis of performance of this segment. It constitutes the weakest part of the sector, which is incurring large Losses. In view of the above, the real challenge of reforms in the power sector lies in efficient management of the distribution system. The National Electricity Policy in this regard *inter alia* emphasises on the adequate transition from financing support to aid restructuring of distribution utilities, efficiency improvements and recovery of cost of services provided to consumers to make power sector sustainable at reasonable and affordable prices besides others.

3.2 Kerala State Electricity Board (KSEB) was a Statutory body constituted under Section 5 of the Electricity Supply Act, 1948. In accordance with the State Power Policy, KSEB was functionally organised (May 2002) into three profit centres, namely Generation, Transmission and Distribution with a Corporate Office for co-ordination. After the enactment of Electricity Act, 2003 KSEB has been functioning as the State Transmission Utility and a Distribution Licensee with effect from 10th December, 2004 under section 172 (a) of the Act, *ibid.*

3.3 The Central Government approved the continuation of KSEB as a State Transmission Utility and Licensee. In exercise of powers conferred under Sections 131 and 133 of the Act *ibid,* Government of Kerala (GoK) issued (September 2008) notification vesting functions, properties, interests, rights, obligations and liabilities of KSEB in the State Government, in turn to be re-vested in a corporate entity formed under the provisions of the Companies Act, 1956. A new company by name Kerala State Electricity Board Limited was accordingly incorporated on 14th January, 2011.

3.4 The management of KSEB was vested in a Board of Members consisting of the Chairman/Special Officer and seven members (four full time members, two ex-officio members representing the State Government and one non-official member nominated by the State Government). They were Members (Finance), (Generation), (Transmission), (Distribution) and Secretary to Government (Power Department) and Principal Secretary to Government (Finance Department). The Board of Members was replaced by a Managing Committee headed by a Special Officer since 25th September, 2008.

3.5 Energy sales within the state increased from 11331 MU in 2006-07 to 14547.90 MU in 2010-11 i.e., an increase of 28.38 per cent. During the corresponding period energy sales outside the State ranged from 76.66 MU (2009-10) to 1346.76 MU(2007-08). As on 31st March, 2011, KSEB had distribution network of 303407 CKM*, 361 substations and 58528 transformers of various categories. KSEB had 1.01 crore customers as on 31st March, 2011 and had a Turnover of ₹ 5695.42 crore (including other income) in 2010-11, which was equal to 39.06 per cent and 2.15 per cent of the Turnover of State PSUs and State Gross Domestic Product, respectively. Its employee strength was 29885 as on 31st March, 2011.

3.6 National Electricity Policy (NEP) aims to bring out reforms in the Power Distribution sector with focus on system upgradation, controlling and reduction of Transmission and Distribution (T & D) Losses and power thefts and making the sector commercially viable besides financing strategy to generate adequate resources. It further aims to bring out conservation strategy to optimise utilisation of electricity with focus on demand side management and load management. In view of the above, a performance audit was conducted on the Power Distribution activities of KSEB to ascertain whether they were able to adhere to the aims and objectives stated in the NEP and National Electricity Plan and how far the distribution reforms have been achieved.

* Circuit kilometer (CKM) is the route kilometers determined by measuring the length in terms of kilometers of the actual path followed by the transmission utility.

3.7 A performance audit on generation of electricity activity of KSEB was included in the Report of the Comptroller and Auditor General of India No. 4 (Commercial), Government of Kerala for the year ended 31st March, 2010.

Scope and Methodology of Audit

3.8 The present performance audit conducted during January 2011 to June 2011 covers the performance of KSEB's distribution activity during the period from 2006-07 to 2010-11. The performance audit mainly deals with network planning and execution, implementation of Centrally Sponsored Schemes, operational efficiency, billing and collection efficiency, financial management, consumer satisfaction, energy conservation and monitoring. The audit examination involved scrutiny of records at the Head Office and 18* out of 65 electrical divisions, all the three Offices of Chief Engineers, two† out of three regional stores, and four‡ out of five Transformer Maintenance Repair Divisions, all selected based on random sampling§.

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

Audit Objectives

3.10 The objectives of the performance audit were to assess:

- whether aims and objectives of the National Electricity Policy/Plan were adhered to and distribution reforms achieved;

* Adoor, Alathur, Balussery, Chengannur, Cherthala, Chittoor, Kalpetta, Kannur, Kodungalloor, Kollam, Kunnamkulam, Mananthavadi, Nilambur, Pala, Pallom, Pathanamthitta, Pavyannur and Vaikom.

† Kundara and Kallai.

‡ Thirumala, Shoranur, Pallom and Angamaly.

§ Probability proportional to size without replacement.

- adequacy and effectiveness of network planning and its execution;
- efficiency and effectiveness in implementation of Centrally Sponsored Schemes such as Restructured Accelerated Power Development and Reforms Programme (R-APDRP) and Rajiv Gandhi Grameen Vidyuthikaran Yojana (RGGVY);
- operational efficiency in meeting the power demand of the consumers in the State;
- efficiency of billing and collection of revenue from consumers;
- whether financial management was effective and surplus funds, if any, were judiciously invested;
- whether a system was in place to assess consumer satisfaction and redressal of grievances;
- that energy conservation measures were undertaken; and
- that a monitoring system was in place and the same was utilised in review of overall working of KSEB.

Audit Criteria

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

- provisions of Electricity Act, 2003;
- National Electricity Plan, Annual Investment Plans and norms concerning distribution network of KSEB and planning criteria fixed by Kerala State Electricity Regulatory Commission (KSERC);
- terms and conditions contained in the documents relating to Centrally Sponsored Schemes;
- standard procedures for award of contract with reference to principles of economy, efficiency and effectiveness;

- norms prescribed by various agencies with regard to operational activities;
- norms of technical and non-technical Losses; and
- guidelines/instructions/directions of State Government/KSERC.

Financial Position and Working Results

3.12 The financial position of KSEB for the five years ending 2010-11 was as given below:

(₹ in crore)

Particulars	*2006-07*	*2007-08*	*2008-09*	*2009-10*	*2010-11**
(1)	(2)	(3)	(4)	(5)	(6)
Paid-up Capital	1553.00	1553.00	1553.00	1553.00	1553.00
Reserves and Surplus (including Capital Grants and Committed Reserves but excluding Depreciation Reserve)	3536.12	4055.28	4683.58	5427.19	6184.63
Secured loans	72.92	59.06	237.39	160.46	317.64
Unsecured loans	2498.52	1856.72	1100.37	1409.48	1066.50
Current Liabilities and provisions	3349.90	3753.29	4235.22	4764.66	5782.71
Total	11010.46	11277.35	11809.56	13314.79	14904.48
Gross Block	8216.85	8684.56	9249.12	10192.17	11210.90
Less: Depreciation	3070.27	3489.36	3924.10	4375.33	4848.75

* Figures for 2010-11 are provisionally.

(1)	(2)	(3)	(4)	(5)	(6)
Net Fixed Assets	5146.58	5195.20	5325.02	5816.84	6362.15
Capital works-in-progress	1184.48	1090.49	1171.12	1017.86	974.10
Investments	16.49	16.49	25.80	19.50	19.50
Current Assets, Loans and Advances	2871.71	3501.52	3065.50	3005.12	2900.94
Regulatory Asset*	142.23	233.52	982.69	2210.20	3393.86
Deferred costs and intangible assets	46.67	37.83	37.13	42.97	51.63
Net subsidy to be written off	1602.30	1202.30	1202.30	1202.30	1202.30
Total	11010.46	11277.35	11809.56	13314.79	14904.48
Debt: Equity	0.78:1	0.46:1	0.33:1	0.45:1	0.45:1
Net Worth†	3297.92	4134.63	4014.46	3524.72	3089.84

3.13 It could be seen from the above table that the Regulatory Asset of KSEB had increased over the years and the Debt-Equity ratio showed fluctuating trend and stood at 0.45:1 in 2010-11 compared to 0.78:1 in 2006-07. The Net Worth of KSEB increased in 2007-08 in comparison to 2006-07 but decreased from 2008-09 onwards. The decline was due to increase in Regulatory Asset. Failure to utilise Regulatory Asset at the time of Tariff Fixation and to timely revise of tariff led to deterioration in financial position.

* The expenditure over income after accounting for prescribed rate of return on equity as notified by Central Electricity Regulatory Commission is treated as Regulatory Asset.

† Net worth represents equity plus reserves minus (Defered costs and intangible assets plus Net subsidy to be written off plus Regulatory Asset).

3.14 The particulars of cost of electricity vis-â-vis revenue realisation per unit therefrom were as indicated below:

Sl. No.	*Description*	*2006-07*	*2007-08*	*2008-09*	*2009-10*	*2010-11*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	**Income**					
(i)	Revenue from Sale of Power	4286.13	4934.05	5097.49	4950.60	5403.76
(ii)	Revenue subsidy & grants					54.16
(iii)	Other income	130.03	201.79	252.33	233.26	237.50
	Total Income	4416.16	5135.84	5349.82	5183.86	5695.42
2	**Distribution (in MUs)**					
(i)	Total power sold	15844.95	16722.31	16069.43	17389.47	17869.75
	Less: Subtransmission Losses outside State	370.10	310.40	312.57	357.53	401.73
	Power available for Sale	15474.85	16411.91	15756.86	17031.94	17468.02
(ii)	*Less*: Transmission & Distribution Losses	3096.96	3015.3	2879.21	3006.95	2789.88
	Net power sold	12377.89	13396.61	12877.65	14024.99	14678.14
3	**Expenditure on Distribution of Electricity**					
(a)	Fixed Cost					
	(I) Employees Cost	898.09	904.87	1255.19	1451.53	1712.80
	(ii) Administrative and General expenses	135.10	125.35	135.45	166.95	174.56

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	(iii) Depreciation	409.98	419.09	434.74	451.22	473.43
	(iv) Interest and Finance charges	429.34	352.77	339.60	263.56	280.91
	Total fixed cost	1872.51	1802.08	2164.98	2333.26	2641.70
	(b) Variable cost					
	(i) Purchase of Power	1741.14	2297.04	3832.18	3748.87	3958.98
	(ii) Electricity Duty	198.40	215.72	227.69	258.26	290.12
	(iii) Repairs & Maintenance	110.99	116.26	138.79	173.16	231.85
	Total variable cost	2050.53	2629.02	4198.66	4180.29	4480.95
	(c) Total cost 3(a) + (b)	3923.04	4431.10	6363.64	6513.55	7122.65
4	**Realisation (₹ per unit)**	3.46	3.68	3.96	3.53	3.72*
5	**Fixed cost (₹ per unit)**	1.51	1.35	1.68	1.66	1.80
6	**Variable cost (₹ per unit)**	1.66	1.96	3.26	2.98	3.05
7	**Total cost per unit (in ₹) (5+6)**	3.17	3.31	4.94	4.64	4.85
8	**Contribution (4-6) (₹ per unit)**	1.80	1.72	0.70	0.55	0.67
9	**Profit(+)/Loss(-) per unit (in ₹) (4-7)**	0.29	0.37	-0.98	-1.11	-1.13

* Including revenue subsidy.

3.15 The realisation per unit saw a fluctuating trend and reached ₹ 3.72 in 2010-11 down from ₹ 3.96 of 2008-09 but improvement from ₹ 3.53 of 2009-10. The cost per unit of operation increased from ₹ 3.17 in 2006-07 to ₹ 4.94 in 2008-09 and decreased to ₹ 4.85 in 2010-11. The Contribution per unit had declined from ₹ 1.80 in 2006-07 to a low of ₹ 0.55 in 2009-10 but improved to ₹ 0.67 in 2010-11.

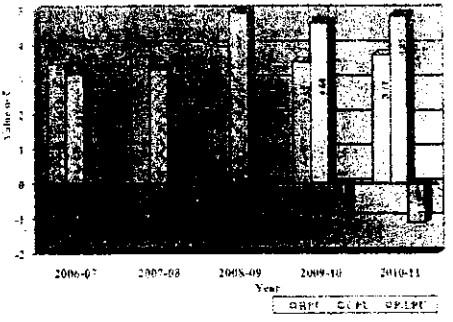
3.16 It was also evident from the above table that purchase of power and employee cost represented 55.58 and 24.05 per cent of the total cost in 2010-11. Revenue from sale of power represented 94.88 per cent of the total revenue in 2010-11.

3.17 We observed that revenue from sale of power had increased gradually from ₹ 4286.13 crore in 2006-07 to ₹ 5403.76 crore in 2010-11 except for a marginal slide in 2009-10. This was due to withdrawal, in 2009-10, of special tariff for excess consumption above the quota fixed for each consumer and withdrawal of thermal surcharge permitted (2008-09), by Kerala State Electricity Regulatory Commission (KSERC). During 2008-09 there was a huge increase of 43.61 per cent in the total cost as the employee cost jumped by 38.71 per cent following wage revision and the cost of purchase of power increased by 66.83 per cent.

Recovery of cost of operations

3.18 KSEB was not able to recover its cost of operations from the years 2008-09 onwards. Realisation Per Unit (RPU), Cost Per Unit (CPU) and Profit/ Loss Per Unit (P/LPU) earned by KSEB during the last five years ending 2010-11 were as shown in the graph below:

Annexure - A



//GRAPH// → In Annexure 'A'

3.19 It could be seen from the table relating to financial position that there remained a Regulatory Asset of ₹ 142.23 crore in 2006-07 which increased to ₹ 3393.86 crore in 2010-11 (even after including revenue Subsidies & Grants). The steep increase in Regulatory Asset needs immediate attention of the State Government for necessary remedial action. Our analysis revealed that the main reason for deficit was purchase of power at increasingly higher price and there being no increase in sale price of power.

Audit Findings

3.20 We explained the audit objectives, criteria and scope of performance audit to the Management of KSEB during an Entry Conference (March 2011). Audit findings were reported to the Management and the State Government (July 2011) and were discussed in an Exit Conference (September 2011). The Exit Conference was attended by Member (Finance) and Member (Distribution) of KSEB and the Additional Secretary, Power Department. While KSEB replied to audit findings (September 2011), Government replies were awaited (November 2011). The views expressed by the management have been considered while finalising this Performance Audit Report. The audit findings are discussed in subsequent paragraphs.

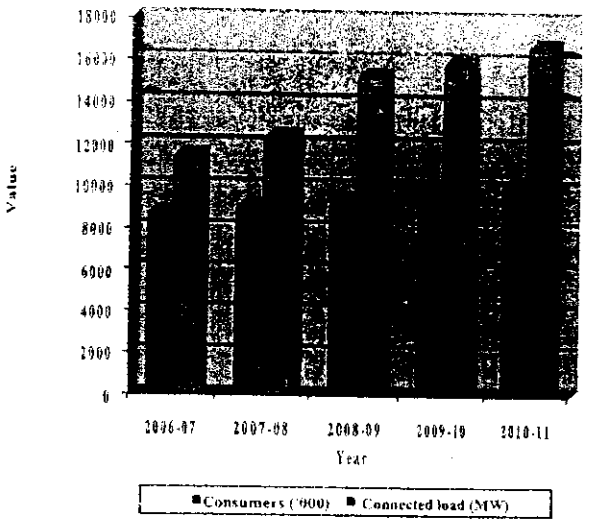
Distribution Network Planning

3.21 KSEB is required to prepare long-term/annual plan for creation of infrastructural facilities for efficient distribution of electricity so as to cover maximum population in the State. Besides the upkeep of the existing network, additions in distribution network are planned keeping in view the demand/ connected load, anticipated new connections and growth in demand based on Electric Power Survey conducted by Central Electricity Authority. Considering physical parameters, capital investment plans are submitted to the State Government/KSERC. The major components of the outlay include normal development and system improvement besides rural electrification and strengthening of IT enabled systems.

3.22 The number of consumers and connected load during audit period were as given below in bar chart:

//GRAPH// → In Annexure 'B'

Annexure 'B'



3.23 While the system improvement and rural electrification schemes have been dealt with separately under subsequent paragraphs, the particulars of distribution network planned vis-à-vis achievement there against in the State as a whole are depicted in Annexure 12.

HT/LT ratio

3.24 High voltage distribution system is an effective method of reduction of technical losses, prevention of theft, improved voltage profile and better consumer service. The Government of India (GoI) had also stressed (February 2001) the need to adopt LT less system of distribution through replacement of existing LT lines by HT lines to reduce the distribution Losses. The KSERC had also accepted the proposal to make the system LT Less and bring it to the ideal ratio of 1:1. Though the HT/LT ratio of KSEB improved from 1:6.29 in 2006-07 to 1:5.38 in 2010-11 as shown in Annexure 12, the same was way behind the ideal ratio of 1:1. KSEB had not formulated any action plan to achieve the ideal ratio. The increase in LT lines was 38007 kms. while the increase in HT lines was 12905 kms. during audit period.

Management admitted (September 2011) that there was scope for improvement in the ratio even though the ideal ratio of 1:1 would not be achievable in the State due to high density of population.

Inadequate Transformation Capacity

3.25 The ideal ratio of transformation capacity to connected load is considered as 1:1. The table below gives the details of transformation capacity at 110/66/33/11 KV substations and connected load of the consumers in the State during the period 2006-07 to 2010-11.

(in MVA)

Year	*Transformation Capacity*	*Connected Load*
2006-07	4853.30	12739.65
2007-08	5017.17	13753.33
2008-09	5239.70	16963.82
2009-10	5661.20	17629.50
2010-11	5763.70	18534.78

It could be seen that there was gap in transformation capacity but KSEB replied (September 2011) that as per its assessment, the existing transformation capacity was sufficient given that domestic consumers constituted 80 per cent of the total consumers and the all time maximum demand recorded in the State was 3119 MW only against the present total connected load of 16681.30 MW (18534.78 MVA).

Substation

3.26 Substation (SS) is a part of an electrical generation, transmission and distribution system. Substations transform voltage from high to low and vice versa or perform any of several other important functions. A distribution substation transfers power from the transmission system to the distribution system of an area. The distribution substation reduces voltage to a value suitable for local distribution. Increase in connected load can be catered to by construction of new SS or enhancement of existing SS.

The planned and actual additions in substations during five years from 2006-07 to 2010-11 were as given in Annexure 12. The percentage of achievement was 20.55, 26.03, 21.43, 36.25 and 15.29 for the years 2006-07 to 2010-11 reflecting unrealistic planning by KSEB.

It could be seen that as against the planned addition of 166 SS during 2006-07 to 2010-11, only 94 SS were actually added. The connected load of 11465.69 MW in 2006-07 increased to 16681.30 MW in 2010-11. The transformer capacity increased from 5033.35* MVA to 7158.51 MVA during the same period.

Management replied (September 2011) that over targeting in network and substation planning was deliberately resorted to counter extraneous causes of slippage like court interventions and public interest. The reply was not acceptable and we felt that absence of proper survey and defective Detailed Project Reports (DPR) coupled with poor execution of projects had led to the non-achievement of targets.

* At the beginning of 2006-07.

IMPLEMENTATION OF CENTRALLY SPONSORED SCHEMES

Rural Electrification

3.27 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 GoI and the State Governments would jointly endeavour to achieve this objective. Accordingly, the Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) was launched in April 2005, which aimed at providing access to electricity for all households in five years for which the GoI provides 90 per cent capital subsidy.

3.28 Besides, the GoI notified the Rural Electrification Policy (REP) in August 2006. The REP *inter alia* aimed at providing access to electricity to all households by 2009 and Minimum Lifeline Consumption of one unit per household per day as a merit good by the year 2012. The other rural electrification schemes viz., Accelerated Electrification of one lakh villages and one crore households, Minimum Needs Programme were merged into RGGVY. The features of the erstwhile 'Kutir Jyoti Programme' were also suitably integrated into this scheme.

3.29 As on 31st March, 2006, all the 1467 villages in the State (as per 2001 Census) were electrified (100 per cent) as per the definition* of Ministry of Power (MoP).

RGGVY launched (April 2005) by GoI envisaged electricity supply to all rural households in a five year period. The Scheme contemplated creation of necessary infrastructure through:

- Rural Electricity Distribution Backbone (REDB) – provision of at least one 33/11 KV or 66/11 KV sub-station of adequate capacity in each block;
- Village Electrification Infrastructure (VEI) – electrification of every village with a distribution transformer in each habitation;
- Decentralised Distributed Generation (DDG) and supply – DDG system in villages where the grid connectivity is not feasible or cost effective; and

* If the number of households electrified were at least 10 per cent of the total number of households in the village, the village would be declared as electrified.

- Below Poverty Line Households to get electricity connection free of charge and revenue sustainability of electricity supply to be ensured through franchisees who could be Non-Governmental Organisations, Users' Associations, Co-operatives or Individual Entrepreneurs with association of Panchayati Raj Institutions.

Rural Electrification Corporation Limited (REC) was the nodal agency for the implementation of the programme in the State. The programme was to be implemented in the State in two phases covering seven districts each. The following deficiencies were noticed in the preparation of Project Report:

- As per 2001 census, the number of un-electrified rural households in the 14 districts of the State was 17.04 lakh. KSEB submitted (May 2005) proposal for electrification of 4.68 lakh* rural households only [including 2.09 lakh Below Poverty Line (BPL) households] through construction of seven Nos. 66/11 KV substations and 18 Nos. 33/11 KV substations at a cost of ₹ 438.36 crore.
- The number of unelectrified BPL households in the seven districts under first phase† was 2.04 lakh. Out of these, only 1.22 lakh BPL households were included in the Scheme, indicating absence of proper planning and action plan which resulted in exclusion of 0.82 lakh BPL households in the Scheme.

KSEB was sanctioned (June 2005) an amount of ₹ 221.75 crore by REC for the first phase covering seven districts. A tripartite agreement was executed (July 2005) between KSEB, GoK and REC and turnkey tenders were invited (January 2006) for implementation of the Scheme. The tender found no bidders and district-wise turnkey tenders were invited. The lowest rates received ranged from 76 per cent to 88 per cent above Probable Amount of Contract (PAC). KSEB therefore requested GoI/REC to permit them to execute the works on local contract basis after providing the materials departmentally, except for the district of Idukki.

* Thiruvananthapuram-34727, Kollam-27569, Pathanamthitta-53131, Alappuzha-54348, Kottayam-10946, Idukki-23799. Ernakulam-23005, Thrissur-32202, Palakkad-35881, Malappuram-38167, Kozhikode-50674, Kannur-18831, Wayanad-38404, Kasargode-26162.

† Idukki, Kannur, Kasaragode, Kozhikode, Malappuram, Palakkad and Wayanad.

A quadripartite agreement was signed (February 2007) between KSEB, GoK, REC and NTPC Electricity Supply Company Ltd. (NESCL) by which NESCL agreed to provide consultancy for implementation of projects in remaining six districts covered under first phase of the project. REC sanctioned (March 2010) ₹ 114.57 crore on the basis of the DPR prepared by NESCL. Sanction for DPR by REC was delayed due to:

- Information furnished (in respect of 66/11 KV substation, 66 KV DC line, extension of 11 KV feeder etc.) by KSEB which was necessary to prepare DPRs being not in conformity with RGGVY guidelines;
- The schedule of completion of activities (PERT chart) being not provided in the submitted DPRs;

KSEB awarded (January 2007) the work of Idukki district to ICSA India Ltd., Hyderabad on turnkey basis for ₹ 17.65 crore (i.e., 19.45 per cent above PAC of ₹ 14.78 crore). Letter of Award (LoA) was issued (January 2007) and the entire work was to be completed by 18 months from the date of LoA. The scheme for Idukki district was completed in June 2010. The total expenditure incurred (2007-2011) by KSEB in respect of Idukki district was reimbursed (March 2007 to January 2010) by REC.

We noticed in respect of execution of work of Idukki district that:

KSEB after awarding the work (January 2007) prepared a revised DPR by increasing the quantities of work (approved by REC in January 2009) with estimated cost of ₹ 19.95 crore. The actual quantity executed with respect to quantity as per work order and DPR and quantity eligible for rate revision as at June 2010 were as shown below:

Sl. No.	*Details*	*Unit*	*Quantity*				
			As per work order	*As per revised DPR*	*Actual execution*	*Excess executed*	*Eligible for rate revision*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	No. of Villages	No.	38	39	37	..	..
2	No. of Karas	No.	81	100	83	2	..

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
3	Erection of 11 KV lines	Km.	504.44	350.90	249.94	..	Nil
4	Erection of 25 KVA transformer	No.	351	308	275	..	Nil
5	Erection of Three Phase LT line	Km.	34.28	62.14	63.51	29.23	12.08
6	Erection of DTR meters	No.	351	308	275	..	Nil
7	Erection of Single Phase LT line	Km.	126.97	258.35	368.68	241.71	178.225
8	BPL service connection effected	No.	17834	16097	17238	..	..

As per clause 9.1 of the Special Conditions of Contract (SCC) read with Clause 24.1 of the General Conditions of Contract (GCC) of KSEB, variation in quantities were to be limited to 50 per cent for individual items and total variation in all items under the contract shall be limited to 20 per cent of contract price. For quantity variation of individual items beyond 50 per cent, the matter shall be referred to competent authority of implementing agency.

KSEB allowed rate revision in respect of the following works resulting in excess payments amounting to ₹ 83.30 lakh in contravention of Clause 24.1 of GCC and 9.1 of SCC, as shown below:

Sl. No.	*Details of work*	*Quantity*			*Old rate*	*RR*	*Excess rate*	*Excess paid*
		Paid at revised rate (RR)	*Eligible for RR*	*Excess paid*	*(₹ in lakh)*			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	TP LT line (km.)	29.23	12.08	17.15	1.70933	2.5886	0.87927	15.07
2	SP LT line (km.)	241.71	178.22	63.49	1.21719	1.82515	0.60796	38.60

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3	25 KVA Transformer (No.)	55	..	55	0.82779	1.36396	0.53617	29.49
4	DTR meters (No.)	55	..	55	0.08719	0.08979	0.0026	0.14
						Total		83.30

The works were awarded (August 2010 to January 2011) on turnkey basis in respect of six districts (total PAC ₹ 98.35 crore). The first installment received (October 2010) was ₹ 20.84 crore which included loan portion of ₹ 2.12 crore.

Revised DPRs for implementation of RGGVY in the seven districts under the second phase were submitted only in September 2010 to REC and sanction was awaited (November 2011).

We observed that:

- Even though five years had elapsed since the commencement of the Scheme, the sanction for the works in seven districts to be covered in phase II had not been obtained.
- Development of franchisee system was precondition (MoP, GoI order March 2005) for release of second installment of fund by REC. The matter of implementation of franchisee system in KSEB required major policy decision at higher level. No decision had been taken on the issue so far (November 2011) which would result in further delay of the already sanctioned projects and non-attainment of the objectives of the Scheme.

Thus, ineffective project implementation defeated the very objective of the Scheme of providing electricity connection to 4.51 lakh* targeted rural households including 1.92 lakh† BPL households in the 14 districts.

Management while accepting (September 2011) the observations in respect of works of Idukki district explained that the failure in conducting accurate survey to ascertain the actual requirement led to initial underassessment of quantity of work to be executed. The Management did not reply to the observations regarding the delay in implementation of the Scheme in other districts.

* 4.68 lakh rural households in 14 districts targeted for providing electricity connection under the Scheme, as reduced by 0.17 lakh BPL households in Idukki district who were provided electricity connection under the Scheme so far.

† 2.09 lakh BPL households targeted minus 0.17 lakh BPL households actually electrified.

Restructured Accelerated Power Development and Reforms Programme

3.30 GoI introduced (February 2000) the Accelerated Power Development Reforms Programme (APDRP) scheme through State Governments for strengthening the distribution and sub-transmission network in the country so as to reduce the AT&C Losses and impart better service to the consumers. The Scheme had two components; incentive component and investment component.

3.31 The incentive component of the Scheme was meant for incentivising up to 50 per cent of the actual cash loss reduction that would be achieved by SEBs/Utilities for the 10th Five Year Plan period.

Investment component of the Scheme involves replacement of mechanical meters with static meters, installation of feeder meters, LT capacitors, substation repairs and maintenance, DTR repairs and maintenance, billing centre, data logging, call centre, boarder meter, re-conductoring of LT 11 KV and LT lines, installation of new DTRs. Under investment component, 25 per cent project cost would be grant and the balance was to be arranged by SEBs. As per the guidelines, the Scheme was to be completed between two to three years from the date of sanction.

A total of 52 schemes was sanctioned by MOP for the State during the period 2002 to 2005 for a total project cost of ₹ 858.50 crore.

- KSEB could complete only 38 schemes within the timeframe of 36 months when the Scheme was closed by MOP on 31st March, 2009. In respect of remaining 14 schemes (three city and 11 town schemes sanctioned for ₹ 438.88 crore), works to the extent of ₹ 232.32 crore remained incomplete.

Thus, the opportunity to get grant of ₹ 58.08 crore (25 per cent of incomplete project cost of ₹ 232.32 crore) was lost and had to execute the balance work with own funds treating it as normal development work.

In respect of the three incomplete city schemes, KSEB had anticipated substantial line loss reduction due to automation and strengthening of distribution system. Due to the schemes remaining incomplete the envisaged annual benefit to the extent of 29.43 MUs of power worth ₹ 7.36 crore could not be achieved.

Management replied (September 2011) that the delay in execution of work was attributable to:

- delay in commencement of work by contractor;
- non-submission of work schedule within the time frame;
- delay in survey of work; and
- delay in getting sanctions/permissions from the local authorities.

It was further stated that though there was fund loss, the objective of the Scheme was achieved as all physical parameters were achieved and the delay was due to various hurdles faced during execution of the Scheme.

The contentions of KSEB for delay in execution were inherent in such schemes and were controllable. Thus, despite the Scheme parameters being achieved KSEB had to forego not only grants of ₹ 58.08 crore but also the envisaged annual benefit to the extent of ₹ 7.36 crore by way of reduction in line losses due to non-commissioning of the three city schemes.

Laying of 11 KV XLPE* Underground Cable

3.32 With a view to providing quality power with minimum losses, project for laying of 11 KV XLPE underground (UG) cable within the town limits of Kasaragode and Kanhangad under APDRP Circle Scheme was taken up. In order to get approval from Power-Telecom Co-ordination Committee (PTCC) which was mandatory for energisation of the UG cables, KSEB was to adhere to PTCC standard of minimum vertical and horizontal clearance of 0.60 meters between telecom and power cables. KSEB could not adhere to this requirement due to supervisory lapses in execution of the contract work. PTCC denied (December 2007) permission for energisation of UG cables laid (July 2006) in these towns at a cost of ₹ 1.73† crore. The objective of the works remained unachieved since July 2006 and we are of the opinion that the investment had gone waste.

Restructured APDRP Scheme

3.33 In order to carry-on the reforms further, the GOI launched (July 2008) the Restructured APDRP (R-APDRP) as a Central Sector Scheme for XI Plan. The R-APDRP Scheme comprises Part A and B. Part A aimed to establish IT enabled system for achieving reliable and verifiable baseline data system in all towns besides installation of SCADA‡/Distribution Management System. For this, 100 per cent loan was provided which was convertible into grant on completion and verification of the same by Third Party independent evaluating agencies. Part B of the scheme dealt with strengthening of regular sub-transmission and distribution system and upgradation projects.

* Cross Linked Polethylene Insulated Power Cable.

† Kasaragode ₹ 79.31 lakh and Kanhangad ₹ 93.99 lakh.

‡ Supervisory Control and Data Acquisition–It generally refers to industrial control systems: computer systems that monitor and control industrial infrastructure or facility-based processes.

Delay in implementation of R-APDRP Scheme

3.34 Part A of the project was to be completed within three years of sanction. GOI approved DPRs (worth ₹ 214.39 crore) of Part A for 43 town schemes and sanctioned (November 2009) 100 per cent Loan of ₹ 214.39 crore. GOI released (January 2010) fund of ₹ 64.31 crore for Part A of the project. Out of this, only ₹ 1.24 crore and ₹ 4.19 crore were utilised during 2009-10 and 2010-11 respectively leaving an unspent balance of ₹ 58.88 crore.

For Part A of the Scheme, a work order for ₹ 189.94 crore to KDN Korea for supplying an IT enabled system was issued (September 2010). GOK directed (December 2010) cancellation of the process expressing reservation over the tender process and is under litigation.

KSEB submitted (March 2010) DPRs of Part B for 40 town schemes to the Nodal agency—Power Finance Corporation Ltd. for sanction and the same was approved (11 schemes in June 2010, 21 in August 2010 and 8 in December 2010). DPRs for the balance three schemes were submitted in October 2010 of which two schemes were sanctioned in February 2011 and one is pending sanction. The project cost approved for Part B was ₹ 872.17 crore. GoI in sanctioning Loan of ₹ 218.04 crore (25 per cent) released (January 2010) ₹ 75.51 crore and ₹ 55.32 crore in 2011-12. The balance was yet to be received. The implementation of Part B of the Scheme was in initial stages and KSEB could spend only ₹ 18 crore.

Strengthening of sub-transmission and distribution system

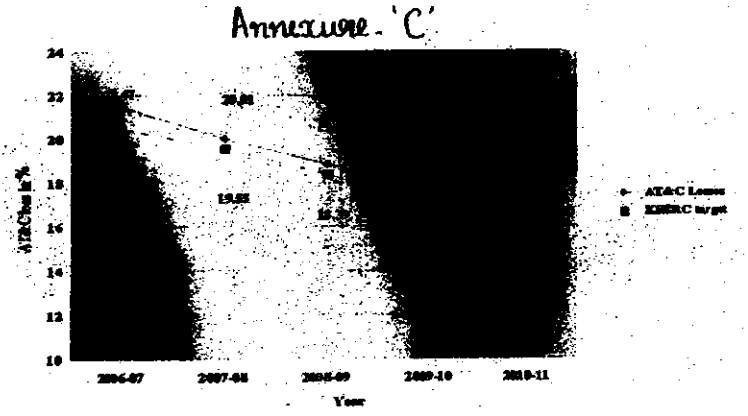
3.35 The focus in this part was on reduction of Aggregate Technical and Commercial (AT&C) Losses on sustainable basis. Twenty five per cent of this Scheme Cost was to be provided as Loan and up to 50 per cent of the Loan was convertible to Grant depending on the utility maintaining AT&C Loss level at 15 per cent for five years.

Aggregate Technical and Commercial Losses

3.36 One of the prime objectives of R-APDRP scheme was to strengthen the distribution system with the focus on reduction of AT & C Losses on sustainable basis:

The graph below depicts the AT & C Losses of KSEB during 2006-07 to 2010-11:

//GRAPH// → In Annexure 'C'



Though there had been a steady improvement in AT&C Loss reduction, the percentage of actual energy loss was high when compared to the KSERC target. KSEB should strive to achieve the target fixed by KSERC.

Consumer metering

3.37 Cent per cent metering had been achieved prior to 2006-07 itself.

Operational Efficiency

3.38 The operational performance of an electrical utility is judged on the basis of availability of adequate power at reasonable rates for distribution, adequacy and reliability of distribution network, minimising line losses, detection of theft of electricity, etc. These aspects have been discussed below:

Purchase of Power

3.39 The demand for energy has been increasing year after year in the State due to economic development. Assessment of future demand and requirement of power is calculated on the basis of past consumption trends, present requirement, load growth trends and AT & C Losses and its trend.

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

(in Million Units)

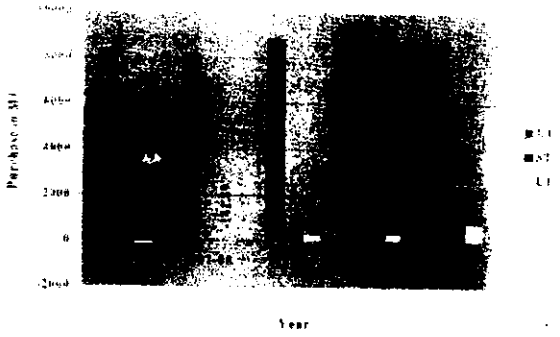
Year	*Demand assessed in EPS*	*Demand approved by KSERC*	*Power generation and purchase*	*Surplus/ (Deficit)*	*Surplus/(Deficit) against KSERC's approval*
(1)	(2)	(3)	(4)	(5) = (4-2)	(6) = (4-3)
2006-07	13786	13652	14428	642	776
2007-08	15315	15315	15065	(250)	(250)
2008-09	16266	16156	15293	(973)	(863)
2009-10	16913	16665	16978	65	313
2010-11	17821	17461	17337	(484)	(124)

It may be seen from the above table that the power requirement was in excess of the assessment as approved by KSERC during 2006-07 and 2009-10. There was shortfall in the years 2007-08, 2008-09 and 2010-11.

For the above purchases, KSEB entered into long-term (LT) and short-term (ST) power purchase agreements with various agencies, viz., State Generation Units, Central PSUs, IPPs, etc., besides unscheduled interchange (UI) purchases on need basis. The break up of the total power purchased into LT, ST and UI was as follows:

//GRAPH// → In Annexure 'D'

Annexure 'D'



It could be seen from the above that there was no short-term purchase during 2006-07 and 2007-08. Thereafter the short-term purchase increased every year (33.44 per cent during 2009-10 and 74.89 per cent during 2010-11 compared to previous years) whereas there was drop in long-term purchase in the years 2007-08 and 2010-11.

The source-wise purchase of power during audit period was as given in Annexure 13.

3.40 KSEB was not able to meet the power requirements of the consumers in the State from its own generating units. It made purchases from Central pool-NTPC-a GoI PSU and private sources.

Cost per unit of power both under short-term and long-term purchase was increasing from 2009-10 onwards. While cost of short-term purchase increased from ₹ 4.50 in 2009-10 to ₹ 4.66 in 2010-11, increase in cost of long-term purchase was from ₹ 3.12 in 2009-10 to ₹ 3.34 in 2010-11.

The purchase of power from outside parties had to be seen in view of the fact that its own Capacity Expansion plans during the period 2006-2011 were not fructifying as separately discussed in Para 3.52 below:

This indicated the need for capacity addition/augmentation of own generation or the need to enter into LT purchase contract to avoid expensive ST purchases.

Sub-transmission and Distribution Losses

3.41 The distribution system is an important and essential link between the power generation source and the ultimate consumer of electricity. Efficient functioning of the system requires that there are minimum losses in sub-transmission and distribution of power. While energy is carried from the generation source to the consumer, some energy is lost in the network. The losses at 33KV stage are termed as sub-transmission losses while those at 11KV and below are termed as distribution losses. These are based on the difference between energy received (paid for) by the distribution utility and energy billed to consumers. 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 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. On the other hand, commercial losses occur due to theft of energy, defective meters and drawal of unmetered supply, etc.

The table below indicated the energy losses of KSEB for the five years up to 2010-11:

(In Million Units)

Sl. No.	*Particulars*	*2006-07*	*2007-08*	*2008-09*	*2009-10*	*2010-11*
1	Generation and purchase	14427.97	15065.11	15293.51	16978.04	17337.78
2	Sale within State*	11331	12049.85	12414.32	13971.09	14547.90
3	Energy losses (1-2)	3096.97	3015.26	2879.19	3006.95	2789.88
4	Percentage of energy losses (per cent) {(3 / 1) x 100}	21.47	20.01	18.83	17.71†	16.09
5	Percentage of losses allowed by KSERC (per cent)	20.46	19.55	18.39	16.92	15.31
6	Excess losses (in MUs)	145.69	69.30	67.29	134.13	135.23
7	Average realisation rate per unit (in ₹)	3.46	3.68	3.96	3.53	3.72‡
8	Value of excess losses [₹ in crore (6x7].	50.41	25.50	26.65	47.35	50.31

It would be seen from the above table that losses had comedown progressively and ranged between 21.47 per cent and 16.09 per cent during the five years ending 31st March, 2011 but was more than the targets of 15 per cent and 15.31 per cent set by MoP and KSERC respectively for achievement by 2010-11.

* This represents the energy available for sale within the state after deducting all the losses and sale outside the state.

† Truing up is pending before Kerala State Electricity Regulatory Commission.

‡ Including revenue subsidy.

The importance of reducing losses could be gauged from the fact that every per cent decrease in energy loss would add an additional revenue of ₹ 64.50 crore to KSEB at current average realisation rates.

Management replied (September 2011) that the target fixed for reduction of AT&C Loss by 2011-12 in KSEB was 15.89 per cent. The reply is not correct as the target set for AT&C Losses by MOP was 15 per cent by the year 2010-11.

Performance of Distribution Transformers

3.42 KSERC had fixed the norm of failure of Distribution Transformers (DTRs) (five per cent for urban and 12 per cent for rural areas) in its Tariff Orders. The details of norms fixed, actual DTRs failed and the expenditure incurred on their repairs were as shown below:

Sl. No.	*Particulars*	*2006-07*	*2007-08*	*2008-09*	*2009-10*	*2010-11*
1	Existing DTRs at the close of the year (in Number)	39848	42924	47036	52724	58528
2	DTR failures (in Number)	1728	1634	1310	1429	1207
3	Percentage of failures	4.34	3.81	2.79	2.71	2.06
4	Norm allowed by SERC (in percentage) (Urban/Rural)	5/12	5/12	5/12	5/12	5/12
5	Excess failure percentage over norms	Nil	Nil	Nil	Nil	Nil
6	Expenditure on repair of failed DTRs (₹ in crore)	1.72	1.24	1.28	1.17	1.31

It could be seen from the above table that the percentage of failure was within the norms and showed a decreasing trend. Cause-wise analysis of failure of DTRs revealed that failure due to overloading ranged between 9.10 per cent to 18.70 per cent during the period under audit.

Detailed analysis of four* selected Transformer Maintenance and Repair divisions revealed that failure on account of LT line short, poor oil condition, loose connection, less Insulation Resistance (IR) value, lightning, internal short circuit and less oil level contributed between 81.30 per cent to 90.90 per cent of the total failures (other than manufacturing defects) during the audit period, which were controllable.

Procurement of conventional Distribution Transformers

3.43 Government of India made (July 2009) purchase of energy efficient star rated DTRs mandatory with effect from January 2010. The minimum recommended star rating was three. Use of three star rated DTRs, compared to the conventional type DTR, envisaged an annual energy saving of 1808.06 units for a 100 KVA DTR and 3347.196 units for a 160 KVA DTR.

We noticed that KSEB purchased 1600 conventional 100 KVA DTRs and 50 numbers 160 KVA DTRs between May and July 2010 which translated into aggregate annual loss of 3.06 MUs of Power. Reckoning the average life of star rated DTRs as 25 years, the potential loss of energy would be as much as 76.5 MUs worth ₹ 28.46 crore†.

Management stated (September 2011) that purchase of conventional transformers was resorted to for effecting timely service connections and for carrying out the targeted works as per annual plan which otherwise would have been delayed. They further stated that the loss worked out in Audit was based on assumptions and not on actual system loss measurement. The reply was not tenable as notification making use of star rated transformers, by

* Thirumala, Pallam, Angamaly, Shornur.

† At the rate of ₹ 3.72 per unit, having a net present value of ₹ 1.23 crore (discounted at 12 per cent per annum) and adjusted for the excess expendiure in purchase of star rated DTRs.

Bureau of Energy Efficiency was mandatory with effect from January 2010 and the purchase orders for procurement of star rated DTRs were issued only in July 2010. The loss was worked out on the basis of envisaged savings in energy if star rated transformers were installed.

Capacitor Banks

3.44 As at the beginning of 2006-07 the KSEB had an installed capacity of capacitor banks to the extent of 1405 MVAR. During audit period, 2006-07 to 2010-11, no new capacitor banks were added which could have improved the voltage profile and reduced dissipation of energy to a great extent. Thus, the opportunity of reducing loss of energy was lost.

Incidence of theft

3.45 Commercial losses are caused due to theft of energy by tampering of meters by the consumers and unauthorised tapping/hooking by the non-consumers. As per section 135 of Electricity Act, 2003, theft of energy is an offence punishable under the Act. As per Section 126 (5) of the Electricity Act, 2003, the penalty to be levied for unauthorised use of electricity is to be determined for the entire period for which theft is established or twelve months prior to the date of detection of theft, if the actual period could not be ascertained. This would require checking of electrical installations at consumers premises at least once in a year.

Performance of Raid Team

3.46 In order to minimise the cases of pilferage/loss of energy and to save KSEB from sustaining heavy financial losses on this account, Section 163 of Electricity Act, 2003, provides that the licensee may enter the premises of a consumer for inspection and testing the apparatus. There were 13 Anti-Power Theft Squads (APTS) as at the end of March 2011 in KSEB. This Vigilance team headed by an Officer of the rank of Inspector General of Police at its headquarters was entrusted with the task of conducting raids/checking the premises of the consumers

with the assistance of Assistant Engineers and other departmental officers of KSEB. Executive Engineers of the divisions concerned were required to prepare work plan to conduct raids by identifying such consumers/areas where large scale theft was suspected. Following was the position of raids conducted during audit period:

Sl. No.	*Year*	*Consumers as on 31st March*	*Target*	*Consumers checked*	*Theft Cases*	*Assessed amount*	*Realised amount*	*Unrealised amount*
			Number			*(₹ in crore)*		
1	2006-07	8713870	9600	16221	1895	12.73	11.04	1.69
2	2007-08	9033756	13200	18606	1144	16.93	10.49	6.44
3	2008-09	9363461	13200	15792	504	29.57	18.96	10.61
4	2009-10	9743476	15600	17936	369	30.63	20.47	10.16
5	2010-11	10127946	15600	21413	355	13.83	10.94	2.89

As per Section 126 of the Electricity Act, 2003, in the event of detection of unauthorised connected load, consumers shall be penalised at twice the normal tariff for twelve months prior to the date of detection. For theft, the penalty fixed varied between three to six times the financial gain on account of such theft of electricity.

We noticed that:

- Each team had a target of 100 raids per month. The percentage of checking of consumers was on an average 0.20. The percentage of checking in terms of number of consumers had decreased from 3.52 in 2008-09 to 2.17 in 2010-11 in respect of EHT/HT consumers. In respect of industrial, commercial, agricultural and domestic category of consumers the percentage of checking was 5.31, 0.57, 0.16 and 0.09 respectively as at the end of 2010-11.

- Given the low frequency of checking, the time gap between one check and subsequent check could be more than one year. The penalty system as thus formulated did not act as a deterrent due to low frequency of checking.
- Out of unrealised amount of ₹ 31.79 crore, 113 cases involving ₹ 3.75 crore were in litigation as at the end of March, 2011.

Management replied (September 2011) that apart from the APTS inspection, consumers' premises were also inspected by Section squads and by sub-engineers and meter readers. Management reply was however silent on the follow-up action taken by KSEB in respect of the cases detected.

Billing Efficiency

3.47 The broad categories of consumers of KSEB included low tension*, high tension and extra high tension, railway traction and bulk supply. While the low tension consumers were billed bimonthly by electrical sections, other consumers were billed monthly by Special Officer, Revenue of KSEB.

The efficiency in billing of energy depended on whether:

- all the consumers who were to be charged had been billed; and
- the billing was correctly done.

Performance of KSEB in this regard was as below:

Sl. No.	*Particulars*	*2006-07*	*2007-08*	*2008-09*	*2009-10*	*2010-11*
1	Energy available for sale	12377.89	13396.61	12877.65	14024.99	14678.14
2	Free Supply†	7.18	7.73	6.04	4.30	2.91
3	Energy billed	12370.71	13388.88	12871.61	14020.69	14675.23
4	Assessed sale as percentage of inside the state sales	N.A.	N.A.	N.A.	N.A.	N.A.

* Low tension are further segregated into domestic, industrial, commercial and agriculture.

† Domestic consumers, having connected load up to 500 watts and monthly consumption up to 20 units.

3.48 It would be seen from the above that energy billed during the audit period ranged between 99.94 per cent to 99.98 per cent of the total energy available for sale while free supply was in the range of 0.06 per cent to 0.02 per cent. Electricity supplied (28.16 MU) to non-paying group resulted in expenditure of ₹ 11.23 crore [calculated at Average Cost of Supply (ACOS)] during the audit period. However, no proposal was made by KSEB for claiming this amount as subsidy from State Government. The number of beneficiaries who availed free supply of power decreased from 45510 in 2006-07 to 29033 in 2010-11. We noticed the following deficiencies in billing in the audit period:

- In respect of 235 consumers under 15 electrical divisions, during meter faulty period, billing was done reckoning incorrect average consumption resulting in short billing of ₹ 28.87 lakh.
- Short collection of fixed charge of ₹ 5.64 lakh from Low Tension consumers in 12 Electrical Divisions.
- Non-collection of penalty (20 per cent of fixed and energy charges), having a revenue impact of ₹ 37.86 lakh, for non-installation of specified capacitors in respect of 109 consumers under 12 Electrical Divisions.
- In respect of 122 consumers under 17 electrical divisions, erroneous application of tariff resulted in under realisation of revenue to the extent of ₹ 1.83 crore. Further, in respect of 58 consumers, single phase tariff was levied instead of three phase tariff, resulting in short collection of revenue of ₹ 11.67 lakh.
- In respect of 252 cases of unauthorised load detected under 15 divisions by APTS wing of KSEB, non-collection of penalty was to the extent of ₹ 1.65 crore.
- As per the CEA norm, power factor for granting incentive/charging penalty has been fixed at 0.95. In violation of this, KSEB was granting incentive/charging penalty reckoning power factor at 0.90.

- As per section 152 of Electricity Act, 2003, criminal proceedings for theft of electricity can be avoided by paying penalty. It was noticed that ₹ 11.37 lakh was short collected on this account from 19 consumers. Criminal proceedings were not initiated in any case so as to serve as a deterrent to others.

- Three consumers having connected load more than 100 KVA were billed under LT category instead of HT category resulting in revenue short collection of ₹ 25.05 lakh.

- Penalty (50 per cent of tariff) of ₹ 1.27 lakh for non-segregation of light load from power load was not collected from 16 LT industrial consumers.

- Short collection of ₹ 2.89 lakh as meter rent in respect of 161 consumers under seven Divisions.

- Non-collection of minimum guaranteed amount of ₹ 9.51 lakh from 15 LT industrial consumers.

- Unauthorised extension of electricity connection was wrongly classified as unauthorised additional load resulting in short recovery of penalty of ₹ 52.28 lakh from 28 consumers in four Electrical Divisions.

- Failure to bill consumption and additional street light points resulted in revenue short collection of ₹ 19.79 lakh.

- Non-billing of electricity duty and consequent short collection of ₹ 1.99 lakh was noticed in respect of 28 consumers under two Divisions.

Management assured (September 2011) that remedial action will be taken.

Undercharging/non-levy of Initial/Additional Security Deposits

3.49 As per Regulation 13 of Kerala Electricity Supply Code, 2005, KSEB was empowered to collect security deposit equivalent to two/three months' electricity bill from consumers having monthly/bimonthly billing cycle. Security deposit remitted at the time of power connection was to be reviewed every year and

additional deposit collected if the security deposit fell short of the required amount. The additional security deposit was to be paid by the consumer within 30 days of the notice. In case, the consumer failed to deposit the additional security, the supply of the defaulting consumers was to be disconnected.

There was failure to have an implementation mechanism to review the increase in load consumption and indicate the additional deposit payable in the consumers' bills.

A test check of records of 18 Electrical Divisions revealed that KSEB had not collected additional security deposit of ₹ 66.65 crore from 1598 consumers as of March 2010 in compliance with the above provisions.

Management admitted (September 2011) delay in collection of additional security deposit.

Revenue collection Efficiency

3.50 Revenue from sale of energy was the main source of income of KSEB. Therefore, prompt collection of revenue assumes significance. The salient features of the collection mechanism being followed were as follows:

- Payments of energy bills by cash, cheques or by demand draft.
- Revenue billed in respect of HT services is collected by Special Officer (Revenue).
- In respect of LT services, electricity bills are generally collected by the cashiers except in some areas where collection work is entrusted to certain private collection agencies.
- HT consumers are required to pay current charges within 15 days and LT consumers within 7 days from the date of the bills, failing which the consumers are liable for payment of additional charges of 18 per cent per annum on the amount of the bill for the period of delay.

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

(₹ in crore)

Sl. No.	*Particulars*	*2006-07*	*2007-08*	*2008-09*	*2009-10*	*2010-11*
1	Balance outstanding at the beginning of the year	1605.93	1778.76	1964.46	1728.97	1806.02
2	Revenue assessed/billed during the year	4286.13	4934.05	5097.48	4950.60	5403.76
3	Total amount due for realisation (1+2)	5892.06	6712.81	7061.94	6679.57	7209.78
4	Amount realised during the year	4107.51	4743.09	5285.89	4864.81	5230.24
5	Amount written off during the year	5.79	5.26	47.08	8.74	36.09
6	Balance outstanding at the end of the year	1778.76	1964.46	1728.97	1806.02	1943.45
7	Percentage of amount realised to total dues (4/3)	69.71	70.66	74.85	72.83	72.54
8	Arrears in terms of No. of months assessment (Sl. No. 6/ Sl. No. 2 X 12 months)	4.98	4.78	4.07	4.38	4.32

We observed that:

- The balance outstanding had increased to ₹ 1943.45 crore in 2010-11. The arrears in terms of number of months' assessment which was 4.98 in 2006-07 though had decreased to 4.32 in 2010-11. Age-wise analysis of the above outstanding dues as on 31st March, 2010 as shown in the Demand Collection and Balances (DCB) for the quarter ending 31st March, 2010 further indicated that:

  Dues of ₹ 52.99 lakh pertained to the period up to 1990-91.

  Dues outstanding for more than three years amounted to ₹ 550.81 crore (2009-10) (30.58 per cent of the total dues) consisting of dues from LT and HT categories (₹100.40 crore).

- As per provisions of Kerala Electricity Supply Code, 2005, in case electricity dues are not deposited by consumers within due date, supply shall be disconnected temporarily. Electricity supply to 91 consumers, having arrears (December 1984 to May 2011) of more than Rupees one lakh each, was not disconnected as per the above provision. Failure to enforce the deterrent provisions precipitated default in payment resulting in accumulation of arrears of ₹ 95.41 crore (July 2011).

Management stated (September 2011) that since 2006-07 the ratio of sundry debtors for sale of power to total sales had reduced from 41.50 per cent to 25.71 per cent (excluding receivables from Government) during 2009-10 by improving collection mechanism and added that remedial measures would be taken in remaining observations.

Financial Management

3.51 Efficient fund management serves as a tool for decision making, for optimum realisation of available resources and borrowings at favourable terms at appropriate time. The fund management activity includes revenue collection, billing, borrowings, grants, transfer of funds, interest recovery/payments,

restructuring of loans, security deposits, bank reconciliations and other related transactions. While the revenue and billing have been dealt in the preceding paragraphs, other areas are discussed below:

Cash inflow and outflow

3.52 The following table depicts the details of cash inflow and outflow for the three years ending 31st March, 2010.

(₹ in crore)

Sl. No.	*Particulars*	*2007-08*	*2008-09*	*2009-10*
Cash Inflow				
1	Net Profit/(Loss)	217.42	217.42	240.71
2	*Add*: adjustments	636.51	-1063.60	-2536.86
3	Operating activities	948.78	1452.23	2327.08
4	Investing activities	186.47	422.56	449.77
5	Financing activities			309.13
	Total	1989.18	1028.61	789.83
Cash Outflow				
6	Operating activities	123.51	22.81	178.12
7	Investing activities	364.88	653.81	789.33
8	Financing activities	641.8	756.36	..
	Total	1130.19	1432.98	967.45
	Net increase/decrease in cash and cash equivalent	858.99	-404.37	-177.62
	Add: Opening cash balance	724.19	1583.18	1178.81
	Closing cash balance	1583.18	1178.81	1001.19

It could be observed from the cash flow statement that there was negative growth in cash and cash equivalent as at the end of 2009-10. The repayment of long-term loans of ₹ 2235.57 crore and capital expenditure of ₹ 1798.71 crore incurred for generation projects, transmission lines, substations and creation of village electrification infrastructure were the main reasons for such negative changes in cash flow.

We noticed the following important cases which had a bearing on the finances :

- The long-term borrowings of KSEB decreased from ₹ 3335.93* crore in 2006-07 to ₹ 1409.48 crore in 2009-10 as a result of repayment of borrowings of ₹ 2235.58 crore. The repayment was possible not because KSEB generated sufficient cash surplus on its own but on the contrary through inability to incur capital expenditure of ₹ 1678.43 crore during 2006-2010 in the generation and distribution sectors. Curtailment of capital expenditure had its effect on shortfall in capacity addition, high LT/HT ratio, non-installation of vital capital equipments, insufficient transmission capacity etc., as discussed in preceding paragraphs. Most of the generation projects were postponed due to poor planning, the renovation and modernisation were also delayed, which had been discussed in Paragraph 3.25 of Audit Report (Commercial) No. 4— Government of Kerala for the year ended 31st March, 2010.

  This shortfall in capacity addition had its fallout in the form of purchase of power from outside parties as already discussed in Paragraph 3.40.

  Management stated (September 2011) that repayment of loans was ensured through surplus cash generated and utilisation of non-cash flow expenditure. KSEB had incurred capital expenditure of ₹ 514.47 crore ₹ 364.37 crore, ₹ 644.50 crore and ₹ 875.54 crore during 2006-07, 2007-08, 2008-09 and 2009-10 respectively. They further added that capital expenditure during 2008-09 was higher than previous year. The reply was not acceptable since audit observation was on actual shortfall in capital expenditure vis-à-vis planned expenditure. Actual capital expenditure as a percentage of planned expenditure during 2006-07 to 2008-09 was only 69, 32 and 52 respectively which was due to non-implementation of the planned schemes.

*At the beginning of 2006-07.

- They procured 3.34 lakh three phase LT meters during the period November 2008 to May 2011 at a cost of ₹ 77 crore in 8 tranches for replacement of existing faulty meters and for giving new connections. But instead of purchasing the basic meters, added the specifications of the meter being able to give the 'time of the day' (ToD) consumption readings facility also based on the recommendations of their Technical Core Group.

- We noticed (September 2009) during an examination of the proposal and purchases that the differential ToD tariff was not contemplated for the LT consumers* of KSEB either in 2008 or now (November 2011). Thus, the purchase of equipment (from November 2008) which was beyond the needs, cost KSEB an extra expenditure of ₹ 41.03† crore.

  We also noticed that KSEB, to arrive at the quantity to be purchased, did not have a procedure to ascertain the stock in hand of meters at various Divisions/Sections. The requirement was assessed based on stock at Transformers Maintenance and Repair (TMR) divisions only which was a case of poor planning. We apprehend that much of this purchase was unnecessary besides being beyond the needs of KSEB.

  Management stated (February 2010) that decision of KSEB to procure three phase LCD meters with ToD facility was a practical approach for introducing technologically advanced meters suitable for implementing ToD tariff required in future. The reply was not tenable as no approved tariff applicable to all LT consumers existed and KSEB had not even studied the revenue implication of ToD tariff. Advance procurement did not have advantage; on the contrary there was a risk of technological obsolescence and not getting the benefit of declining price trend of electronic metering equipments.

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* Except for LT IV Industrial, LT VII (A) and (C) commercial consumers with connected load of 20 KW and above and ToD tariff for LT Industrial consumers having contract demand of 27 KW and above.

† Comparison made in Audit with meters having LCD display, tamper proof features and downloading facilities through Common Meter Reading Instrument. DGS&D Basic price ₹ 830 (September 2008), ₹ 775 (November 2009) and ₹ 774 (October 2010). 16500 meters @ ₹ 1,280 (2110-830)=₹ 21.12 crore and 169000 meters @ ₹ 1,178 (1953-775)=₹ 19.91, crore.

- For the implementation of Bachat Lamp Yojana* (BLY) in the State, KSEB sanctioned (2010) a loan of ₹ 51.50 crore to Energy Management Centre† (EMC). The loan was to be repaid with 13.50 per cent interest. Repayment of loan was critically dependent on the capacity of EMC to earn carbon credit under Clean Development Mechanism (CDM) and sell the same.

  For any agency to be eligible for carbon credits, registration with UNFCCC‡ was mandatory. Though the BLY scheme was closed in August 2010, the same was registered by EMC with UNFCCC only in May 2011.

  Management replied (September 2011) that repayment of loan was dependent on sale of carbon credit by EMC. The EMC could not recover any amount so far (November 2011) through sale of carbon credit rendering the recovery of loan advanced to EMC doubtful.

- As discussed in Paragraph 3.49, KSEB did not collect additional security deposit amounting to ₹ 66.65 crore from the consumers. Meanwhile, their working capital borrowing had increased from ₹ 72.91 crore in 2006-07 to ₹ 160.45 crore in 2009-10. Collection of the additional security deposit would have lessened this external borrowing to a considerable extent with annual interest savings of ₹ 1.33 crore.

  They granted favour to EHT consumers and HT§ consumers also by allowing them to remit 50 per cent of additional security deposit by way of bank guarantee instead of cash. This itself deprived KSEB of working capital to the tune of ₹ 83.56 crore with potential interest savings of ₹ 1.67‖ crore.

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* A scheme introduced by the Bureau of Energy Efficiency under the Ministry of Power aimed at selling CFLs at subsidised rates to domestic consumers in order to reduce peak hour power consumption in the country. The difference is prices was to met from carbon credit under the Clean Development Mechanism.

† As Distribution utilities were not allowed to propose projects under BLY, KSEB inplemented the scheme through Energy Management Centre (EMC), an autonomous body of Government of Kerala.

‡ United Nations Framework Convention on Carbon Credit.

§ In case of HT consumers 50 per cent of additional security deposits exceeding ₹ 5 lakh.

‖ Based on the borrowing rate of 8 per cent less 6 per cent interest payable on security deposit.

Management replied (September 2011) that mode of collection of security deposit was in accordance with the provisions of Kerala Electricity Supply Code, 2005, approved by KSERC. The reply was not acceptable since the provisions as proposed to KSERC by KSEB were not framed to safeguard its own financial interest.

- As discussed in Paragraph 3.31, the incentive component of the APDRP scheme was meant for incentivising up to 50 per cent of the actual cash loss reduction that would be achieved by SEBs/Utilities for the 10th Five Year Plan period. We noticed that KSEB claimed ₹ 3082.08 crore as incentive for the period 2001-02 to 2008-09. The claim received was ₹ 64.94 crore (against the claim of ₹ 168.03 crore) for the years 2001-2003 and ₹ 82.99 crore (against the claim of ₹ 467.14 crore) for the year 2004-05. Decision in the matter was awaited (November 2011).

SUBSIDY SUPPORT AND CROSS SUBSIDISATION

Subsidy Support

3.53 During the performance audit period against the subsidy claim (2009- 2011) of ₹ 670.55 crore, only ₹ 99.97 crore was actually paid by the State Government.

Cross Subsidisation

3.54 Section 61 of Electricity Act 2003 stipulates that the tariff should progressively reflect the average cost of supply (ACOS) of electricity and also reduce cross subsidy in a phased manner as specified by the Commission. National Tariff Policy envisaged that the tariff of all categories of consumers should range within plus or minus 20 per cent of the ACOS by the year 2010-11. The tariff proposals submitted by KSEB did not adhere to this.

The position as regards cross subsidies in various major sectors was as depicted in the table below:

Particulars	2006-07		2007-08		2008-09		2009-10		2010-11	
Average cost of supply (ACOS) in paise	317.00		331.00		494.00		464.00		485.00	
Average Revenue from										
	Paise per unit	Percen-tage of ACOS	Paise per unit	Percen-tage of ACOS	Paise per unit	Percen-tage of ACOS	Paise per unit	Percen-tage of ACOS	Paise per unit	Percen-tage of ACOS
Domestic	166.96	52.67	172.1	51.99	191.71	38.81	191.46	41.26	198.32	40.89
Commercial	660.68	208.42	668.2	201.87	743.65	150.54	702.39	151.38	722.86	149.04
Industrial	414.73	130.83	414.75	125.30	459.81	93.08	426.41	91.90	437.17	90.14
Agricultural	102.32	32.28	105.45	31.86	135.35	27.40	109.9	23.69	115.11	23.73
Public Lighting	187.16	59.04	190.15	57.45	200.31	40.55	191.64	41.30	211.82	43.67
HT & EHT	394.14	124.33	401.24	121.22	479.77	97.12	414.47	89.33	424.58	87.54
Railway Traction	334.73	105.59	359.04	108.47	475.84	96.32	397.87	85.75	412.16	84.98
Bulk supply	276.35	87.18	286.65	86.60	455.72	92.25	347.05	74.80	364.77	75.21

3.55 As seen from the table the tariff fixed for various categories of consumers was not restricted to the band of plus or minus 20 per cent of the ACOS.

- As per section 65 of Electricity Act 2003, the State Government is obliged to pay subsidy if it desires to grant subsidy to any consumer/classes of consumers in the tariff determined by State Commission. Had tariff been

fixed in accordance with the above requirement, restricting the variation in tariff to the band of plus or minus 20 per cent of the ACOS, subsidy payable by the Government as worked out by us would have been ₹ 5130.98 crore in respect of domestic, agricultural consumers and public lighting.

- The subsidy claimed from State Government was only ₹ 670.55 crore. The shortfall in recovery of subsidy from State Government was partly cross subsidised by industrial and commercial consumers to the extent of ₹ 1590.01 crore. There still existed a shortfall to the extent of ₹ 2870.42 crore (Annexure 14) over the audit period.
- Average realisation based on approved tariff was far below the ACOS in respect of domestic, agricultural consumers and public lighting whereas the average realisation in respect of commercial was far in excess of ACOS.
- As per the National Tariff Policy, KSERC was to lay out a road map for phasing out the cross subsidisation. However, no regulation on reduction of cross subsidy has been promulgated by the Commission so far.

Management did not offer their comments with regard to the above observations.

Tariff Fixation

3.56 The Central Electricity Regulatory Commission (CERC) has stipulated that the Tariff should be fixed so as to recover Return on Equity on Pre-Tax basis at the base rate of 15.50 per cent. The shortfall in revenue that would have fetched per cent return is referred to as Regulatory Asset. The facility of Regulatory Asset is to be utilised only as an exception and subject to the following conditions:

- the circumstances should be clearly defined through regulations and should only include natural causes or force majeure conditions. Under usual business conditions, the opening balances of uncovered gap must be covered through transition financing arrangement or capital restructuring;
- carrying cost of Regulatory Asset should be allowed to the utilities;
- recovery of Regulatory Asset should be time bound and within a period not exceeding three years at the most and preferably within control period;

- the use of the facility of Regulatory Asset should not be repetitive;
- in cases where Regulatory Asset is proposed to be adopted, it should be ensured that the Return on Equity should not become unreasonably low in any year so that the capability of the licensee to borrow is not adversely affected.

KSEB had an amount of ₹ 3393.86 crore* outstanding as Regulatory Asset as on 31st March, 2011. As per the National Tariff Policy, Regulatory Asset was to be recovered within three years through Tariff revision or written off thereafter. We observed failure to comply with this provision during the audit period.

Filing of ARR & ERC petition

3.57 In accordance with KSERC Tariff Regulations 2003, KSEB has to file before the Commission its Aggregate Revenue Requirement (ARR) and the Expected Revenue from Charges (ERC) four months before the commencement of each financial year. KSEB was to state the manner of bridging the revenue gap between ARR and ERC. Tariff revision is permitted if the revenue gap could not be met otherwise and in such cases Tariff Revision Petition was to be filed along with ARR& ERC petition. The Commission is to provisionally admit the revenue gap subject to final rectification at the time of truing up petition to be submitted along with next year's ARR & ERC petition.

In accordance with the mandatory provision, KSEB filed ARR & ERC petition for all the years up to 2010-11. Against the aggregate revenue shortfall of ₹ 1487.58 crore proposed by KSEB in the ARR for the three years up to 2008-09†, the Commission had approved a revenue surplus of ₹ 1945.16 crore. The actual revenue gap for these years as per finalised Accounts up to 2008-09 amounted to ₹ 982.69 crore. The KSERC disallowed major expenditure under Purchase Cost, which was controllable factor and Depreciation, due to non-adherence to the directions of the Commission.

* Increased from ₹ 142.23 crore in 2006-07.

† Truing up orders for 2009-10 and 2010-11 were pending.

We noticed that there was delay in filing of ARR & ERC for periods ranging from 12 to 24 days. However, there was no tariff revision.

Management did not offer their comments to these issues.

Energy Audit

3.58 A mechanism for comprehensive Energy Audit was to be put in place with the objective of identifying the areas of energy losses and taking steps to reduce the same through system improvements besides accurately accounting for the units purchased/sold and losses at each level. The main objectives of energy audit were as follows:

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

Energy audit helps to identify the areas of energy losses from a particular DTR. With a view to identify DTR-wise distribution losses installation of meters of DTRs is imperative.

Scrutiny of records revealed that:

- KSEB had not identified areas of energy losses so far.
- There were 52724 DTRs in operation (March 2010) of which 36781 DTRs were not metered.
- Energy Audit Reports were not generated in respect of even the metered DTRs resulting in non-achievement of the objective of identifying energy losses.
- Compared to the AT & C Losses allowed by KSERC, the excess loss worked to 551.64 MUs having financial implication of ₹ 200.22 crore.
- Management replied (September 2011) that the loss for the three years 2006-2009 as per the truing up orders of KSERC was 359 MU valued at ₹ 80.38 crore. The fact, however, remains that KSEB could not achieve the target initially fixed by the Regulator.

- KSERC issued directions to KSEB (April 2009) that plan of energy audit shall be filed within two months from the date of order. This had not been complied with (November 2011).

Energy Conservation

3.59 Government of India enacted the Energy Conservation Act, 2001 which provided the legal framework, institutional arrangement and a regulatory mechanism at the Central and State level to embark upon energy efficiency drive in the Country.

Initiatives of KSEB in this regard were as summarised below:

- In tune with the Central Act, KSEB organised campaigns for popularising energy conservation measures through visual and print media. A leading Malayalam daily in association with Energy Management Centre (EMC is the State level designated agency for implementing the Act) had conducted an intensive energy saving campaign by inserting advertisement with celebrity endorsements and tips to save electricity.
- Under the Bachat Lamp Yojana, KSEB through EMC purchased 1.44 crore energy efficient compact fluorescent lamps (CFL) for distribution to 75 lakh houses after replacing the same number of incandescent lamps. Distribution of CFL lamps aimed at an annual energy saving of 410 MW of power in Kerala. Inappropriate staggered delivery resulted in a huge stock of 16.02 lakh CFLs remaining undistributed (September 2011).

Management stated (September 2011) that the delivery schedule was fixed with a view to distribute all the CFLs within a span of three to four months. The reply was not tenable as the purchase was done during February to June 2010. KSEB should have staggered quantity to be delivered to each Circle over a number

of lots with the quantity in each lot to be supplied subsequently depending on the consumption of quantities in the lots already supplied.

Consumer Satisfaction

3.60 One of the key elements of the Power Sector Reforms was to protect the interest of the consumers and to ensure better quality of service to them. The consumers can 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 the lines and/or transformers and improper metering and billing.

3.61 KSEB was required to introduce consumer friendly actions like introduction of computerised billing, online bill payment, establishment of customer care centres, etc. to enhance the satisfaction of consumer.

KSEB had initiated a slew of measures to improve consumer satisfaction. They included:

- Standardisation and simplification of procedures for effecting service connection, ownership change, provision of multiple connections to same premises and fixing of time frame (48 hours) for giving service connections.
- Complete computerisation of billing and revenue collection of LT, HT and EHT consumers.
- Notification of 75 Section Offices as model sections with effect from 1st June, 2009. The model sections have 100 per cent static meters, zero faulty meters, installation of border/DTR meters at section boundaries and DTRs, display of citizen charters, opening of counters with facilities for registration of applications and complaints.

Redressal of grievances

3.62 In accordance with the provisions of Section 57 of Electricity Act 2003, KSERC issued (May 2006) Standards of Performance (SoP) for power distribution

utilities. The SoP prescribed the time limit for rendering services to the consumers and compensation payable for not adhering to the same. The nature of services mentioned in the SoP *inter alia* included line breakdowns, distribution transformer failures, period of load shedding/scheduled outages, voltage variations, meter complaints, installation of new meters/connections or shifting thereof, etc. SoP was operational from 1st April, 2009 in respect of KSEB. KSERC permitted KSEB to treat the first year of implementation of the Regulations (April 2009 to March 2010) as trial period and exempted from payment of compensation for any deviation during the trial period.

KSERC also formulated KSERC (Consumer Grievance Redressal Forum and Electricity Ombudsman) Regulations 2011 in pursuance of the Act ibid specifying the mode and time frame for redressal of consumers' grievances.

KSEB replied that Executive Engineers were designated (September 2010) as Nodal officers for effective implementation of SoP regulations. Reports from these Officers were scrutinised at Head Office level and corrective measures taken.

Monitoring by top management

3.63 KSEB had evolved regular monitoring systems through which top management was informed of the operational and financial performances in broad parameters. Distribution activities of KSEB were reviewed in monthly meetings at Circle level and Chief Engineers' level attended by KSEB's Technical Member for distribution. Strategy for each month was evolved in these meetings with reference to annual programme. Similar monitoring systems were also discussed upon at KSEB level and collective decisions were taken in consideration of recommendations of field offices.

[Audit Paragraphs 3.1 to 3.63 contained in the Report of Comptroller and Auditor General of India for the ended 31-3-2011 (Commercial).]

ANNEXURE 12

STATEMENT SHOWING PARTICULARS OF DISTRIBUTION NETWORK PLANNED VIS-À-VIS ACHIEVEMENT THERE AGAINST IN THE STATE AS A WHOLE DURING 2006-07 TO 2010-11 IN KERALA STATE ELECTRICITY BOARD

(*Referred* to in paragraphs 3.23, 3.24 and 3.26)

Sl. No.	Description	2006-07	2007-08	2008-09	2009-10	2010-11†	Total
(A)	**No. of Substations (of various categories)**						
i	At the beginning of the year	267	282	301	319	348	
ii	Additions spill from the previous year	47	58	54	66	51	
iii	Additions planned for the year	26	15	30	14	34	166‡
iv	Additions made during the year	15	19	18	29	13	94
v	At the end of the year (i+iv)	282	301	319	348	361	
vi	Shortage in addition (ii-iii)	58	54	66	51	72	
vii	Percentage of achievement [iv/(ii+iii)]*100	20.55	26.03	21.43	36.25	15.29	
(B)	**HT Lines (in CKM)**						
i	At the beginning of the year	34596	36419	38235	41284	44683	
ii	Additions planned for the year	6000	3427	3938	3907	4063	

† Provisional.

‡ Including 47 substations spilled from 2005-06.

iii	Additions made during the year	1823	1816	3049	3399	2818	12905
iv	At the end of the year	36419	38235	41284	44683	47501	
v	Shortage in addition (ii-iii)	4177	1611	889	508	1245	
(C)	**LT Lines (in CKM)**						
i	At the beginning of the year	217899	226128	234286	241849	249687	
ii	Additions planned for the year	17000	4043	9250	6666	3141	
iii	Additions made during the year	8229	8158	7563	7838	6219	38007
iv	At the end of the year	226128	234286	241849	249687	255906	
v	Shortage in addition (ii-iii)	8771	Nil	1687	Nil	Nil	
(D)	**Transformers Capacity (in MVA)**						
i	At the beginning of the year	5033.35	5157.60	5422.77	5937.45	6708.44	
ii	Additions made during the year	124.25	265.17	514.68	770.99	450.07	2125.16
iii	At the end of the year	5157.60	5422.77	5937.45	6708.44	7158.51	

HT/LT ratio at the beginning of 2006-07 is 34596:217899, i.e., 1:6.29.

HT/LT ratio at the end of 2010-11 is 47501:255906 i.e., 1:5.38.

ANNEXURE 13

STATEMENT SHOWING SOURCE-WISE PURCHASE OF POWER DURING 2006-2011 IN KERALA STATE ELECTRICITY BOARD

(*Referred* to in paragraph 3.39)

(In Million Units)

Year	Own Generation	Long-Term		Short-Term		Others (UI)	Total
		CGS	*IPPs*	*Traders*	*Exchanges*		
2006-07	7695.11 (0.15)	8113.15 (1.63)	206.71 (11.32)	..	..	-170.02	15844.95
2007-08	8647.69 (0.23)	7828.08 (2.05)	388.43 (10.33)	..	..	-141.89	16722.31
2008-09	6440.44 (0.64)	7869.53 (2.56)	979.76 (7.61)	194.55	267.11	318.03 (5.09)	16069.43
2009-10	7189.51 (0.51)	8440.39 (2.75)	772.13 (7.16)	229.79 (5.08)	386.25 (4.15)	371.40 (2.41)	17389.47
2010-11	7357.46 (0.32)	8253.53 (3.09)	385.08 (8.81)	679.88 (5.01)	397.50 (4.03)	796.30 (1.53)	17869.75

Note: Figures in bracket denote average cost of purchase in ₹.

ANNEXURE 14

STATEMENT SHOWING SHORTFALL IN RECOVERY OF SUBSIDY BY KERALA STATE ELECTRICITY BOARD FROM STATE GOVERNMENT

(*Referred* to in paragraph 3.55)

Particulars	Average revenue (Paise/unit)	Percentage of ACOS	Percentage of subsidy	Cross subsidy over band of ± 20 per cent	Units sold (MU)	Loss on account of subsidy crossing band (₹ in crore)
2006-2007						
ACOS (Ps)	317.00					
Domestic	166.96	52.67	47.33	27.33	5213.15	451.67
Commercial	660.68	208.42	-108.42	-88.42	1245.80	(349.17)
Industrial	414.73	130.83	-30.83	-10.83	933.93	(32.06)
Agriculture	102.32	32.28	67.72	47.72	220.24	33.32
Pub. Light	187.16	59.04	40.96	20.96	228.74	15.20
HT/EHT	394.14	124.33	-24.33	-4.33	3081.63	(42.34)
Traction	334.73	105.59	-5.59	Nil	72.16	..
Bulk supply	276.35	87.18	12.82	Nil	335.35	..
Total						76.62
2007-2008						
ACOS (Ps)	331.00					
Domestic	172.10	51.99	48.01	28.01	5602.85	519.38

Commercial	668.20	201.87	-101.87	-81.87	1378.33	(373.53)
Industrial	414.75	125.30	-25.30	-5.30	984.18	(17.27)
Agriculture	105.45	31.86	68.14	48.14	230.55	36.74
Pub. Light	190.15	57.45	42.55	22.55	248.56	18.56
HT/EHT	401.24	121.22	-21.22	-1.22	3139.50	(12.68)
Traction	359.04	108.47	-8.47	Nil	109.26	..
Bulk supply	286.65	86.60	13.40	Nil	356.62	..
Total						171.20
2008-2009						
ACOS (Ps)	494.00					
Domestic	191.71	38.81	61.19	41.19	5925.23	1206
Commercial	743.65	150.54	-50.54	70.54	1501.60	(227)
Industrial	459.81	93.08	6.92	Nil	1015.40	..
Agriculture	135.35	27.40	72.60	52.60	225.22	59
Pub. Light	200.31	40.55	59.45	39.45	294.32	57
HT/EHT	479.77	97.12	2.88	Nil	2986.97	..
Traction	475.84	96.32	3.68	Nil	142.07	..
Bulk supply	455.72	92.25	7.75	Nil	317.47	..
Total						1095
2009-2010						
ACOS (Ps)	464.00					
Domestic	191.46	41.26	58.74	38.74	6554.70	1178.14
Commercial	702.39	151.38	-51.38	-31.38	1793.00	(261.04)

Industrial	426.41	91.90	8.10	Nil	1064.00	..
Agriculture	109.90	23.69	76.31	56.31	257.00	67.15
Pub. Light	191.64	41.30	58.70	38.70	303.00	54.41
HT/EHT	414.47	89.33	10.67	Nil	3417.09	..
Traction	397.87	85.75	14.25	Nil	165.00	..
Bulk supply	347.05	74.80	25.20	5.20	413.00	9.97
Total						1048.63
2010-11						
ACOS (Ps)	485.00					
Domestic	198.32	40.89	59.11	39.11	6874.92	1304.03
Commercial	722.86	149.04	-49.04	-29.04	1951.74	(274.92)
Industrial	437.17	90.14	9.86	Nil	1053.45	..
Agriculture	115.11	23.73	76.27	56.27	231.56	63.19
Pub. Light	211.82	43.67	56.33	35.33	265.68	46.81
HT/EHT	424.58	87.54	12.46	Nil	3563.14	..
Traction	412.16	84.98	15.02	Nil	156.39	..
Bulk supply	364.77	75.21	24.79	4.79	448.11	10.41
Total						1149.52
Gross Total						**3540.97**
Less: Subsidy claimed						670.55
Net Subsidy receivable						2870.42

[Audit paragraph 3.1 to 3.63 contained in the Report of Comptroller and Auditor General of India for the year ended 31st March, 2011.]

Notes on the Audit Paragraph furnished by Government is given in Appendix II.

1. At the outset of the meeting the Committee sought explanation over the failure of utilization of the Regulatory Assets by Kerala State Electricity Board (KSEB). The witness disclosed that every year a certain percentage of return on equity was shown as profit and the remaining gap between the income and expenditure was shown as Regulatory Assets. The Committee was informed that Regulatory Assets would be reclassified and revalued in the Board's course of transition to Company and at present its significance was only for accounting purpose. When the Committee enquired whether it was mandatory to include Regulatory Assets for accounting, the witness explained that the Electricity Supply Act stipulates return on equity as 15% and Regulatory assets shown in the Balance Sheet was equivalent to the Accumulated loss and that loss could be adjusted during Company formation.

2. The Committee expressed dissatisfaction over the unrealistic method of accounting followed by KSEB, and wanted to know whether the profit shown were genuine or fictitious. The Accountant General pointed out that the Central Electricity Regulatory Commission had stipulated that, there should be a profit of 15%; that inturn could be attained by revision of tariff rate. The Accountant General remarked that in the State the percentage of profit shown was to be decided by the Kerala State Electricity Regulatory Commission (KSERC) which had failed to stipulate it till date. Hence the Board had no other alternative but to show the loss suffered as Regulatory Assets and remarked that KSEB considered the Regulatory Assets as a gimmick which changed huge losses into profit. The Committee enquired whether the Regulatory Assets could be excluded from the balance sheet, the witness replied that since KSEB was known to be running at a loss of ₹ 5000 crore, no difference could be made by showing the huge losses as Regulatory Assets.

3. The Accountant General explained that the Regulatory Commission was considered to be a system to mandate various technical aspects of power distribution and consumption. The norms for fixing tariff rate in each state, based on cost of generated power, vested with the State Level Regulatory Commission, which in turn was controlled by Supply Act and Modified Supply Act of

Government of India and the orders issued by Regulatory Commission from time to time. The return on equity of 15% as per Central Electricity Regulatory Commission's Tariff Regulations was applicable only to Electricity supply undertakings of Government of India. Quoting this direction, 15% profit was shown in the balance sheet by hiking Regulatory Assets so as to avoid tariff escalation. The Accountant General remarked that a strategy for writing off the Regulatory Assets should be adopted during company formation, which should be attained without much hike in the tariff rate.

4. The Committee enquired whether the purchase of power from outside would cause escalation of costs. The witness replied that the aggregate revenue requirement for the forthcoming year should be submitted to the Regulatory Commission on the 1st of December every year. The deficit between the anticipated production and consumption of power for the next year should also be assessed. Based on that, the quantum and the rate at which power had to be purchased would be fixed by the Regulatory Commission. The rates for the purchase of power would be fixed by bidding process. If the quoted rates were found lower than the prescribed rate, then tender would be awarded to the lowest quoted tenderer. Otherwise approval should be obtained from Regulatory Commission in order to refix the rate.

5. The Accountant General opined that it was impractical to enhance the tariff by keeping the cost of operation at the present level. The Accountant General added that effective measures should be evolved to curtail the cost of production and to enhance the revenue collection so that the loss incurred could be reduced.

6. The Committee enquired whether the Board would be deprived off any benefits if the Regulatory Assets were excluded from the balance sheet. The witness replied that other than subsidies, KSEB had not been receiving any support or benefits from the Government of Kerala. The funds for the internal functioning of Kerala State Electricity Board had been met with the revenue from the sale of power.

7. Funds required for the project implementation and working capital were being met by the Board from Power Finance Corporation and R.E.C. which in turn grant loans on scrutinizing the Balance Sheet and Profit and Loss Account of the

Board. Financial institution were hesitant to grant loans to companies running on huge losses. The inclusion of Regulatory Assets in the Balance Sheet acts as a means to avail loan from Financial Institution. At this juncture the Committee opined that Regulatory Assets were considered as a legal device to safe guard the companies that were running in huge losses.

8. When the Committee enquired whether an increase in the Regulatory Assets would lead to any hike in the employee's cost, the witness explained that the Board had been following a remuneration package for five years duration fixed after having discussions with various trade unions. Annual increase in D.A. was the only additional expenditure incurred by Board. The Board had been following remedial measures like deployment and re-deployment of manpower in order to curtail the expenses.

9. The Committee wanted to know the action taken by the Board on the recovery of Regulatory Assets within a time limit of 3 years. The witness stated that it could be achieved only by a huge upward revision in the Tariff rate. Since it was not practical the Board had decided to revalue and wipe off the Regulatory Assets from the Balance Sheet when the company formation would be completed by March-April 2013. The Committee was informed that if the Land and Buildings were assessed in a realistic manner, the value of the assets of the Board would be higher than the present value of assets viz. ₹ 6362 crore shown in the Balance Sheet.

10. The Committee viewed that Kerala State Electricity Board had been following an outdated method for asset valuation and still depend on it as their base for accounting and directed that assets should be revalued in a realistic and proper manner, so that the value of Regulatory Assets shown in the Balance Sheet could be reduced. The Committee urged that steps should be taken to reduce transmission loss in order to generate maximum income. The witness informed that the difference in value between the existing assets of the Board and the value of assets when revalued would be treated as revaluation reserve and that Regulatory Assets could not be written off on that basis. During the transition period from Board to company the Regulatory Assets would be restructured as a one time effort so that the new company would be relieved off from this burden. The Committee

expressed hope that there would be a sweeping change in all the sphere of Board's activities during the transition from Board to Company. The Committee urged that steps should be taken to increase generation so as to reduce the purchase of power and opined that this would be possible only through technical upgradation.

11. The Committee expressed its displeasure over the unrealistic method of accounting followed by KSEB and directed that the Regulatory Assets should be written off in future. The witness assured the Committee that an action plan containing remedial suggestions for reducing the regulatory assets would be submitted to the Committee and steps would be taken to write off the regulatory assets. To a query of the Committee the witness replied that thermal surcharge was withdrawn during 2008-09 by the KSERC.

12. The witness stated that the power generated from the Hydal Projects was insufficient when compared to the daily consumption of power in the State. Hence the Board was forced to purchase power at higher rates in order to meet the daily requirements. Even though the power generation based on coal was the cheapest, public protest and related matters hindered the production of power based on coal in the State and elsewhere.

13. To a query of the Committee the witness explained that as per the direction of Government of India, CASE-I bidding was invited for power purchase. The duration for the finalization of tender was nine months. The final quoting rate anticipated was between ₹ 4.5 to 5 per unit. The witness stated that since the Board had been punctual in the payment of bills, it could easily avail power from any private parties. The duration for the power purchase agreement was 25 years and power had to be purchased in bulk. The Committee was also informed that at present, the transmission corridor for providing power to Kerala, Tamil Nadu, Karnataka and Andra Pradesh was not available under the Southern Grid.

14. The Committee enquired about the future plans formulated by the Board for power generation, when Kerala was deprived of the 800 MW Hydroelectric Project and coal based power generation plant in Orissa. The Committee also enquired whether any technically feasible project with the assent of people was pending consideration with the Board. The witness informed that when the option to generate power from hydel and thermal power projects were ruled out, nuclear

and gas based projects would only be the most viable options left with the Board to generate power, but unfortunately both these options proved to be impractical till now in the State.

15. The witness informed that gas based power generation would be possible in the Kayamkulam LNG power plant using the gas from LNG Terminal in Kochi. The Committee understood that the main hindrance in implementing the project was the resistance from the public against laying of gas pipe line through land and sea. The Committee urged that the Board should formulate steps to tackle the situation so that power could be generated at a rate as low as ₹ 4.5/unit. The witness informed that the Boards expert committee recommended that by using pet coke–a by–product from thermal plant, Board could generate 500 MW of power at a cheaper rate and that it would be equivalent to the 500 MW of power generated from Hydel Project.

16. To a query of the Committee the witness replied that in addition to USA and Japan, about 300 companies all over the world were using pet coke as a fuel for generating thermal power. Adequate quantity of pet coke required for generating 500 MW power would be obtained only after the completion of BPCL expansion project which would take 2 years for its completion. But the BPCL has now demanded a rate equivalent to national/international rates for supplying pet coke. The Committee urged that KSEB should study the possibility of using pet coke as a fuel which was at hand and of low cost.

17. The Committee observed that KSEB had not formulated any action plan to achieve the ideal HT/LT ratio of 1:1 and the existing transformation capacity was inadequate as the present connected load was 18534 MVA. The witness countered that the method adopted by the Audit to arrive at the ideal ratio of transformation capacity to connected load of 1:1 was incorrect. He corroborated that of the total one crore four lakh consumers in Kerala, about 84 lakh, constitute domestic consumers. Usually the connected load of a domestic consumer constitute the aggregate of light and plug points at the time of initial wiring. At present KSEB lacks an effective mechanism to monitor the additional inclusion of plug/light points by domestic consumer after obtaining connection. The present load was assessed to be 16681 Mega Watt or 18534.78 MVA with the inclusion of

the anticipatory utilisation of power also. But the actual daily consumption was found to be only 3119 Mega Watt units, as all the power points in domestic connection were not in simultaneous use. Since 85% of the Board's consumers constitute domestic consumers, diversity factor play a pivotal role in determining the ratio. The witness stated that since the maximum demand recorded in the state was only 3119 MW against the prevailing connected load of 16681.30 MW (18534.78 MVA), the existing transformation capacity was sufficient enough to meet the demand. The Committee was informed that for finalising the transformation capacity the audit had taken the capacity of 110/11, 66/11 and 33/11 transformers alone whereas the connected load was taken for the entire, LT, HT and EHT consumers. If the entire connected load was taken for arriving at the ratio then the corresponding transformation capacity should include the capacity of distribution transformers also. If ratio of the transformation capacity to connected load was to be fixed based on audit findings then connected load of LT consumers should be excluded from the calculation. The Committee suspected whether it was a technical argument or not, the witness clarified that if extra transformers were to be installed as per the direction in the audit findings, this would need an additional investment of ₹ 9000 crore. The Committee was informed that the transformers need not be installed according to the connected load as the utilization was only 3119 MW.

18. The witness stated that if the Board could achieve the ideal HT/LT ratio of 1:1 then the transmission loss incurred could be reduced to the minimum. The Committee was informed that KSEB had been taking effective measures to draw more 11KV lines to improve the HT/LT ratio. But drawing of new HT lines through densely populated area would cause protest from public.

19. The witness further informed that the HT/LT ratio of the Board had improved from 1:6 to 1:5. The Board was determined to reduce the difference in the present HT/LT ratio. For this LT connections were now given only to domestic consumers and that industrial consumers were given HT connections. The disparity in the ratio was due to increase in number of domestic consumers.

20. The Accountant General pointed out that, though the ideal ratio of HT/LT connection was 1:1, KSEB could attain only the level of 1:5 ratio. He added

that with every per cent of reduction in transmission loss the Board could gain an additional revenue of ₹ 67 crore. As power was being purchased at ₹ 13/unit a profit of ₹ 100 crore could be achieved by one per cent reduction in transmission loss. The Accountant General remarked that KSEB should formulate an action plan to reduce transmission loss. The witness acceded to the remark and replied that transmission loss could be reduced to a great extent with the utilization of under ground cables. Though the loss could be reduced, the expenses for laying the same would be six times higher than that of drawing normal lines. The witness pointed out that one of the major defects of under ground cable was the difficulty in isolating and rectifying a defect, in case if any fault occured. The witness also suggested that it would be convenient if ducts were provided on the sides of roads for laying cables.

21. The Committee wanted to know about the technical viability of the present transmission lines. The witness stated that a upgradation process had been undergoing with reconductoring since the conductors installed were outdated and of inferior quality.

22. The Committee sought explanation for the huge transmission loss gripping KSEB. The witness replied that the present transmission—distribution loss was about 15.5% which was about 30% ten years ago. Drawing high voltage HT lines to the maximum extent of length and minimizing LT lines to the final point, would be a viable solution to reduce the transmission loss. More substations and HT transmission lines were needed to bring down the transmission loss.

23. The Committee wanted to know about the substations that were yet to be commissioned within the audit review period. The witness replied that 9 substations were commissioned during this year and added that the target fixed for the commissioning of 11 KV substation was 2 months, 33 KV substation was 6 months and that of 66 KV, 110 KV and 220KV substations were 1 year and 2 years respectively. The Committee wanted to be apprised about the reason for the difference that occurred in the number of the substations that had been commissioned as against the substations targeted to be commissioned during the audit period. The witness elucidated that as against the targeted 166 substations during the period from 2006-07 to 2010-11, 94 were completed within the audit

period and 35 were completed subsequently and the delay in commissioning of substation were mainly attributed to difficulty in land acquisition, obtaining right of way for drawing transmission lines and due to court litigation.

24. The Committee enquired about the progress of addition of substations at Annamanada, Manimala, Vazhoor and Parappanangadi. About Annamanada project the witness stated that a case related to the erection of a tower was pending with the Hon'ble High Court of Kerala and added that about 10 projects were held up due to similar issues. The Committee remarked that the problems related to the construction of Manimala and Vazhoor substations could be resolved by discussing the issue with the sitting MLA's. The witness replied that work had been progressing in the Manimala project.

25. The Committee was informed that the Parappanangadi Substation project had been given revised administrative sanction. Since there were no bidders for the first tender, the Board resorted to e-tendering but an objection was filed in the Court against drawing of lines. The Committee demanded that the details of persons who resisted the right of way for drawing transmission lines should be intimated to the concerned MLA's for negotiations.

26. The witness assured the Committee that the pending works in each district would be identified and a complete list would be furnished by May 2013.

27. The Committee stated that the Board should avoid delay in land acquisition for substations and should offer market value for the acquired land so that projects could be completed within the prescribed time frame. The Committee was informed that the value fixed by the District Collector was given for the acquired land and there were district level purchase committee to deal with negotiated purchases. The Committee suggested that the fair value fixed for the land was very low and many issues related to land acquisition could be solved by the concerned MLA's through negotiations with the parties opposing the project.

28. The Committee opined that the KSEB had failed to utilize the 90% capital subsidy provided by Government of India for implementing Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) Scheme in Kerala and enquired about the shortcomings that had occurred in the preparation of the Detailed Project Report (DPR) for that project.

29. The witness replied that although the Board had submitted proposals for implementation of this projects in all districts, sanction was accorded only for 7 districts in the 1st phase. As per the guidelines stipulated by Government of India the work should be awarded on turnkey basis and should be executed through franchisee system. When initial turnkey tenders failed to find bidders, district wise. tenders were again invited on turnkey basis. Thus Idukki became the first district to be awarded with works to be executed on the turnkey basis.

30. The Committee was surprised to note that the preparation of DPR for the RGGVY Scheme, which commenced in 2005 and which was to be completed within 5 years had got the approval only in 2010 and wanted to know the reason for the failure in the correct assessment of the quantum of works and the delay in completing the work. The witness informed the Committee that Electricity Supply Company Ltd. under NTPC (NESCL) was entrusted with the preparation of DPR (Detailed Project Report), as it was the undertaker of ongoing RGGVY projects of various states. When NESCL submitted the first DPR, it was objected by Government of India. The Committee was informed that during Power Ministers Conference in New Delhi on 23-6-2009, Kerala had expressed its strong protest for not allowing sanction for RGGVY project in Kerala and demanded the inclusion of six northern districts also in the 1st phase. The matter was again considered by the Government of India and this had led to the preparation of a revised DPR. A revised DPR for six northern districts was prepared by KSEB and was submitted during October 2010. Sanction was issued and turnkey tenders were invited for the implementation of RGGVY Scheme in six northern districts. The witness stated that some of the works proposed under RGGVY Scheme were executed under other schemes during the period between the earlier sanction and the preparation of new DPR. And thus the quantum of works identified under RGGVY Scheme was reduced. As new areas were included in order to increase the quantity of work, the total original project area got widened. The number of electric posts/kilometer increased from 20 to 25-30. In the northern districts the RGGVY Scheme came to a stand still as additional electric posts were not sanctioned due to additional expenditure. The witness stated that the Board had convened meetings with the contractors in order to negotiate the cost and quantity of additional electric posts. The witness informed the Committee that the officials of the contractor firms were

not co-operative with the Government/the Board and added that the Board was not primarily responsible for the delay in implementing the scheme in the northern districts.

31. The Committee remarked that in Malappuram district many places included under RGGVY Scheme were already electrified under various schemes but the BPL households in the rural areas were not benefited by that scheme. The witness stated that about 50% of the amount was released to the contractor in Malappuram and a time limit was fixed for completion of the works. If work was not finished within March 31, the contractor would be blacklisted and terminated from the project and steps would be taken to recover the extra cost incurred. The Committee was also informed that the Board itself would go in for the direct execution of the works in Malappuram and intended to complete the work by 31st August, 2013.

32. The Committee remarked that similar issues were prevailing in other districts also and wanted to know the present position of the scheme. The witness explained that a stand similar to that of Malappuram had been taken for the execution of works in Kannur, Kasaragode, Wayanad and Kozhikode districts. When the Committee opined that the works in all districts should be executed departmentally by KSEB, the witness stated that in order to reduce the execution costs, the contractors use labourers from other states. Since the Board could not avail such cheap labour the execution cost would be higher.

33. The Committee was informed that in the light of events that had occurred in the execution of works in northern districts, permission for direct execution in 6 southern districts was sanctioned to the Board by the Government of India along with the approval for the implementation of second phase of the RGGVY project in all districts. The Committee wanted to know whether the Board could implement the Phase II of the RGGVY Scheme in Kerala and could avail the benefit of subsidy from the Government of India. The witness assured the Committee that KSEB could easily avail 90% capital subsidy from Government of India but the extra expenditure to be incurred in implementing the project had to be met out of Boards own funds.

34. The Committee wanted the Board to terminate the contract entered into for the execution of the project in Northern districts and to execute the same departmentally as had done in the case of southern districts. The witness replied that in all Northern districts except Malappuram the first phase would be completed within the stipulated time i.e. on 31st May, 2013. If the contractor failed to complete the work in Malappuram by 31st March, 2013 then Board would take up the work and complete it by 31st August, 2013. The second phase of the project in southern districts would be completed by March 2014.

35. When the Committee remarked that officials of the Board were liable for the delayed implementation of the scheme the witness partly acceded to the same and attributed to the cause of delay in implementation to defective DPR. Though the revised DPR was submitted in 2008, the work was awarded only in August 2010. The changes that had occurred in the quantum of work could not be attributed to faults in the preparation of DPR, but to the belated approval of the DPR by the Government of India. The Committee pointed out that if the works tendered during 2009 were duly completed, the whole works would have been finished within 2 years. But the works prescribed in the DPR were still pending in 2010 and 2011 & changes in the quantity of work had occurred only during 2011. The Committee was informed that initially works were awarded in Kannur and Karsargode districts in 31-8-2010 and given a time limit of 12 months for completion.

36. To a query of the Committee the witness stated that though some flaws had crept in the preparation of DPR, the Board was not responsible for the delay in the execution of the scheme. The witness informed that KSEB was bound to follow the guidelines of Government of India and hence turnkey tenders were invited and works were awarded accordingly. Out of the 50 works tendered by KSEB only those works that were entrusted to the contractors were delayed. The witness assured the Committee that cases of contractory negligence in the Northern districts would soon be identified. The witness also assured that action would be taken to book the responsible for the delayed completion of work in southern districts.

37. The Accountant General pointed out that out of the 50 works tendered for execution, there were only 30 works that had to be implemented through the RGGVY Scheme. The Accountant General opined that the Committee should be

submitted with the list of works and the reason for the lapses that had occurred due to delayed implementation of 30 schemes. The Accountant General added that KSEB had complied with all the norms stipulated by the Government of India in implementing RGGVY Scheme in northern districts, whereas in southern districts the Board had obtained permission from Government of India for direct execution of the project. The Accountant General opined that had KSEB executed the work by itself, the very objective of the scheme could have been achieved successfully.

38. The Committee was informed that the highest authority to execute the agreement and review the works was the Chief Engineer. The witness assured the Committee that causes for the delay would be furnished to the Committee at the earliest.

39. The Committee wanted to have an assessment made by KSEB regarding the merits and defects in the implementation of RGGVY Scheme, whether the centrally sponsored assistance was lost, and any additional expenditure incurred to KSEB in the implementation of the scheme. The witness agreed to furnish the same.

40. The Committee pointed out that the Deputy Chief Engineer of the Electrical Circle, had failed to obtain work plans from the contractors, and directed that the officials of the Board's Electrical Circles responsible for the negligence be identified and liability fixed on them.

41. The Committee urged that the contract agreement for the implementation of RGGVY Schemes in the Northern Districts be terminated by March 31 and should be taken up by the Board.

42. The Committee enquired the reason for collecting charges for electric connections from 51 BPL households in Waynad district; when a grant of ₹ 2,200 per connection was provided by Government of India. The witness replied that the maximum connected load for providing free electric connection was limited to 500W. The witness stated that after verifying the connected load of the BPL house holds, liability for collecting ₹ 1,850 per connection would be fixed.

43. The Committee was also informed that 10% of the last instalment of the project cost had not yet been released by Government of India as the scheme was not completed either by franchisee system or by private parties.

44. The Committee enquired the reason for the failure of Board in attaining the objective of Accelerated Power Development and Reforms Programme (APDRP) in Kerala and pointed out that out of the 52 schemes sanctioned for a total cost of ₹ 858.30 crore, KSEB could complete only 38 schemes within the time frame of 36 months and failed to finish the remaining 14 schemes before it was closed on 31st March, 2009. A grant of ₹ 58.08 crore from Government of India was lost as the works to the extent of ₹ 32.32 crore remained incomplete and in order to complete the works of 14 schemes, the Board had to incur additional expenses. The Committee opined that the Board had failed to utilise the grants from both the Central and State Governments and directed that stringent actions should be taken against the officials responsible for the lapse of grants from Government of India.

45. The witness stated that the Chief Engineer, Corporate Planning was in-charge of monitoring the APDRP works. Out of the unfinished schemes, 3 city schemes in Thiruvananthapurm, Kozhikode and Kochi were delayed due to lapse in finalizing the estimate for tender in time and obtaining clearance for laying underground cables. The Committee opined that the Board had to foresee various implementation hurdles, before deciding the nature of works suitable for cities as well as for town schemes and also the consensus of other departments for laying underground cable. The witness disclosed that delay had occurred in the implementation process as it was a maiden project in Kerala and even the contract firm IRCON International Ltd. had failed to complete the works in time. The Committee was also informed that for Ernakulam scheme, approval was awaited for trenching 14 kilometers road.

46. On the implementation of the 11 town schemes, the witness admitted that lapse had occurred on their part and informed the Committee that out of the 14 unfinished schemes, all except 3 city schemes were almost complete and 95% of works had been executed. The Committee remarked that since all the unfinished works were executed by the Board with its own funds, the Board had failed to utilise the opportunity to avail the benefit of Government of India grant for ₹ 58.08 crore. The witness replied that as per the guidelines of APDRP Scheme, 25% of the project cost was released as Government of India grant and the balance 75% had to be met by the KSEB itself. Since the cost of incomplete works in 14 schemes was ₹ 232.3 crore, 25% of Government of India grant i.e., ₹ 58.08 crore was lost.

The Committee remarked that pendency in completing various schemes which were to be completed within 36 months from their commencement could be cited as a classic example for Board's lethargic attitude in implementing Centrally sponsored schemes. The Committee urged that, it should be furnished with explanation for the delay and action should be taken against concerned officials responsible for the loss.

47. The Committee pointed out that for laying underground cables (UG) within the limits of Kasargode and Kanhangad under APDRP Circle Scheme, KSEB had failed to adhere to the PTCC standard of minimum vertical and horizontal clearance of 0.60 meters between telecom and Power Cables. The witness admitted that supervisory lapses had occurred on their part. The Committee urged that action should be taken against the concerned officials of KSEB who were responsible for the non attainment of the objective of the scheme.

48. The Committee wanted to know the reason for the delay in the implementation of R-- APDRP Scheme. The witness informed that a Korean firm M/s KDN was entrusted for the implementation of IT systems for the scheme. But the contract was cancelled by Government of Kerala and that had led to court litigation. At present the Board had been directed to pursue further action for the speedy implementation of the project.

49. The Committee wanted to have a detailed discussion in the matter later and required to be furnished with the latest position of the implementation process, the witness replied in the affirmative.

50. The Committee enquired whether the regular and continuous purchase of power had led to reduction in the cost price of power. The witness stated that KSEB usually enter into long-term agreements of 10 to 25 years' duration and short-term agreements of 3 years' access. The Power was also purchased from day ahead market through Power Exchange where the cost showed a fluctuating trend. As a policy the Board had decided not to purchase power at the rate of ₹ 5.5/unit and above from the day ahead market in the present situation of power crisis. The Committee sought explanation for not conducting separate assessment of technical and commercial losses. The witness replied that the distribution losses were assessed on the basis of the difference between the total energy input (generation +

purchase) and energy billed to the consumers and at present it was found that the total loss is 135.23 million units. These losses had occurred due to inefficient transmission/distribution system, in addition to the commercial losses.

51. The Committee sought explanation for not installing meters in every DTRs (Distribution transformers) as directed by the Central Regulatory Commission and pointed out that only 36000 DTRs were fitted with the meters. The witness stated that as per the guidelines stipulated by the R-APDRP (Restructured Accelerated Power Development Reform Programme) meters should be installed in all distribution transformers and substations in order to assess the power loss. The Board had came out of the initial hurdles in implementing the Programme and was expecting to complete the same by 2013-14.

52. To a query of the Committee regarding the separate assessment of technical and commercial losses, the witness stated that it could be successful only after the completion of installation of meters in all substations and DTRs. All the data regarding the quantity of received and distributed power could be attained through the installed meters by taking measurements from both substations and last point of distribution. The Committee was informed that the technical defects also could be detected through the new system which was at present measured on the basis of meters of substations only. The witness added that with the completion of the whole metering system, the commercial losses occurring due to defective meters and theft of energy could also be assessed easily.

53. The Committee observed that the percentage of energy loss during 2010-11 was 16.09 percentage and asked about the target fixed for reduction of AT&C loss. The witness replied that the percentage of energy loss had been considerably reduced from 21.47(2006-07) to 16.09 percentage, but the Board could not attain the target of 15.31 per cent fixed by the KSERC.

54. The Committee enquired whether a profit of ₹ 64.50 crore could be generated by reducing the energy loss by one per cent. The witness stated that the actual profit was assessed by taking the difference between the procurement and sale cost. Out of the total 17337 Million units of generated and purchased power, the realization cost of one per cent power, i.e. 173 MU was found to be ₹ 3.72 crore. The Committee wanted to know about the actual proportion of manpower cost to other

expenses incurred, in the total expenditure of the Board. The Committee was informed that 22 percentage of the total cost was incurred as manpower cost where as 60% were spent for power purchase. To a query of the Committee the witness stated that a bench mark would be fixed in order to compare the costs with international and national standards.

55. The Committee was informed that the Regulatory Commission was against the higher employees cost which they assessed in monitory terms only. The witness added that in KSEB wages were revised in every 5 years on the basis of a bilateral agreement formulated on the basis of negotiations with the trade unions. As compared to the inflation rate, the employees cost was not high enough and the witness informed that a comparative study of Board's expenses for employees wages with National and International power agencies was being conducted by the I.I.M. Kozhikode.

56. Regarding the installation of prepaid meters, the witness informed that a pilot project had been introduced in the Government Offices at Thiruvananthapuram. But when fully implemented, the line connection to the defaulted consumers could not be cut-off through this system. Hence the Board had decided to fix a prepaid tariff for groups receiving subsidies, based on the previous years consumption and to charge additional rate for the extra units of power consumed. But the proposal for implementing the scheme was pending with the Regulatory Commission.

57. The Committee enquired whether the tariff concessions declared by the State Government could be realized and compensated with the revenue collection. The witness replied that as per the Government's decision those consumers having consumption up to 120 units of power were exempted from tariff hike and an amount of ₹ 25 crore/month should be paid to KSEB as subsidy from the State Government. Out of the pending payment of ₹ 150 crore, the Government had remitted ₹ 25 crore only.

58. But it was decided to continue with granting of concessions to this category till May 2013 and the pending payments from January to March would be realized in the financial year 2013-14. The Committee was informed that the Board had to incur expenses for the below 20 units power consumption category who fall

under the non paying groups. Their revenue could not be recovered from the State Government as the concession was declared well before the establishment of Regulatory Commission.

59. The Committee sought explanation for the procurement of conventional type transformers by the Board when the purchase of energy efficient star rated DTRs were made mandatory by the Central Electricity Regulatory Commission. The witness informed the Committee that a direction was issued by the Central Electricity Regulatory Commission in July 2009 that the Board should resort to energy efficient star rated DTRs from January 2010 onwards, in order to improve the energy efficiency. TELK and KEL were the regular suppliers of distribution transformers and for the manufacture of star rated transformers, their new design should be got approved. Hence the Board was bound to permit a transition period for the firms for getting sanction and that caused the delay. Though the cost of Star rated DTRs were higher by ₹ 40,000, the Board had to follow the direction of Central Electricity Regulatory Commission to buy high cost equipment.

60. The Committee remarked that many flaws had occurred in the planning of DTR purchase. The witness admitted that they were partially responsible for the delay occurred in the purchase of star rated DTRs.

61. When the Committee pointed out that 35% of the capacitors were not functioning for the last three years, the witness admitted that in 16 substations the capacitors were non functioning. The Committee enquired whether it was due to defective production or by improper utilisation. The witness replied that since capacitors were installed as banks, the replacement of defective ones would affect the whole unit. The Committee was informed that at present the defective capacitors were replaced and all were in perfect working condition.

62. To a query of the Committee, the witness informed that since the Capacitor Banks and Breakers were deployed in the substations, their functioning was checked according to the check list of substation maintenance schedule. Many of the capacitors at present required repair, preventive maintenance since they had completed a certain period. The Committee was informed that with the addition of new substations in the near by locations, the defective capacitors would be replaced.

63. The Committee remarked that in spite of the availability of sophisticated technology, the Board had failed to reduce power loss caused by technical defects. The Committee sought explanation on the technical know how of the operators of the Board and about the assessment of power loss at generation, transmission and distribution points. The witness informed that action had been taken for metering the whole transformers and substations for the effective measurement of energy loss.

64. Regarding the incidence of power theft the Committee wanted to know about the quantum of electricity loss due to theft and asked whether the loss occurred could be separately identified.

65. The witness informed that when the technical loss was reduced from the total loss, the rest were considered as commercial loss including the loss due to power theft. The Committee was informed that KSEB had three mechanisms for detection of theft. Anti power theft squad-which operate with the assistance of state police service and vested with statutory powers, Inter-section Inspections and Random Inspection squad headed by supervisory officers were authorised for conducting raids. At present a scheme had been formulated to provide incentives to the informers of theft.

66. The Committee was informed that about 18000, 59000, 38000 cases of power theft were detected during 2006-07, 2011-12 and 2012-13 respectively. Out of the total employees of the Board only 200-300 were working in the Anti power theft squad and admitted that there were limitations of manpower for theft detection. The Committee criticized the Board for conducting negligible percentage of checkings which was on an average of only 0.20%. The witness replied that as each raid team had a target of 100 raids/month, the teams would have to conduct 10 lakh raids to cover the whole one crore three lakh consumers.

67. The Accountant General pointed out that a large number of theft cases were detected with EHT/HT consumers who fall under 10% of the total consumers. The witness stated that computerized bills were issued to EHT & HT consumers by the Corporate Office. Usually raids were conducted when a deviation from the consumption pattern was noticed or on receiving an anonymous complaint.

68. The Committee enquired about the system prevailing in KSEB for monitoring the day-to-day revenue collection and for recovering the arrears from various Government departments. The witness stated that out of the total arrears of ₹ 1206 crore, an amount of ₹ 590 crore was to be realized from the State Government. KWA and various Public Sector Undertakings were liable to pay electricity charge arrear of ₹ 432 crore and ₹ 300 crore respectively to KSEB. Since the Industries Department had directed all the Banks to transact statutory payments through electronic payment from next financial year onwards, the Board could easily collect the electricity charges from the Public Sector Undertakings and the dues till last year with KWA would be capitalized into the Board's Pension Fund and the present years' revenue would be collected in March 31, 2014. As Panchayaths default the payment towards water charges, KWA in turn could not remit the electricity charges on time. The Committee was informed that KSEB was directed by the Finance Department to issue a single bill for all the schools, so that the amount could easily be sanctioned in the budget head for the Education Department which would became practical from 1-4-2013. This system could be followed by all departments except KWA and Public Sector Undertakings.

69. The Committee was informed that from an amount of ₹ 571.90 crore that had to be collected as arrear from private sector agencies, a major part of it fall under the pre 1992 tariff rate and added that many litigations were prevailing against the realisation of the revenue of ₹ 383.90 crore. The remaining ₹ 200 crore was to be recovered from various private industrial agencies. To a query of the Committee the witness replied that power supply to those firms was not yet severed. The witness added that when the new industrial policy was formulated in 1992, there was a mention in it to provide electricity to industrial concerns 'at rates before 1992' but there exist a dispute as to who should shoulder the liability. The Committee critisized that when stringent measures like disconnection of power connections were taken against common man, large-scale Industries having dues of ₹ 571 crore, were easily got exempted from any serious actions.

70. The Committee enquired about the fictitious and bogus amounts involved in the closing balance of revenue accounts. The witness explained that Travancore Cochin Chemicals was having an arrear of ₹ 341 crore and with a monthly billing of ₹ 5 crore. When ₹ 50 lakh was paid in the place of ₹ 5 crore it

was credited to the account of penal interest, hence no difference would be there in the total arrear amount and would be accumulated to a huge sum. The Committee opined that the Board should go in for an one time settlement of arrear by waiving off penal interest for those defaulters who remit the dues within the prescribed time. The witness stated that it was impractical to exempt a single firm from penal interest and the rate had been cut down from 24% to 18%.

71. Public Sector Companies like Keltron Rectifiers, Punalur Paper Mills, Alind and Mavoor Rayons were dissolved and had fictitious amounts as arrears. The witness disclosed that even though the companies were non functioning, it had been billed for minimum consumption/month. Thus a huge amount got accumulated as arrear with the addition of penal interest also. The Committee remarked that the Board had failed in taking disciplinary actions and fixing individual liability against the responsible officers. The Committee expressed its dissatisfaction over the Board's inefficiency in the realisation of dues from large scale consumers like Government Departments, Public Sector Undertakings and Private Companies and directed that urgent steps should be taken to waive off the penal interest and maximum due amounts should be recovered within the prescribed time limit from the defaulters.

72. The Committee sought explanation on the remark of the witness that work is in progress in Hydroelectric Power generation projects. The witness informed that Poozhithode, Ranni-Perunad and Peechi Projects were already commissioned and Vilangad and Barappol were scheduled to be commissioned in 2013. The works of Pallivasal Extension Project, Thottiyar and Chengulam Hydro electric Power Projects were progressing. At present the progress of Pallivasal Extension Scheme was held up due to geological issues related to 400 meters of tunnel digging. The Committee was informed that most of the ongoing Hydro electric Projects were proposed to be completed within 4 years, i.e., from 2007 to 2011 and the time period for completion would be different for different projects. The Committee directed that all the details regarding the causes for the delay should be furnished. The witness replied in affirmative.

73. The Accountant General pointed out that though the Athirapilly Power Project was non functional, a full fledged office was maintained by the Board. The

witness replied that since the original Athirapilly Project was held up, the Executive Engineer and the Project Manangement Unit proposed for that scheme were maintained and directed to do the investigation work of Anakkayam Project. The witness replied authentically that no full fledged office or staff was maintained for Athirapilly Project. But the name of the project management unit was kept unchanged in order to avoid the rumours of dropping it. The witness further informed that though works were awarded for the Anakkayam Project it could not be started due to issues related to clearance certificate from the Forest Department. The Committee directed that a detailed report on the present status and the details of manpower involved in the ongoing projects should be submitted to the Committee.

74. The Committee sought explanation for awarding a loan of ₹ 51.50 crore to the Energy Management Centre for implementing the Bachat Lamp Yojana despite being a centrally sponsored scheme. The witness stated that the Board had sanctioned the loan as the project was envisaged to save 400 MW Power and ₹ 4000 crore. In order to earn Carbon credit, the certification by EMC was essential and for that all the old bulbs were to be dismantled and replaced with new ones. The witness informed that the Board had given the loan on the presumption that it would be repaid with the sale of carbon credit by the EMC.

75. To a query of the Committee the witness replied that of the 1.44 crore CFLs bought for distributing to 75 lakh households, about 829000 CFLs were yet to be distributed. The Board had taken 6114 CFL for own use and 187413 were used for replacing the defective lamps. The Committee remarked that the defective lamps should not have been replaced by the Board as the suppliers were bound to do it. The witness informed the Committee that the remaining 8 lakh CFLs were being distributed to the Government Offices.

76. The Committee enquired about the Environmental hazards caused by the defective CFLs retrieved from the households. The witness stated that the firm SIDCO had rejected the work awarded to them for dismantling the defective CFLs. The Committee strongly critisized the Board for not foreseeing the pollution caused by the thrown out CFLs. The Committee pointed out that the 144 lakh CFLs that were distributed by KSEB could cause deadly diseases to mankind and

one gram of mercury could contaminate a water body of about 25000 Acre. The Committee remarked that when other countries were shifting to the use of LED lamps due to the ill effects of Mercury lamps, KSEB on the contrary was promoting the use of CFLs for the sake of energy saving.

77. The Committee enquired about the authority who had directed to distribute CFLs through Bachat Lamp Yojana and asked where did the Board purchased CFLs from. The witness stated that Energy Management Centre (EMC) was the implementing agency and the Board was vested with distribution of lamps only.

78. The Accountant General commented that in the reply furnished, it was mistakably quoted by the Board that the regulatory accounts were prepared by C&AG. The Accountant General pointed out that accounts were prepared by the Board itself and, it should try to avoid such kind of mistakes in future. The witness admitted their fault and added that the word 'audited' was omitted due to clerical errors.

79. Regarding consumer satisfaction the Committee wanted to know about the availability of materials and duration taken for providing new connections. The Committee was informed that all the materials except meters were readily available with the Board. To a query of the Committee, the witness stated that about 40000 applications/month had been kept pending for the last 3-4 years. The witness further added that of the many issues regarding the purchase of meters, procurement of defective meters from the United Electricals was the major one. When purchase order was awarded through another tender, it was countered by an MP from other state and hence the procurement got delayed due to vigilance investigation. Again another tender with prequalification norms was invited and four supplying firms had been identified. The witness informed that after the completion of a quality control test of 45 days duration by the CPRA, purchase order would be issued for 12 lakh meters. Of the total requirement of 20 lakh meters, 40000 were needed for new connections.

80. The Committee enquired about the material depots of the Board. The witness replied that material depots were present in each electrical circle and the purchase and distribution were done through supply chain Management

mechanism with Chief Engineer as its head. The Accountant General pointed out that there exist a very defective stock management mechanism and the materials were accounted in 20 electrical circles. The materials were received at the lower unit levels where particulars of the stock or payment were never maintained. The Committee remarked that providing connections to consumers got delayed due to the non availability of adequate materials and added that details regarding the material depot: mechanisms, management, purchase and availability of materials should be furnished to the Committee at the earliest.

81. The Committee wanted to know about the system prevailing in the Board for Consumer Grievance Redressal. The witness stated that KSEB had established Consumer Grievance Redressal Forums and an Electricity Ombudsman, which were effectively rendering services to the consumers.

Conclusions/Recommendations

82. **The Committee finds that there has been a spurt in the Regulatory Assets in the past 5 years. The Committee cannot hide its dismay at the queer technique opted by the Board to hide the loss incurred by making a corresponding increase in the value of Regulatory Assets. The Committee expresses its dissidence over the method of accounting procedure followed by the Board.**

83. **The Committee recommends that the system of accounting followed by KSEB has to be thoroughly revamped and restructured so that accounts can be maintained in a scientific and realistic manner showing a true and fair view of the working results of KSEB. The Committee directs the Board to write off its Regulatory Assets in order to assess its actual worth. The Committee suggests that by increasing the in-house generation and by reducing the transmission loss the Board can curb the spurt in Regulatory Assets.**

84. **The Committee infers that the huge difference in the income and expenditure of the Board can be attributed to four reasons viz., inadequate in-house generation, purchase of power at higher rates, transmission loss and substantially low tariff rates. The Committee is of the view that generating power at low cost is the only practical solution to tide over this predicament. For attaining this the Board should opt to more reliable options like using**

LNG for low cost power generation other than adhering to conventional methods. The Committee admits that it is well aware of the public resistance against laying underground gas pipeline, but urges that the Board should evolve suitable programme and policies to overcome the impediment. The Committee also wants to be apprised about using pet coke as a substitute fuel for power generation.

85. **The Committee finds that High Voltage Distribution System is an effective method to reduce distribution loss by replacing the existing LT lines with HT Lines. The Committee understands that in a densely populated state like Kerala achieving the ideal HT/LT ratio of 1:1 is an utopian idea, still the Committee urges that KSEB should initiate effective steps to draw more 11 KV lines wherever possible to improve the HT/LT ratio keeping in mind the sentiments of common man. The Committee finds that with every percentage of reductions in transmission loss the Board could gain the much needed additional revenue.**

86. **The Committee finds that KSEB had failed to commission the targeted substations during the audit period mainly due to the issues relating to land acquisition, obtaining right of way for drawing transmission lines and due to court litigations. The Committee suggests that the commissioning of substations should not be hampered due to the aforesaid reasons and recommends that instead of fair price fixed by the District Collector for land acquisition the Board should offer the market price for the land proposed to be acquired.**

87. **The Committee also directs to submit a detailed district wise list on the pending works in the construction of Substations. The Committee recommends that meetings should be convened at regular intervals to resolve the problems in drawing transmission lines.**

88. **The Committee is perturbed to learn that due to defective preparation of DPR the Board has foregone to harness the benefit to avail 90% subsidy provided by Government of India for implementing RGGVY Scheme. The Committee criticises that the Board has taken almost 5 years, i.e., the implementation time of the scheme, to finalize the DPR. By adducing this, the Committee elicits the disingenous and lethargy of the Board in implementing centrally sponsored schemes.**

89. **The Committee directs the Board to undertake the execution of pending works in the 1st phase of the scheme in northern districts and also to execute the 2nd phase of the scheme throughout the State.**

90. **The Committee recommends that the officials responsible for defective preparation of DPR and also those responsible for the delay in implementing the schemes should be booked and liability be fixed on them. The Committee wants to be submitted with a detailed report regarding the implementation of RGGVY Scheme in the State.**

91. **The Committee flays the Board's laxity which has resulted in the lapse of Government of India grant to the tune of ₹ 58.08 crore due to the inordinate delay in executing the APDRP Schemes. The Committee observes that the passive attitude of the Board towards centrally sponsored schemes has deprived the targeted rural households of electricity and urges to undertake an exhaustive study for the proper implementation so as to harness cent per cent benefits of centrally sponsored schemes. The Committee directs that it should be furnished with an explanation for the delay and also the action taken against the officers responsible for lapse of grant.**

92. **The Committee is at pains to know that many schemes of the Board drag on for years due to several reasons. The Committee directs to furnish the latest position of the implementation process of RAPDRP Scheme for further discussion.**

93. **The Committee recommends that in order to minimise the loss suffered by the Board due to pilferage/loss of energy the Board should gearup the activities of APTS by deploying additional staff and by decreasing the intervals between two consecutive raids.**

94. **The Committee is surprised to note the paradoxical approach adopted by the Board in collecting dues from its different tariff consumers. The Committee is astound to note that the Board has shown an over enthusiasm in disconnecting the supply of domestic consumer at a single instance of default but turns a blind eye towards large scale industries which commits regular default by non-payment of dues amounting to crores of rupees. The Committee criticises the laxity of the Board in recovering the**

dues from large scale industries and recommends that disciplinary action should be taken against the officers responsible for the lapse after fixing their liability. The Committee directs that the Board should take urgent steps to recover the maximum outstanding amount from the defaulters within a stipulated time waiving penal interest.

95. **The Committee directs that it should be furnished with a detailed report on various ongoing Hydroelectric Scheme elucidating the present status of each project, details of manpower employed in each project and the cause of delay that has hindered their completion in time.**

96. **The Committee observes that the delay in providing electric connections to consumers is due to non availability of adequate materials at depot level offices. The Committee directs to be furnished with a detail report regarding material depots, material management and the procedures adopted for purchase and issue of material by depot level office.**

97. **The Committee opines that about 144 lakh CFLs that were distributed by KSEB through Bachat Lamp Yojana could cause deadly diseases to mankind and one gram of mercury could contaminate a waterbody of about 25000 acre. The Committee is shocked to note that when other countries were shifting to the use of LED lamps due to ill effects of mercury lamps KSEB on the contrary was promoting the use of CFLs for the sake of energy saving. The Committee strongly critisizes the Board for not seeing the Environmental hazards caused by thrown out CFLs and directs that the Board should study Environmental factors before implementing such schemes.**

Thiruvananthapuram,
23rd March, 2015.

K. N. A. KHADER,
Chairman,
Committee on Public Undertakings.

APPENDIX I

SUMMARY OF MAIN CONCLUSIONS/RECOMMENDATIONS

Sl. No.	Report Para No.	Department concerned	Conclusions/Recommendations
1	2	3	4
1	82-97	Power	82. The Committee finds that there has been a spurt in the Regulatory Assets in the past 5 years. The Committee cannot hide its dismay at the queer technique opted by the Board to hide the loss incurred by making a corresponding increase in the value of Regulatory Assets. The Committee expresses its dissidence over the method of accounting procedure followed by the Board. 83. The Committee recommends that the system of accounting followed by KSEB has to be thoroughly revamped and restructured so that accounts can be maintained in a scientific and realistic manner showing a true and fair view of the working results of KSEB. The Committee directs the Board to write off its Regulatory Assets in order to assess its actual worth. The Committee suggests that by increasing the in-house generation and by reducing the transmission loss the Board can curb the spurt in Regulatory Assets. 84. The Committee infers that the huge difference in the income and expenditure of the Board can be attributed to four reasons viz., inadequate in-house generation, purchase of power at higher rates, transmission loss and substantially low tariff rates. The Committee is of the view that generating power at low cost is the only practical solution to tide over this predicament. For attaining this the Board should opt to more reliable options like using LNG for low cost power generation other than adhering to conventional methods. The Committee admits

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			that it is well aware of the public resistance against laying underground gas pipeline, but urges that the Board should evolve suitable programme and policies to overcome the impediment. The Committee also wants to be apprised about using pet coke as a substitute fuel for power generation.
			85. The Committee finds that High Voltage Distribution System is an effective method to reduce distribution loss by replacing the existing LT lines with HT Lines. The Committee understands that in a densely populated state like Kerala achieving the ideal HT/LT ratio of 1:1 is an utopian idea, still the Committee urges that KSEB should initiate effective steps to draw more 11 KV lines wherever possible to improve the HT/LT ratio keeping in mind the sentiments of common man. The Committee finds that with every percentage of reductions in transmission loss the Board could gain the much needed additional revenue.
			86. The Committee finds that KSEB had failed to commission the targeted substations during the audit period mainly due to the issues relating to land acquisition, obtaining right of way for drawing transmission lines and due to court litigations. The Committee suggests that the commissioning of substations should not be hampered due to the aforesaid reasons and recommends that instead of fair price fixed by the District Collector for land acquisition the Board should offer the market price for the land proposed to be acquired.

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			87. The Committee also directs to submit a detailed district wise list on the pending works in the construction of Substations. The Committee recommends that meetings should be convened at regular intervals to resolve the problems in drawing transmission lines. 88. The Committee is perturbed to learn that due to defective preparation of DPR the Board has foregone to harness the benefit to avail 90% subsidy provided by Government of India for implementing RGGVY Scheme. The Committee criticises that the Board has taken almost 5 years, i.e., the implementation time of the scheme, to finalize the DPR. By adducing this, the Committee elicits the disingenous and lethargy of the Board in implementing centrally sponsored schemes. 89. The Committee directs the Board to undertake the execution of pending works in the 1st phase of the scheme in northern districts and also to execute the 2nd phase of the scheme throughout the State. 90. The Committee recommends that the officials responsible for defective preparation of DPR and also those responsible for the delay in implementing the schemes should be booked and liability be fixed on them. The Committee wants to be submitted with a detailed report regarding the implementation of RGGVY Scheme in the State.

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			91. The Committee flays the Board's laxity which has resulted in the lapse of Government of India grant to the tune of ₹ 58.08 crore due to the inordinate delay in executing the APDRP Schemes. The Committee observes that the passive attitude of the Board towards centrally sponsored schemes has deprived the targeted rural households of electricity and urges to undertake an exhaustive study for the proper implementation so as to harness cent per cent benefits of centrally sponsored schemes. The Committee directs that it should be furnished with an explanation for the delay and also the action taken against the officers responsible for lapse of grant. 92. The Committee is at pains to know that many schemes of the Board drag on for years due to several reasons. The Committee directs to furnish the latest position of the implementation process of RAPDRP Scheme for further discussion. 93. The Committee recommends that in order to minimise the loss suffered by the Board due to pilferage/loss of energy the Board should gearup the activities of APTS by deploying additional staff and by decreasing the intervals between two consecutive raids. 94. The Committee is surprised to note the paradoxical approach adopted by the Board in collecting dues from its different tariff consumers. The Committee is astound to note that the Board has shown an over enthusiasm in disconnecting the supply of domestic consumer at a single instance of default but turns a blind eye towards large scale industries which commits regular default by non-payment of dues amounting to crores of rupees. The Committee

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			criticises the laxity of the Board in recovering the dues from large scale industries and recommends that disciplinary action should be taken against the officers responsible for the lapse after fixing their liability. The Committee directs that the Board should take urgent steps to recover the maximum outstanding amount from the defaulters within a stipulated time waiving penal interest.
			95. The Committee directs that it should be furnished with a detailed report on various on going Hydroelectric Scheme elucidating the present status of each project, details of manpower employed in each project and the cause of delay that has hindered their completion in time.
			96. The Committee observes that the delay in providing electric connections to consumers is due to non availability of adequate materials at depot level offices. The Committee directs to be furnished with a detail report regarding material depots, material management and the procedures adopted for purchase and issue of material by depot level office.
			97. The Committee opines that about 144 lakh CFLs that were distributed by KSEB through Bachat Lamp Yojana could cause deadly diseases to mankind and one gram of mercury could contaminate a water body of about 25000 Acre. The Committee is shocked to note that when other countries were shifting to the use of LED lamps due to ill effects of mercury lamps KSEB on the contrary was promoting the use of CFLs for the sake of energy saving. The Committee strongly criticizes the Board for not seeing the Environmental hazards caused by thrown out CFLs and directs that the Board should study Environmental factors before implementing such schemes.

APPENDIX II

NOTES FURNISHED BY GOVERNMENT ON THE AUDIT PARAGRAPHS

Sl. No.	Audit Paragraph	Reply furnished by Government
1	2	3
1	3.1-3.22	General Introduction
2	3.23	Connected load of a power system is the sum of the individual connected loads of all the consumers in the system. At any time, the loads actually making a demand on the system simultaneously would come to only a fraction of this total connected load. This is especially so in the case of Kerala where 80% of the consumers are domestic and domestic consumers tend to add up more connected load since they are not billed under two part tariff (In two part tariff, the connected load is also taken into consideration for calculating the electricity charges.). The consumption of domestic consumers as well as the simultaneous maximum demand at a time does not commensurate with the total connected load. The simultaneous maximum demand on the KSEB system is much less than the sum of individual connected loads. At present, the stand by loads of commercial industrial consumers are also considered as connected load which makes the diversity factor even higher [The Diversity factor is the ratio of the total connected (installed) load to the running load]. The LT connected load of KSEB as on 31-3-2011 is 16681.85 MW, whereas the all time maximum demand recorded in the state (even when HT and EHT loads are included) is only 3119 MW. As part of the decentralized planning process, KSEB has added enough number of transformers during the last years which can be seen from the table below: Transformers are being added as part of

1	2	3

developmental works and as voltage improvement works, contributing to the enhanced reach and enhanced quality of electricity.

DETAILS OF INSTALLATION OF DISTRIBUTION TRANSFORMERS

Year	Transformers installed	
	No.	KVA
2008-09	4109	427128
2009-10	5790	604487
2010-11	5800	611224
2011-12	4375	465928

Of the total transformation capacity of 6454.27 MVA in the distribution wing of KSEB, around 2000 MVA was added during the above years.

The distribution capacity of 6454.27 MVA is well sufficient (with enough margin) to meet the demand on the system. The expenses for the installation of a 100 KVA transformer along with the construction of at least a 0.5 km. line would come to around ₹ 4,58,500 at the present rates. Increasing the transformer capacity to 24791.49 MVA from the present 6454.27 MVA would thus involve even at the present rates, an additional expense to the tune of ₹ 8407 crore.

The distribution transformer supplies power to all the power consuming items and remains energized for 24 hours. Even though the transformer, being supply equipment, does not by itself consume any power, the process of transformation involves inherent losses, especially in the core, having to run continuously for all the 24 hours of the day and 365 days of the year. The no load losses (allowable) for a 100 KVA transformer as per the KSEB specification is 260 Watts. Increasing the transformer capacity to 24791.49 MVA from the present 6454.27 MVA would cause daily energy loss to the tune of 1.14 million units.

		The loading pattern of distribution transformers in the state was analysed recently and it is observed that most of the transformers have sufficient spare capacity. Unnecessary addition of transformers, considering the expenses and the energy losses involved, is unwarranted.
3	3.24	As rightly pointed out by Audit, high voltage distribution is an effective method for reducing technical losses, preventing thefts and improving voltage profile. However, the observation that KSERC has accepted the proposal to bring the HT/LT ratio to the level of 1:1 is achievable only in those regions where customers are located in clusters as in the case of North Indian villages or in industrial areas. In such cases the area of distribution will be closer to the 'load centre'. If the Distribution Transformer is placed at the load centre, then the LT line length will be a minimum. Whereas in Kerala the habitation is uniformly spread over the entire State at almost the same density. This necessitates laying large quantum of LT lines to give connections to the customers. Moreover, construction of more HT lines can be taken up only based on cost consideration and practical difficulties in drawing lines. In spite of these difficulties, KSEB has been taking steps to draw more 11 KV lines during the past few years thereby improving the HT/LT ratio. This is evident from the achievement in drawing HT & LT lines during the review periods as given below:

	2006-07	2007-08	2008-09	2009-10	2010-11	Total
HT Lines	1823	1816	3048	3398	3659	13744
LT Lines	8229	8158	7563	7838	6761	38548

Through these measures, the HT/LT ratio could be brought down to a level of 1:5.30 during 2010-11 from the ratio of 1:6.21 during 2006-07. These efforts would be continued in the future to make further improvement in the HT/LT ratio.

In this context, it may also be noted that though drawing more HT lines will reduce losses; this is not the only solution for achieving the objective of loss reduction. KSEB has been taking many other measures such as installation of more distribution transformers, conversion of single phase distribution

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		lines to three phase lines, conductor changing of LT and HT lines with better quality and higher capacity conductors, 100% consumer metering, replacing faulty meters etc. to reduce the losses. All these measures have resulted in KSEB achieving one of the lowest T&D loss levels compared to other utilities in the country.
4	3.25	Distribution network design taken into consideration the Demand Factor and Diversity Factor in system expansion. Demand Factor is the ratio of maximum demand in the system to the total connected load in the system, whereas Diversity Factor is the ratio of the sum of individual maximum demands to the system maximum demand. Concept behind these factors is that all the loads established in the system will not be utilised simultaneously. Hence, capacity need be created only for the expected maximum demand in the system and not for the total connected load. Practice is to adopt a Demand Factor of the order of around 60% and a Diversity Factor of around 1.5, which implies that for a connected load of 100 KVA (say) in the system, the transformation capacity required is only 40 KVA. Audit noted that the ideal ratio of transformation capacity to connected load as 1:1. However, it is noticed that the logic used by the audit in arriving at the ratio is not correct. For finding the transformation capacity, the audit has taken the capacity of 110/11, 66/11 and 33/11 transformers alone, whereas the connected load taken is for the entire LT, HT and EHT consumers. If the entire connected load is considered for calculating the ratio, then the corresponding transformation capacity should include the capacity of distribution transformers also. Otherwise, if the transformation capacity of 110/11, 66/11 and 33/11 transformers alone is considered, then the connected load of LT consumers should not be taken for calculation. The details are given below: Connected load (of all the consumers) as on 31-3-2011-16681 MW. Total step down transformation capacity (220/110/66/33 KV) Transformation capacity of 110/66/11 transformers Transformation capacity of Distribution transformers Transformation capacity of 110/66/33/11 transformers and Distribution transformers. From the above, it is clear that the ratio of transformation capacity to connected load (1:1.39) is near

		to the ideal ratio of 1:1. If the capacity of EHT transformers which directly feed the EHT consumers is also considered in the total transformation capacity, then the ratio will be much better.
5	3.26	Audit has pointed out that as against a planned addition of 166 substations during the review period, only 94 substations could be actually added. It is true that slippages occurred in the scheduled commissioning of substations. There are many reasons attributable to these delays, the major ones being difficulty in land acquisition for substations and obtaining right of way for drawing transmission lines. In a state like Kerala, where the availability of land is limited and the population density is very high, finding land for infrastructure projects like substations is difficult. Even if land for substation is acquired by some means, obtaining right of way for drawing transmission lines is extremely difficult. In almost every case line construction work, resistance from public is experienced by the executing agency. The number of court litigations on land acquisition and related issues is also very high, which delays the progress of work. To avoid the delays in land acquisition, the Board is resorting to negotiated purchase of land with the help of revenue authorities by offering even market value for the acquired land. The substation and associated line construction works were also held up due to the delay in getting forest clearance, PTCC approval, sanction from Railway authorities etc. Even in these difficult circumstances, the Board is taking every possible measure to complete the projects within schedule, as is evident from the commissioning of 94 substations out of the 166 targeted ones, which is a commendable progress.
6	3.27	Para 3.27 to 3.29 (i) *RGGVY Scheme in 6 northern districts* KSE Board originally submitted proposals for an amount of ₹ 438.36 crore for electrification of rural households in all the districts and construction of 7 numbers of 66/11 KV substations and 18 numbers of 33/11 KV substations. Ministry of Power, Government of India communicated approval of these schemes on 31-3-2005 stating that detailed sanction will be issued by M/s Rural Electrification Corporation Limited (REC), the funding agency of Government of India for the scheme.

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		M/s REC sanctioned the scheme for implementation of RGGVY in 7 districts viz. Kasargod, Kannur, Kozhikode, Wayanad, Malappuram, Palakkad and Idukki with an outlay of ₹ 221.75 crore as a first package on 7-6-2005. Tripartite Agreement was executed among Government of Kerala, REC and KSEB on 21-7-2005. As per the terms and conditions of the sanction and tripartite agreement, the first instalment of 30% of the sanctioned amount would be released only if turnkey tenders are awarded. Accordingly turnkey tenders were invited on 27-9-2005 by the Chief Engineer (Distribution–Central) for Idukki district and by the Chief Engineer (Distribution–North) for remaining 6 northern districts. Since no one quoted for the tender, Board requested to REC to give sanction for execution of work departmentally. REC insisted re-tendering and thus the scheme was re-tendered on 25-5-2006 and the firms quoted bids at exorbitant rates (about 85-90% above the estimate rate), which would not be financially viable. The matter was taken up with REC, Government of India, and after high level discussions it was decided to entrust the work for execution of RGGVY in Kasargod, Wayanad, Kannur, Kozhikode, Malappuram and Palakkad districts to M/s NTPC Electricity Supply Company Ltd. (NESCL), and that for Idukki district to the lowest bidder M/s ICSA (India) Ltd., Hyderabad, who quoted only 19.45% above the estimate rate. The execution of work in Idukki district was thus awarded to ICSA on 27-1-2007. A quadripartite agreement was executed among Government of Kerala, KSEB, REC and NESCL on 15th February, 2007 to entrust implementation of the scheme in the 6 northern districts of Kasargod, Kannur, Kozhikode, Wayanad, Malappuram and Palakkad with NESCL. The DPR prepared by NESCL for implementation of the scheme in Palakkad and Wayanad districts were forwarded to REC on 1-1-2008 and REC intimated vide letter No. REC/TVM/RGGVY/ 2008-09/317, dated 2-6-2008 that the same will be considered only in the 2nd Phase of 11th plan.

During the Power Ministers Conference convened by the Union Minister for Power in New Delhi on 23-6-2009, the Hon'ble Minister for Electricity, Kerala expressed strong protest of Government of Kerala on receiving sanction for only one RGGVY Project. Hon'ble Union Minister for Power then agreed to consider the matter favourably. As per direction of REC, NESCL was directed to prepare revised DPR for these 6 districts. But NESCL intimated vide letter dated 30-9-2009 that due to preoccupation with ongoing RGGVY Projects of various States under execution by them, it is not possible to undertake the assignment of preparation of DPRs and intimated their consent to terminate the quadripartite agreement executed. Hence the DPRS were prepared by KSEB and submitted to REC during October 2010, for sanction under 11th plan project. In between the earlier sanction and the preparation of new DPR, some of the works proposed were executed under other schemes. Also as per the guidelines for implementation of the scheme under 11th plan, the cost per village is to be limited to ₹ 4 lakh for normal terrain and ₹ 6 lakh for hilly areas. Sanction was issued by REC on 10-3-2010 for these 6 Projects at a total outlay of ₹ 114.57 crore.

This is the reason for delay in implementation of the scheme in 6 northern districts, even though the scheme was commenced in 2005.

(ii) *RGGVY Scheme in 7 southern districts*

As per the direction from REC the revised DPR for Thiruvananthapuram, Kollam, Pathanamthita, Kottayam, Alappuzha, Ernakulam and Thrissur districts were prepared for an amount of ₹ 83.48 crore and submitted to REC for sanction during September 2010. Ministry of Power, Government of India announced in principle approval for the scheme and as per the direction by the REC officials in the meeting convened by the Hon'ble Minister on 20-6-2011, GPS survey for the location of BPL household are under progress. Final sanction is obtained from REC on 7-9-2012 for executing the work departmentally by KSEB.

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		(iii) *RGGVY Scheme in Idukki districts* KSEB had tried to engage state controlled Kudumbasree units as Franchisees for meter reading for the Idukki scheme as part of Distribution Management, but could not implement as the same was subsequently stayed by the Hon'ble High Court of Kerala on a writ petition filed by a Trade Union. This case was heard on 30-6-2011, and the court passed that in implementation of this decision, the Board shall ensure that the persons employed as Meter Readers do have the qualifications prescribed by the Board. As per the condition of REC sanction, the 2nd instalment would be released only after the deployment of Franchisee set-up. But REC has released 2nd and 3rd instalments for Idukki district without the franchisee set-up. The original proposal for the execution of RGGVY Idukki Scheme is prepared during 2005 within limited time frame. Due to the time limitation, difficult terrain, difficulty in access to the location due to non availability of road etc., 100% accurate survey could not be made. Also many locations are inside the forest area. LT line length proposed was far below the actual required quantum due to REC norm in respect of LT line drawal, i.e., 1 km. LT line/kara. Electrification of 20 karas out of the 81 karas proposed originally was completed at the time of letter of award to the turnkey contractor, M/s ICSA, during January 2007. Partial electrification of many karas was also done in other schemes. Hence before starting the execution of work survey of the balance 61 karas conducted to arrive at the actual quantum to be executed. Quantum of 11 KV line reduced and LT line increased on survey. At that time also quantum of LT line was restricted to 1 km./kara in many areas especially in Peerumade and Kattappana area. Hence the quantum of LT line arrived at resurvey was also not in tune with the actual requirement. For advance payment calculation even though the surveyed quantum of LT line was higher than the tendered quantum, the tendered

		quantum is considered. In the case of HT line and the transformers, surveyed quantum is taken into account. Considering the very low project cost based on this surveyed quantum and to ratify the 19.45% tender excess, as per the direction from REC revised proposals were prepared and submitted for approval. The revised proposals were prepared according to the actual requirement at that time and 39 additional karas were also proposed to compensate the project cost in respect of completed karas. The contractor M/s ICSA requested during May 2009 to intimate actual quantum for execution since 7 karas proposed in the revised scheme require forest clearance for execution, and even after close follow-up consent from forest department was not obtained till May 2009. Also public pressure was there at many locations to include the scatered households omitted while preparing revised proposal. Resurvey was necessitated curing May 2009 due to the above reasons. The resurvey was conducted by excluding the sites requiring forest clearance and including the scattered households omitted in many karas which resulted again in the reduction of 11 KV line and increase in LT line. During the resurvey many lengthy 11 KV line routes were changed to shorter routes through the newly formed roads in the project areas, which too caused the reduction in the length of 11 KV line. Non-synchronization of the quantum of work as per DPR and survey happened due to the above reasons. In the meantime, the contractor demanded rate revision as the time period of completion was over and the cost of materials has increased considerably. The Board approved the revised rate and took the decision that if REC does not allow the revised rate, the same can be met from the normal development funds as it is a social commitment and to get the grant from Government of India.
7	3.28	Refer Para 3.27

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8	3.29	Refer Para 3.27 The work of Idukki district was awarded to M/s ICSA India Ltd., Hyderabad on turnkey basis for ₹ 17.65 crore (19.45% above PAC of ₹ 14.78 crore) Letter of award was issued during January 2007. The entire work was scheduled to be completed within 18 months from LoA. In order to fulfil the objective of the scheme of electrification of all the rural households, the condition of 1 km. LT line/kara was not sufficient for scatered BPL households. A revised cost estimate amounting to ₹ 1995.22 lakh was prepared for extending electricity to all rural households and REC accorded sanction for the same. The quantity in the revised cost estimate was higher than the quantity surveyed earlier and advance paid to the contractor. The contractor demanded market rate for the excess quantity above the quantity for which advance was paid. Board has accorded sanction for the revised rate quoted by M/s ICSA for the execution of excess quantity over and above the quantity for which advance was paid for facilitating electric connection to BPL households. Refer para 3.27 • KSEB had tried to engage state controlled Kudumbasree units as Franchisees for meter reading for the Idukki scheme as part of Distribution Management, but could not be implemented as the same was subsequently stayed by the Hon'ble High Court of Kerala on a writ petition filed by a Trade Union. This case was heard on 30-6-2011, and the court passed that in implementation of this decision, the Board shall ensure that the persons employed as Meter Readers do have the qualifications prescribed by the Board. As per the condition of REC sanction, the 2nd instalment would be released only after the deployment of Franchisee set-up. But REC has released 2nd and 3rd instalments for Idukki district without the franchisee set-up.

9	3.30	Para 3.30 to 3.32 The Accelerated Power Development and Reforms Program (APDRP) under 10th Five Year Plan for 52 schemes with a total out lay of ₹ 858.50 crore has implemented in Kerala from 2003 onwards. GOI has released an amount of ₹ 115.28 cr. as loan and ₹ 139.14 cr. as grant from 2002 to 2009. The amount has fully utilised. The scheme had two components—investment component and incentive component. Initially, 25% of the project cost is released as GOI grant and 25% as GOI loan. Later on the guidelines were revised as 25% GOI grant and the balance 75% has to be arranged by SEB's. The incentive component of the scheme is meant for motivation for up to 50 per cent of the actual cash loss reduction that would be achieved by SEBs/Utilities for the 10th Five Year Plan period. KSEB received ₹ 147.93 crore as incentive. The scheme involves replacement of mechanical meters with static meters, installation of feeder meters, LT capacitors, substation repairs and maintenance, DTR repairs and maintenance, billing centre, data logging, call centre, boarder meter, re-conductoring of LT 11 KV and LT lines, LT lines and installation of new DTRs. As per the guidelines the scheme has to be completed between 24-36 months from the date of sanction. The 52 schemes sanctioned included 3 circle schemes, 46 town schemes and 3 city schemes. KSEB could complete only 38 schemes within the timeframe. The scheme was closed by MOP on 31-3-2009 and 14 schemes (three city and 11 town schemes sanctioned for ₹ 438.88 crore, work done for ₹ 218.96 crore, allowed by MOP for ₹ 206.55 crore) remained incomplete by ₹ 232.32 crore.)

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		Even though the financial target is not achieved in 11 town schemes, all of the major physical parameters were achieved by KSEB. Also the AT&C losses in these towns were reduced substantially. Non-achievement of financial target is due to price variation [price increase (nearly 30-45%) for line materials and reduced price (nearly 40-45%) for meters etc.] during the period of execution of works. Mop has allowed only 15% variation while closing the projects. Due to price variation on materials, KSE Board has to execute excess quantum of work under category A (Metering etc.) in order to achieve the financial target. At the time of scheme closure, even if KSE Board has executed more works under category B (Distribution strengthening works) and met the financial target in 6 towns out of the 11 towns mentioned above, the Ministry of Power has not allowed the amount stating that the excess execution under Category B is not allowable even if the total project cost is not exceeding the target amount. Three city schemes in Thiruvananthapuram, Kochi and Kozhikode for a total outlay of ₹ 373.56 crore were sanctioned on 4-4-2005. Even though the scheme was sanctioned on 4-4-2005, the DPRs were revised four times based on frequent instructions from M/s NTPC. The final revised DPR for ₹ 304 crore were submitted to M/s NTPC on 25-1-2007. As per the direction from Government of India, all the works except transmission, distribution automation and distribution strengthening works were excluded from the scope of the project. The transmission works were executed as per departmental procedure and the distribution automation and strengthening works of Thiruvananthapuram and Kochi city scheme were awarded to M/s IRCON International Ltd., New Delhi and that of Kozhikode City Scheme was awarded to M/s ABB Ltd., Bangalore on turnkey basis. The Agreements were executed on 24-4-2007 for Thiruvananthapuram and Kochi schemes and on 25-4-2007 for Kozhikode scheme. But the Contractor could not complete the works as per the Agreement due to various implementation hurdles aroused during the course of execution. Clearance from various road owning authorities such as NH, KRFB, Corporation etc. for excavation of trenches for laying the UG cable was the major issue, which caused so much delay in project execution, leading to fund loss.

		The following reasons, which are beyond the control of KSE Board caused delay in project completion, leading to fund loss to the tune of ₹ 55.44 cr. (1) Delay in finalization of DPR of the schemes by M/s NTPC (Even though the scheme was sanctioned on 4-4-2005, the final revised DPRS were sanctioned after 25-1-2007 only) (2) Delay in getting clearance from various road owning authorities such as NH, KRFB, Corporation, Municipalities etc. (3) Instruction from Government of India to complete/foreclose all the schemes before 1st March, 2009 (As per guidelines, the scheme has to be completed within 24-36 months from the date of sanction. That means scheme needs to be completed before 31st March 2010 only).
10	3.31	Refer Para 3.30
11	3.32	Energisation approval is pending at the Electrical Division Kasargod and Electrical Division Kanhangad. Regarding Kasargod division, an application for PTCC approval with questionnaire was submitted to Sub Divisional Officer (phone) on 22-10-2005 vide letter No. DB12/MISC/2005-06/ AE/KSD/258 by the Assistant Executive Engineer, Electrical Subdivision, Kasargod and the provisional route approval was received on 8-11-2008 vide letter No. 7-18/HT/1223/2005-06/3 by the General Manager Telecom District, Kannur. The cable laying work is completed on 24-7-2006 and the request for energisation submitted to the BSNL authorities on February 2007. As discussed it is decided to conduct a joint inspection on 16-10-2007 along the cable route and a request is forwarded vide letter No. DB/UG Cable/2008-09/AE/KSD/217 dated 19-10-2008. But the joint inspection was conducted only on 6-11-2008 with BSNL Officials. They suggested digging some pits for inspection to verify the clearances. But the PWD objected the digging as the road work just completed then. On further enquiry, BSNL suggested the dig test pit at eight places for checking the separation between power cable and local telephone cables vide letter No. T-4/PTCC/SDOP KSZ/12 dated at Kasargod 24-1-2009 but the same was kept pending for long. The case is reopened and an application is submitted

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		on 4-10-2011 for the energisation approval. As per the decision taken on the meeting conducted by the District Collector on 29-9-2011 with KSEB and BSNL authorities. The application for PTCC approval with separate sketch for each Section again submitted on 8-12-2011 vide letter No. TS1/11-12/ PTCC/1140. Joint inspection was conducted on 13-12-2011 between SDOP and Assistant Engineer, Electrical Section, Kasargod and the BSNL directed to take sample pits at an interval of 50m. Test pit was digged at JK Residency to Karandakkad, but the PTCC approval not received yet. The matter has already been taken with District Collector. The above work was done under APDRP town scheme. The work was completed and of PTCC approval was requested vide DB 48/07-08/PTCC/KHD/151/11-10-2007 of Assistant Engineer, El.Sn. Kanhangad. But it was rejected by Divisional Manager, Telecom. Based on the letter of Asst. Executive Engineer, Ele. Subdivision, Kanhangad vide ref. (2) DB 48/08-09/KHD/45/6-5-2008, a joint inspection was conducted on 25-7-2008 and decided to dig and check the clearance between UG cable and BSNL cable in the UG cable route. As per the decision, sketch for digging pit near Manzoor Hospital was submitted to the Executive Engineer PWD roads division Kanhangad for sanction. As per their demand an amount of ₹ 491 was remitted on 6-2-2012 for digging the pit. The permission for digging pit has been obtained from the EE PWD Roads division Kasargode. The verification will be carried out soon.
12	3.33	For Part-A projects ₹ 214.40 cr. was sanctioned as loan. As per R-APDRP guidelines, 30% of sanctioned loan amount (₹ 64314 cr.) is released in advance upon signing of MOA with PFC. As the Work awarded to M/s Korea Electric Power Data Network Company Ltd. (KDN) Seoul, on 6-9-2010 was held up due to cancellation of the contract by the Government of Kerala and the matter was under litigation, there in no utilisation of fund for part-A IT implementation.

The Hon'ble High Court of Kerala delivered the judgement on 8-5-2012 on the writ petition No. 311/2011 (filed by M/s KDN) quashing the G.O. (Rt.) No. 281/2010/PD dated, 27-12-2010 and declared that the sanction of the Government was not required for awarding the subject work. The Hon'ble High Court delivered its judgement on 8-5-2012 for the continued execution of the project. Principal Secretary of Power Department, Government of Kerala vide letter No. 86/C1/2011/PD dated 15-6-2012 informed the Board that the judgement has been accepted by the Government. It was also directed to pursue further action for the speedy implementation of the project. Team of officials from M/s KDN came down to KSEB during June 2012 to finalise the pending issues for the execution of Agreement. The discussions in respect of the above are almost completed and agreement can be executed within a couple of week. The project is expected to be initiated during August 2012.

But the installation of system matters is also included in part-A project and an amount of ₹ 1.24 cr. is utilised for the purchase of feeder as well as border meters during 2009-10. During 2010-11 ₹ 4.19 cr. has been spent towards the purchase of DTR meters. The balance fund is ₹ 58.88 cr.

For R-APDRP Part-A SCADA projects, ₹ 83.15 cr. is sanctioned as loan. Out of this ₹ 16.25% (30% of sanctioned loan amount) is released as advance loan during 2011-12. Bids were opened on 15-6-2012 for the selection of SCADA implementation Agency. Hence no fund has been utilised till date.

The Government of India has sanctioned the DPR of Part-A scheme for 43 towns on 26-11-2009. M/s KDN, Korea has been appointed as IT implementing Agency vide Order No. TCM 79/2010-11/ 3797 dated 6-9-2010 for a Contract amount of ₹ 189.94 cr. Later on Government sanction for implementation of R-APDRP Part-A project has been cancelled with a direction to re-tender the project. Implementation was held up due to a writ Petition No. 311/2011 dated 5-1-2011 filed by M/s KDN

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with the Hon'ble High Court of Kerala. The Hon'ble High Court delivered its judgement on 8-5-2012 for the continued execution of the project. Principal Secretary of Power Department, Government of Kerala vide letter No. 86/C1/2011/PD dated 15-6-2012 informed the Board that the judgement has been accepted by the Government. It was also directed to pursue further action for the speedy implementation of the project.

Discussions were held, with the KDN for the speedy execution of the project.

Out of 43 eligible schemes, 42 schemes were sanctioned by Ministry of Power, Government of India for a total project cost of Rs. 872.17 cr. under Part-B. The DPR of Thiruvananthapuram scheme, submitted to PFC, has not yet sanctioned. The date of completion of the project is 3 years from date of sanction. The sanction details are as shown below:

Sl. No.	Schemes sanctioned	Sanctioned Project cost (₹ cr.)	Date of Sanction	Date of completion as per guidelines
1	11 Schemes	93.89	2-6-2010	1-6-2013
2	21 Schemes	267.23	8-12-2010	7-12-2013
3	8 Schemes	142.31	16-8-2010	15-8-2013
4	2 Schemes	368.74	22-2-2010	21-2-2014
	Total	872.17		

Part-B works in all the 40 towns are being executed departmentally. As on 30th June, 2012, works amounting to Rs. 105.26 cr. has been completed. The work in two towns (Kozhikode and Kochi) is decided to execute on turnkey basis.

		Notice inviting tender (NIT) pertaining to Kozhikode and Kochi schemes were floated by the respective Distribution Chief Engineers on 10-5-2012 and 30-5-2012 respectively. The LOA can be issued by 31-10-2012.
13	3.34	Vide G.O. (Ms.) No. 19/2010/PD dated 4-9-2010, Government of Kerala had accorded sanction to K.S.E. Board to entrust the implementation of IT Systems under Part-A of the R-APDRP scheme to M/s Korea Electric Power Data Network Company Ltd. (KDN) Seoul, Korea in consortium with M/s Posdata Company Ltd. in 43 town of Kerala for ₹ 189.94 cr. and in the Non R-APDRP areas for ₹ 50.03 cr. Subsequently, K.S.E. BOARD issued Letter of Award (LOA) vide Order No. TCM. 79/2010-11/3797 dated 6-9-2010 for ₹ 189.94 cr. in place of the Lol. As per the conditions of RFP as mandated by PBS and LOA conditions, the project is to be completed within 18 months from the date of award of LOA. The clause 10 of the LOA also stipulates that the successful bidder has to execute a contract agreement that the successful bidder has to execute a contract agreement within 14 days from the date of receipt of LOA. However, the agreement was not executed as M/s KDN failed to provide pending Manufacturer Authorization Forms (MAFs) as per PFC guidelines within 14 days from the date of LOA. Vide letter No. 4974/C1/10/PD dated 1-10-2010, the principal Secretary to Government, has directed that the G.O. dated 4-9-2010 is to be kept in abeyance until further directions from Government. Subsequently, the Board issued a B.O. by which the Chief Engineer (TC&M) was directed to inform M/s KDN not to proceed further with any more activities related to the implementation of the project until further directions.

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		Government of Kerala has issued G.O. (Rt.) No. 281/2010/PD dated 27-12-2010 cancelling the G.O. which accorded sanction to K.S.E. Board to entrust the implementation of the IT systems under Part-A of the RA-PDRP scheme to M/s KDN Ltd., following the letters by the Hon'ble Chief Minister of Kerala and the Hon'ble Opposition Leader of Kerala expressing reservations over the tender process. The Government has also ordered K.S.E. Board to take necessary steps for re-tendering the project for the implementation of Part-A of RA-PDRP scheme. The Hon'ble High Court of Kerala issued an order to stay the order dated 27-12-2010 issued by the Principal Secretary, Power Department, Government of Kerala for two months on 5-1-2011 based on the Writ Petition No. 311/2011 filed by M/s Korea Electric Power Data Network Company Ltd. The Hon'ble High Court delivered its judgement on 8-5-2012 for the continued execution of the project. Principal Secretary of Power Department, Government of Kerala vide letter No. 86/C1/2011/PD dated 15-6-2012 informed the Board that the judgement has been accepted by the Government. It was also directed to pursue further action for the speedy implementation of the project. A team of officials from M/s KDN came down to KSEB during June 2012 to finalise the pending issues for the execution of Agreement. The discussions in respect of the above are almost completed and agreement can be executed within a couple of week. The project is expected to be initiated during August 2012. The Government of India has sanctioned the DPR of Part-A scheme for 43 towns on 26-11-2009. The K.S.E Board has appointed M/s KDN, Korea as IT Implementing Agency vide Order No. TCM.79/2010-11/3797 dated 6-9-2010. But now the contract has been cancelled by Government of Kerala and is went under litigation. Hence the delay in execution of Part-A work is due to reasons beyond the control of KSE Board. However the K.S.E Board vide letter No. CE (CP)/ R-APDRT(ITIA)/PRJ1/2011-12/10 dated 21-3-2012 of the Chief Engineer (Corporate Planning) has

		already taken up this matter with PFC to obtain extension to the date of completion of Part-A project from Ministry of Power, and a favourable decision is expected.
14	3.35	Refer para 3.33 and 3.34
15	3.36	One of the prime objectives of R-APDRP scheme was to strengthen the distribution system with the focus on reduction of Aggregate Technical and Commercial Losses (AT and C losses) on sustainable basis. The energy loss can be reduced to a great extent by replacement of mechanical/sluggish/faulty meters with tamper proof electronic meters, using Ariel Bunched cables in thickly populated as well as theft prone areas to reduce interruption as well as theft of energy, using conductors with adequate current carrying capacity, by improving the HT/LT ratio, load balancing, etc. Such works were included R-APDRP scheme with the aim to reduce the AT&C loss to 15%.
16	3.37	The objective of R-APDRP scheme is the establishment of baseline data and IT applications for energy accounting/auditing, IT based consumer service centers, consumer indexing, GIS mapping metering of distribution transformers and feeders, reduction of AT&C loss to 15% and introduction of SCADA/DMS in project area with more than 4 lakh population and input energy of the order of 35 MU. 100% metering is not the objective of R-APDRP.
17	3.39	The electricity demand of the State is being projected by the Central Electricity Authority (CEA) also. The actual electricity demand is usually falls with in ± 2.00% of the demand projection. The State receives up to excess rainfall up to 20% over the normal average during the years 2006-07 and 2007-08. Thus has resulted in increase in hydel generation. As against the annual target of 6700 MU, the actual hydel generation during 2006-07 and 2007-08 was 7496 MU and 8327 MU respectively.

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		Since KSEB was able to generate excess hydel generation, there was no necessity for short-term purchase during these years.
18	3.40	The only natural resources of the State are the water resources. Historically, KSEB has been meeting its electricity requirement of the State by establishing hydel projects. However, after the promulgation of the Forest Conservation Act 1980, the Central Government has been not giving clearances for developing major hydel projects. Hence, the electricity requirement of the State is being met by power allocation from Central Generating Stations as well as by procuring power through traders and energy exchanges on short-term basis. At present up to 15 to 20% of the electricity requirement of the State is being met by procuring power through traders/energy exchanges on short-term basis. The Electricity Act-2003 and tariff policy allows all the discoms to meet a part of the electricity requirement from short-term market. All India basis, about 15% of the electricity demand is being transacted through short-term markets. Further, as per the section-63 of the Electricity Act-2003 and the National Tariff policy mandates that, all the power procurement since 5th January 2011 shall be only through competitive bidding route. KSEB has been taking steps to procure power on long-term basis through competitive bidding route.
19	3.42	Faulty distribution transformers received from the field offices will undergo thorough examination at the workshop of TMR Divisions, and a consolidated report regarding their probable causes is analysed every month. The reported causes of failure includes LT line short, poor and low oil level conditions, LT loose connection, low IR value, ageing, lightning, unbalance of load and also overloading of transformers. We are conducting awareness programmes on transformer maintenance for field staff periodically and proper preventive maintenance being carried out to reduce the failure rate of transformers.

		Steps have been taken to prevent overloading by installing sufficient number of transformers and load balancing. In the period 2006-2011, the number of distribution transformers installed was 20376 as against the 6755 transformers installed in the period 2001-2006. As part of preventive maintenance, District level transformer maintenance units (Field Repair Units) are functioning effectively, attending to the preventive maintenance works. This has brought down the failure rate to a considerably low value. The state wide average failure rate of transformers in the year 2011-12 is 1.99 as against the value of 2.07 in the year 2010-11 and the value of 2.7 in the year 2009-10. The overall failure rate is much less than the failure rate allowed as per the Standards of Performance Regulations which is 5% in urban areas and 12% in rural areas.
20	3.43	As per Purchase Plan 2010-11, sanctioned by Board vide B.O. (FB) No. 902/2010 (TCM/XM/PP 2010-11) dated 6-4-2010, the requirement of 100 KVA and 160 KVA transformers are 5000 Nos. and 400 Nos. respectively. Purchase orders were issued for 1000 Nos. of 100 KVA and 150 Nos. of 160 KVA transformers on 28-5-2010. The Tender for procurement of star rated distribution transformers of various rating was invited by KSEB vide tender No. TCM 40/2009-10 due on 30-11-2009. Since the supply of transformers against this tender was expected only after 15th September, 2010, 160 Nos., 100 KVA and 50 Nos. 160 KVA Distribution Transformers were purchased in view of the urgency to complete the works planned in the Voltage Adalath as per the standards of performance prescribed by KSERC, timely effecting service connections involving transformer installations, restoration of supply consequent to failure of transformer and maintenance of voltage levels as per statutory guidelines has to ensure. Any failure

<table>
<tr><th>1</th><th>2</th><th>3</th></tr>
<tr><td></td><td></td><td>may lead to penalisation. Availability of transformers was to be ensured also for carrying out planned works for reducing AT&C loss. If procurements was delayed and stock has been exhausted all works would have come to standstill and targeted works as per Annual Plan Aid Voltage Adalath works would have been delayed.

KSEB is one of the first utilities in the country that procured star rated Distribution Transformers.</td></tr>
<tr><td>21</td><td>3.44</td><td>Board has commissioned various new substations during the said period, which resulted in voltage improvement and reduction in transmission loss and hence additional installation of capacitor banks were not necessitated.</td></tr>
<tr><td>22</td><td>3.45</td><td>Details of Squad Inspections conducted other than APTS during the period 2006-07 up to October- 2012:
<table>
<tr><th>Year</th><th>No. of cases detected</th><th>Amount assessed</th><th>Amount remitted</th></tr>
<tr><td>2006-07</td><td>18094</td><td>608.63</td><td>466.18</td></tr>
<tr><td>2007-08</td><td>24281</td><td>1049.50</td><td>621.02</td></tr>
<tr><td>2008-09</td><td>40612</td><td>3175.60</td><td>1922.51</td></tr>
<tr><td>2009-10</td><td>54688</td><td>2991.66</td><td>1896.18</td></tr>
<tr><td>2010-11</td><td>48686</td><td>1877.87</td><td>1258.85</td></tr>
<tr><td>2011-12</td><td>59616</td><td>2127.73</td><td>1433.04</td></tr>
<tr><td>2012-13 up to</td><td>38732</td><td>1749.63</td><td>1193.37</td></tr>
</table></td></tr>
</table>

23	3.46	In some detected cases, consumers challenged the penal bill before different forums which cause delay in the collection of amounts involved. After the enactment of Electricity act 2003, The Deputy Chief Engineers of Electrical Circles are the appellate authorities in APTS detected cases. APTS units monitor the individual cases and take prompt follow-up action till the realization of full amount. The units also keep in touch with concerned section authorities to effectively monitor the progress of prosecution in case of power theft to ensure their successful completion. Steps are being taken to develop software with the help of IT wing incorporating the inspections made by APTS, assessments, remittances and disposal of appeal if any for easy monitoring and follow-up action. The progress is being monitored in the offices of the Chief Engineers (Distribution) and the Member (Distribution), every month. The litigations before the Board are being disposed off at a good pace. It is to be remembered that the Deputy Chief Engineers of the 23 Electrical Circles are the Appellate Authorities and they are taking care of the disposal of the appeals, in addition to the other duties and functions assigned to them.
24	3.47	In the power system of KSE Board the consumers availing as supply at 66 KV/110 KV/220 KV is categorized at EHT and those availing at 11/22 KV are categorized as HT consumers. The Billing, accounting collection of these categories are done in the office of the Special Officer (Revenue). The consumers are generally divided into HT-Industrial, HT-Commercial and HT Non-industrial, water works, Railway Traction Bulk supply and EHT. Meter reading obtained from field officers by e-mail, fax and by post is entered into the system and bills are generated with due date and last date as envisaged in the regulation. Software has the feature of getting daily report of billing and collection. In the case for meter faulty cases average consumption is taken and billed.

1	2	3
		The total No. of Consumers to be billed for the period 2006-07 is 2152. No. of consumers billed during the above period is 2152 The Total No. of consumers to be billed for the period 2007-08 is 2351 No. of consumers billed during the above period is 2351 The Total No. of consumers to be billed for the period 2008-09 is 2601 No. of consumers billed during the above period is 2601 The Total No. of consumers to be billed for the period 2009-10 is 2894 No. of consumers billed during the above period is 2894 The Total No. of consumers to be billed for the period 2010-11 is 3311 No. of consumers billed during the above period is 3311 As such 100% billing is done. Details included in the annexure attached.
25	3.48	As per Electricity Act 2003, powers for determination of tariff are vested with State Regulatory Commissions. The benchmark for applying incentive/penalty for power factor form a part of tariff. KSEB is granting incentive/charging penalty as per the orders of KSERC.
26	3.49	ACD is evaluated and collected in the months of April, May and June as stipulated in the supply code. Measures have been taken to calculate and demand ACDs in the first quarter of the financial year without fail. Instructions have been given in this regard to field offices vide Circular dated 20-1-2011 appended to the BO No. KSEB/TRAC/S code/noncompliance/R2/10/70/20/1/2011.

27	3.50	KWA, Government consumers such as Medical College Hospitals and other State and Central Public Sector Units have not been remitting the current charges on the due dates, thereby accumulating the arrears. Arrear status during the above period is given in the pro forma attached. The balance outstanding for 2009-10 and 2010-11 are shown as ₹ 1806.02 crore and ₹ 1943.45 crore respectively. As per the annual statement of accounts for 2009-10 and 2010-11 the balance outstanding are only ₹ 1272.96 crore and ₹ 1372.87 crore receivable from Government of Kerala being the balance amount due to KSEB as part of one time settlement of arrear of Water Authority. It may be noted that the percentage of realisation against the current year dues has increased significantly which itself shows efficient collection mechanism implemented by the Board. On analysis of the outstanding receivables from Sale of Power it is seen that the Majority of outstanding is from Government Departments, including water authority. The Board intentionally does not take extreme action in some cases as any disconnection of service connections in the case of water authority and other Government Departments including Hospitals will cause miseries to the common man without any other tangible benefits. Steps are being taken to further improve the collection mechanism. The objections are noted for taking remedial measures. On analyzing and on various discussions, it has come to the notice of the Board about the alarming issue of fictitious and bogus amounts involved in the closing balance of the revenue accounts. Board has issued B.O [FM][G] No. 1231/2011[RAO.M.Cell/Gl/fict.Annex/2011] dated 17-5-2011 to form special committees to make special drive for tackling the issue. The work of special drive is in progress.

<table>
<tr><td>1</td><td>2</td><td>3</td></tr>
<tr><td></td><td></td><td>Details of the state wide collection efficiency is as detailed below:
<table>
<tr><th colspan="2">Average during 2008-09</th><th colspan="2">Average during 2009-10</th><th colspan="2">Average during 2010-11</th><th colspan="2">Average during 2011-12</th></tr>
<tr><th>Inclu. Govt.</th><th>Exclu. Govt.</th><th>Inclu. Govt.</th><th>Exclu. Govt.</th><th>Inclu. Govt.</th><th>Exclu. Govt.</th><th>Inclu. Govt.</th><th>Exclu. Govt.</th></tr>
<tr><td>92.00</td><td>94.40</td><td>92.77</td><td>94.49</td><td>95.44</td><td>97.60</td><td>96.83</td><td>98.86</td></tr>
</table>
The collection efficiency has improved consistently through the years and are very presentable figures of 96.83 (which includes Govt. institutions) and 98.36 (Excluding Govt. institutions) for the year 2011-12. The present collection efficiency (in the month of October 2012) stands at still improved figures of 97.17 (including Govt. institutions) and 99.18 (excluding Govt. Institutions). In case of default in payments, supply to a consumer can be disconnected only after 21 days and any action can be taken only after this. (Refer annexure A)</td></tr>
<tr><td>28</td><td>3.52</td><td>• The statement is not correct. K.S.E.Board had incurred a capital expenditure of ₹ 514.47 crore during the year 2006-07 ₹ 364.87 crore during 2007-08 Rs. 644.50 crore during 2008-09 and ₹ 875.54 crore for 2009-10. As per the provisional accounts the capital expenditure for the year 2010-11 was about 950 crore. It can be seen that, the capital expenditure rise the year 2008-09 is increasing over the previous year. Repayment of loans to the tune of ₹ 1740.30 crore has been ensured during the period 2005-06 to 2007-08 through surplus cash generated and also utilizing the non-cash flow expenditure including Depreciation, RoE, other debits etc. Reduction in actual level of capital expenditure has not been due to curtailment as alleged. The Board had not curtailed any capital expenditure due to non availability of funds.
The statement that most of the generation projects were postponed due to poor planning is not correct.</td></tr>
</table>

Altogether 24 new projects were planned in the 11th plan period 2007-2012 (List attached). Major projects like Athirapilly HEP (163 MW), Pallivasal Extension (60 MW), Thottiyar HEP (40 MW), Mankulam HEP (40 MW) and Achenkovil HEP (30 MW) were included in the 11th Plan period for completion. Of the above major projects, construction works of Pallivasal Extension Scheme and Thottiyar are progressing. The progress of Pallivasal Extension Scheme was now affected due to weak zone in the initial reach of tunnel and is held up in that area. The work of Thottiyar HEP was also delayed due to delay in acquiring private land, which is done by the District Level Purchase Committee headed by District Collector.

The main hurdle for implementing any HE Project is the acquisition of private land from land holders. The Environmental clearance and Forest clearance are to be obtained for Achenkovil HEP.

It may be seen that one of the major project; Athirappilly HEP could not be stated till date, even though the project was tendered in 6/1998. This is due to various environmental clearance issue and court litigation issues, which are beyond the control of KSEB.

Athirappilly HEP: The project was original planned for capacity addition in 11th plan period. Even though the tender were invited in 6/1998 and the Board decided to award the work on 3-1-2001, several Public Interest litigations were filed before the Hon'ble High Court against the implementation of the scheme and the Hon'ble High Court stayed all further proceedings. MoE&F suspended the environmental clearance issues in 1998 and restored it in February 2005. Again, Public Interest Litigations were filed before the Hon'ble High Court challenging the environmental clearance and the Honb'le High Court on 23-3-2006 directed that KSE Board shall apply for environment clearance

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		afresh. Ultimately environmental clearance was again issued by MoEF in July 2006 (3rd time). The work was retendered as directed by the Government on 10/2007. But was quashed by the Hon'ble High court. Two PIL also filed against implementation of Athirappilly Hydro Electric Project. The case is pending in the Hon'ble High Court. The Environmental clearance already granted by MoE&F is now under review by MoE&F. Now, MoE&F had referred the project proposal to WGEEP (Western Ghats Ecology Expert Panel) headed by Dr. Madhav Gadgil. WGEEP has submitted the report to MoE&F which is under scrutiny. MoE&F has informed that environmental clearance of the project will be based on the decision taken by the Ministry in light of WGEEP report. From the above it can be seen that the above major project was delayed not due to the fault of KSEB, but due to various court interventions and clearances issues, which is beyond the control of KSEB. Other projects like Chinnar HEP, Mankulam HEP could not be stated due to land acquisition issues. The Survey at Chinnar sites were held up due to public protest regarding land acquisition issues. Even though the tender for the Civil works of Mankulam HEP was invited on 5-6-2009, the Board decided to cancel the tender and to re-tender the Project, in view of fact that the land required for the project could not be acquired and taken possession. A total extent of 79.94 Ha. of land is required for the Mankulam Project, which includes 52.87 Ha. of private land of 252 land holders. The number of holdings is much larger compared to that of other project. Even though several purchase committee meeting headed by District Collector were held, the land holders did not agree with the land value offered by the committee. Now, a new committee has been constituted by the Government to arrive the land value. **Present Status** Two small HE Projects, Poozhithode and Ranni-Perunad (Maniyar Tailrace) were completed and commissioned in the 11th plan period. Peechi SHEP is scheduled for commissioning in January 2013. Construction works of 8 other projects are progressing. Balance work of Adyanpara has been awarded and is expected to commence soon. The above ongoing projects were also got delayed initially mainly

due to delay in acquiring land. The hurdles of land acquisition of these projects were almost over, and the work is going on in full swing. These projects are scheduled for completion with in the next two years.

In addition to the above, 2 projects which were not envisaged in the 11th plan viz, Anakkayam and Poringalkuthu SHEP were awarded, but could not be stated due to clearance issues.

Other projects like Kakkadampoyil I & II Chaliyar Cluster Projects like Anakkampoil, Kandappanchal, Pathamkayam were handedover to the consortium of PSUs (KMML, TCC, MCL, SILK&SCL) as decided in the meeting held on 17-12-2008 attended by the Minister of Industries and Minister of Power. Later, since no progress was achieved on the above projects by the above consortium, the Board requested the Government to return the schemes and the Government vide letter dated 21-12-2009 nformed KSEB that KSEB is allowed to go ahead with the above projects by its own. Thereafter, the investigation surveys of the above projects were stated and DPRs are under preparation. Present position of 10th plan spill over projects is given below:

Sl. No.	Name of scheme	District	Capacity	Actual/ Expected date of Commissioning	Remarks
1	Kuttiyadi Additional Extension Scheme	Kozhikode	100 MW/223 Mu	19-6-2010	Commissioned
2	Neriyamangalam Extension	Idukki	25 MW/58.27 Mu	25-5-2008	Commissioned
3	Kuttiyadi Tailrace	Kozhikode	3.75 MW/17.10 Mu	9-11-2008 26-10-2009	Commissioned Units I &II Unit III

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		Present Status of Hydro Electric Projects benefited/to be benefited during 11th plan (2007-2012) is given below :

Sl. No.	Name of Scheme	District	Capacity	Actual/ Expected date of Commissioning	Remarks
1	Poozhithode SHEP	Kozhikode	4.8 MW/10.97 Mu	19-6-2011 20-6-2011	Commissioned
2	Ranni-Perunad SHEP	Pathanamthitta	4 MW/16.73 Mu	16-2-2012	Commissioned
3	Pallivasal Extension Scheme	Idukki	60 MW/153.9 Mu	12/2013	Work in progress
4	Thottiyar Hep	Idukki	40 MW/99 Mu	8/2014	Work in progress
5	Sengulam Augmentation	Idukki	85 Mu	12/2013	Work in progress
6	Vilangad SHEP	Kozhikode	7.5 MW/22.63 Mu	6/2013	Work in progress
7	Chathankottunada II	Kozhikode	6 MW/14.76 Mu	12/2014	Work in progress
8	Barapole SHEP	Kannur	15 MW/36 Mu	12/2013	Work in progress
9	Perumthenaruvi SHEP	Pathanamthitta	6 MW/25.77 Mu	3/2014	Work in progress

10	Chimony	Thrissur	2.5 MW/6.7 Mu	2/2014	Work in progress
11	Peechi	Thrissur	1.25 MW/3.21Mu	1/2013	Work in progress
12	Sengulam Tailrace (Vellathooval SHEP)	Idukki	3.6 MW/12.17 Mu	2/2015	Work in progress
13	Adyanpara	Malappuram	3 MW/9.01 Mu	19-6-2010	Balance work awarded.
14	Passukadavu SHEP	Kozhikode			Project cost is high. Board is exploring cost effective methods to make the project financially viable
15	Mankulam	Idukki	40 MW/82 Mu		Work not started since land acquisition not completed
16	Athirappilly	Thrissur	163 MW/255 Mu		Environmental clearance issues.

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17	Achenkovil	Kollam	30 MW		Environmental clearance to be obtained
18	Chinnar	Idukki	24 MW/76 Mu		Land acquisition in progress
19	Marmala	Kottayam	4.5 MW		DPR approved
20	Pathamkayam	Kozhikode	4 MW		DPR preparation in progress
21	Kandappanchal	Kozhikode	6 MW		DPR preparation in progress
22	Anakkampoil	Kozhikode	7.5 MW		DPR preparation in progress
23	Kakkadampoil I	Kozhikode	21 MW		DPR preparation in progress
24	Kakkadampoil II	Kozhikode	5 MW		DPR preparation in progress

As per the guidelines of Central Electricity Authority (CEA) meters installed in the consumer premises should have facility to measure, record and display Time of use of Energy depending upon tariff requirement for various categories of consumers. Also as per CBIP-Manual-88, Cl.'6' Special requirement for static multifunctional, multiparameter meters shall have facility for TDD tariff.

Purchase Committee held on 14-8-2007 decided to make specification changes including switching over to LCD meters after conducting a detailed discussion with Member (Distribution) and Technical core group. After a through examination of remarks of Technical core group of KSEB, Purchase Committee held on 1-4-2008 decided to invite tender for 1.5 lakh Three Phase Static meters with LCD and TOD facility and with a stipulation in the specification that there shall be option for upgrading to provide facility for downloading through optical port of CMRI on demand.

In the static meters (cyclometer type), which were purchased earlier in the Board, mechanical parts (counter and stepper motors) have wear and tear and hence become faulty within the short period. The LCD meters are less prone to failure under actual field condition of transportation and installation due to the rugged nature in comparison to counter type meter which require utmost care in handling. The failure rate of these meters is much lesser comparing to the previous generation meters. Further these are technologically advanced meters having many tamper protection features and load survey capability.

In the last tender for three phase cyclometer type meters only one firm had participated, since most of the suppliers are manufacturing LCD meters only, because most of the utilities have already started using LCD meters with TOD and Automatic Meter Reading (AMR). These meters have a design life of 10 years and guarantee for 5 years. The LCD Meters with TOD facility were procured considering the tamper protection features, load survey capability and with facility for implementing new tariff and to reduce the peak hour energy demand of the State.

The advanced technical features of LCD meters over electromechanical and static counter type meters are mentioned below :

(1) It can record the number of tamper events with date and time, and the present status of abnormality. It can record the nature of tamper events namely cover opening, missing phase, missing neutral and its restoration with date and time, total number and duration of each occurance. So, loss if any occured due to by passing of current coil, Current reversal in current coil, neutral missing and phase missing condition, back billing can be done as per data recorded in the meter and loss sustained to the Board can be realized.

(2) It records Maximum Demand in KW, Power Factor, Active Power, Reactice Power, Instantaneous Current and Voltage etc. And time and date.

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		(3) It records 6 months reading kWh and MD in kW and billing history and will be available through communication port. (4) Meter has load survey capability that the meter is capable of storing in its non-volatile memory register, parameters for load demand survey for a minimum period of previous 60 days. (5) In the procurement of LCD, TOD meters only faulty replacement is allowed during the guarantee period. This is very much advantages than faulty repair to the utility. Since the LCD meters have optical communication port, the meter readings can be accessed remotely by providing a modem in the meters. The facility is also required for Automatic Meter Reading Process (Accessing meter reading remotely). One of the very important point to be noted is that, there is no additional cost for providing TOD facility in the Static LCD meters, because no additional Hardware part is required for providing TOD facility and, it is provided through Software modification only. So it cannot be said that extra expenditure was incurred for procuring costly meters as remarked in the audit note. The cost of LCD meters are higher than the mechanical or static meters, because LCD meters are technologically superior and has so many additional features for tamper protection and has load survey facilities, hence these meters are very much cost effective. The additional cost involved in procuring LCD meters would be compensated by the revenue generated by the accuracy and security features of LCD meters. In order to balance the peak and off peak consumption in Kerala, the proposal to introduce TOD Tariff was under active consideration of KSEB and KSERC. On 17th April, 2009, the Kerala State Electricity Regulatory Commission having considered the petition on ARR and ERC for 2009-10 (TP 60 of 2008) filed by the Kerala State Electricity Board dated 29-12-2008, issued a directive (Item No. 9 of the Chapter No. 8 "Directives") to the KSE Board that no proposal for introducing TOD tariff for LT Industrial consumers shall be submitted considering the revenue implication and reducing the peak demand. On 24th July, 2009, KSE Board has filed a petition on 'Proposals for rationalising the existing tariff structure' before the Kerala State Electricity Regulatory Commission. Item No. 47 of the petition (VI)

'Proposal for introducing TOD Tariff for LT Industrial consumers' it is stated that, at present KSEB has a total of 1.25 lakh of LT Industrial consumers in the grid. In item No. 48 it was stated that the majority of LT industrial consumers are consuming electricity during peak hours also. Hence, KSEB has been exploring the possibility of shifting the peak consumption of the industries either day time or late night off peak hours by offering incentives etc. Present tariff does not offer any incentive for LT industrial consumers for reducing the consumption during peak hours or increasing the consumption during off peak hours. So KSEB propose to introduce TOD pricing scheme for LT industrial consumers to encourage them to switch over at least part of their peak demand to other part of the day. Also stated that TOD billing system shall be beneficial to consumers, where they can regulate their energy consumption to encash the TOD differential pricing.

Quality and accurate meters are vey much essential for the utility to have a stable revenue status and collect the right and eligible cost of energy supplied. Also, periodical technological revisions is necessary in all our procurements for regular updates and to introduce modern facilities in all fields. The cost involved for such upgradation in technology is not extra expenditure. It is an essentiality for implementing modern techniques and implementation of new patterns in tariff structure such as TOD which will ultimately cause revenue gain by means of scaled down usage of power and spread over of time of usage with respect to the tariff. Introduction of TOD meters to implement TOD tariff can be done only in a phased manner in LT level.

KSEB has procured the TOD meters considering the tamper protection features, load survey capability and with facility for implementing new tariff and to reduce the peak hour energy demand of the State. These LCD meters have many advanced technical features than electromechanical and static counter type meters and DGS&D rate approved meters.

Further, as per the directives of KSERC, KSE Board has decided to implement ToD tariff for domestic consumers having consumption above 500 units per month and industrial consumers having connected load above 20 KW w.e.f.1-1-2013. The three phase meters having ToD facility already installed in the premises of above category of consumers can be used for implementing ToD tariff without arranging procurement of three phase ToD meters.

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		Hence it cannot be said that extra expenditure was incurred for procuring costly meters as remarked in the audit paras but for procuring quality meters with extra tamper proof facility to reduce the revenue loss of KSEB. The agreement does not stipulate that KSE Board would be associated with sale of Carbon Credit. The BLY programme is under the process of validation by different agencies of UNFCCC for awarding Carbon Credit. Further details regarding the status of obtaining CDM benefit is available with Energy Management Centre (EMC); who is the implementing agency of the scheme.
29	3.53	As per the section 65 of the Electricity Act, 2003. Government has to provide subsidy only for meeting the revenue shortfall on account of the reduction on the tariff offered by the State Government over the tariff approved by the State Electricity Regulatory Commission. During the year 2009-10, the State Government has agreed to offer ₹ 44.97 crore for avoiding tariff increase for the domestic consumers with monthly consumption above 300 units. For the year 2010-11, the State Government has ordered to except domestic consumers with monthly consumption up to 120 units from payment of fuel surcharge and offered to provide ₹ 54.00 crore as cash subsidy for meeting the revenue shortfall. Thus the total subsidy commitment by the State Government for the years 2009-11 was ₹ 99.97 crore only and the State Government has released the same during the said period itself. The State Government has not offered ₹ 670.55 crore as stated in the performance report and hence the same may be deleted.

30	3.54	As per the section 62, 64 and 86 of the Electricity Act-2003, the authority for tariff determination is vested with the State Electricity Regulatory Commission. Further, as per the section-45 of the Electricity Act-2003, KSEB as the distribution licensee of the State can levy tariff only at the rates and terms and conditions approved by the State Commission. Further para 8.1(7) of the National Tariff Policy empowers the State Commission to initiate *suomoto* tariff revision in the event of the State Discoms fails to file tariff proposals. Further, as per the section 61 of the Electricity Act-2003 and paragraph 8.3 of the National Tariff Policy, the State Commission is empowered to specify the road map for reducing the subsidy within the State. However, the State Commission yet to prepare and finalise the road map on cross subsidy burden of the State. Further, the State Commission has not made any full-fledged tariff revision during the period from October-2002 to June-2012. As per the section 65 of the Electricity Act-2003, the subsidy commitment arises only if the State Government offers reduction in tariff on the same approved by the State Commission. Since the State Commission itself has not revised the tariff, there was no issue of providing subsidy commitment by the State Government. Further, considering the socio-economic reasons it is not practicable to reduce the subsidy burden of the subsidised categories like domestic and commercial categories all in a sudden. Further, none of the State Commission has attempted to reduce the subsidy and cross subsidy with in + 20% of the average cost of supply as prescribed in the National Tariff Policy. Further, the National Tariff Policy is only one among the 'nine' guiding factors to be considered by the regulatory commissions while specifying the 'terms and conditions for determination of tariff'.

<table>
<tr><th>1</th><th>2</th><th>3</th></tr>
<tr><td>31</td><td>3.55</td><td>There is no mandatory provision in the Electricity Act-2003 that, the State Commissions has to bind by the National Tariff Policy while determining the tariff.</td></tr>
<tr><td>32</td><td>3.56</td><td>As per the sections 62, 64 and 86 of the Electricity Act-2003, the authority of tariff determination is vested with the State Electricity Regulatory Commission. Further, the State Commission has been following its own regulations and rules for approving the Aggregate Revenue Requirements and also for approving the tariff.

Further, the regulatory accounts approved by the State Commission are entirely different and considerably less than same as per the C&AG accounts. Further, the State Commission is approving the tariff only as per the regulatory accounts.

The net revenue gap during the period from 2003-04 to 2010-11 as per the regulatory accounts was only ₹ 165.35 crore as detailed below :
<table>
<tr><th rowspan="2">Year</th><th>Revenue gap as per C&AG audited accounts</th><th>Revenue gap approved by KSERC in the process of truing up</th></tr>
<tr><th>(Rs. Cr.)</th><th>(Rs. Cr.)</th></tr>
<tr><td>2003-04</td><td>1007.43</td><td>374.86</td></tr>
<tr><td>2004-05</td><td>342.78</td><td>281.13</td></tr>
<tr><td>2005-06</td><td>144.59</td><td>-181.35</td></tr>
<tr><td>2006-07</td><td>142.23</td><td>-868.13</td></tr>
<tr><td>2007-08</td><td>91.07</td><td>-1152.68</td></tr>
<tr><td>2008-09</td><td>749.15</td><td>605.80</td></tr>
</table>
</td></tr>
</table>

		2009-10	1227.51	639.43
		2010-11	1283.79	466.29
		Total	4988.55	165.35
		The revenue gap as per the regulatory accounts is considerably less.		
33	3.57	KSEB has been filing the ARR & ERC since the year 2003-04. With the approval of the State Commission, KSEB has been availing the grace period of up to one month for filing the ARR & ERC petitions. There was no mandatory provision in the Electricity Act-2003, that the tariff petition shall be filed along with the ARRC&ERC petitions. It is further submitted that, the revenue gap approved by the State Commission in the orders on ARR&ERC was usually much less than the same projected by KSEB. Further, as per the para 8.1(7) of the National Tariff Policy, the State Commission can initiate *suomoto* tariff revision if the Distribution utility fails to file the tariff revision. Further, Hon'ble APTEL vide its judgement dated 11-11-2011 has issued directions to all the State Commissions to initiate *suomotu* tariff revision if the Discos not filed the tariff petition with in one month of the time stipulated for filing the tariff petition. Further, KSEB is owned by the State Government. Though the Electricity Act-2003 does not mandate prior consultation of the Government prior to filing the tariff petition, the policies and priorities of the Government is a deciding factor in tariff fixation including the issues on reduction on subsidy/cross subsidy enjoyed by the State Government. Further, as detailed earlier, as per the regulatory accounts approved by the State Commission, there was no considerable revenue gap for initiating a full-fledged tariff petition since the year 2010-11. However,		

1	2	3
		KSEB has proposed tariff petition since the year 2007-08 and 2009-10, however the State Commission has declined the proposals of KSEB citing the reasons that, as per the regulatory accounts there was considerable surplus available with KSEB.
34	3.59	The Energy Management Centre (EMC) was entrusted as implementing agency for the implementation of Bachat Lamp Yojana. Accordingly the EMC issued the Purchase Order for the supply of CFLs vides P.O. No. EMC/BLY/01/2010 dated 1-2-2010 for Southern and Central region and vide P.O. No. EMC/BLY/01/2010 dated 28-4-2010 for Northern region. In the P.O., the delivery schedule was also specified. The quantity of CFLs distributed under each circle and the balance quantity was also reported to EMC by K.S.E.Board. The delivery schedule of the CFLs was fixed by EMC with the intention of distributing the CFLs within a short period. From the balance CFLs available after implementing the BLY scheme, 66,114 Nos. have been utilised in KSEB offices for replacing the ICLs in use, 187413 Nos. for replacing the faulty CFLs of consumers distributed under BLY scheme. In the meeting chaired by the Hon'ble Minister for power on 16-1-2012, it was decided to utilise the balance quantity of 829205 CFLs in Government Offices through EMC. Accordingly EMC was informed vide letter dated 8-5-2012 the balance CFLs available with KSEB. They have not lifted the CFLs till date.
35	3.62	KSEB has implemented the KSERC (Standards of performance regulations) 2006 since the year 2010-11. The time limit for rendering the services to the consumers and the compensation payable for not adhering to the same was displayed in all distribution section offices of the Board. Further, as per the directions issued by the State Commission, KSEB has already established Consumer Grievance Redressal Forums (CGRF) in three regions of the State at Kottarakkara in the Southern region, at Ernakulam in the Central region and at Kozhikode in the Northern region. Further, the State Commission has established Electricity Ombudsman at Ernakulam for addressing the complaints if the consumers are not satisfied with the decision of the CGRF. KSEB has been furnishing the quarterly report on the complaince of the Standards of performance regulation since the year 2010-11.

ANNEXURE (I)

Para 3.47

Category	2006-07					
	No. of consumers	Consumption (kWh)	Opening Balance	Demand	Collection	Closing Balance
HT-III Irrigation	47	9306312	936562	44207834	52489036	-7344640
HT-I KWA	147	167427818	2179499546	730399751	9792059	2900107238
Railway Traction	6	69301904	..	241543633	241276617	267016
Bulk Supply	31	332929515	177830255	972887174	1205954806	-55237377
HT I, II &IV	1886	1825299230	2370154580	8238743324	8007885093	2601012811
EHT I&II	35	1056834688	5283082649	3938005518	3682445525	5538642642
APTS/ Theft	..	..	14601702	276478	1722561	13155619
Total	2152	3461099467	10026105294	14166063712	13201565697	1099060339

ANNEXURE (II) **Para 3.47**

Category	2007-08					
	No. of consumers	Consumption (kWh)	Opening Balance	Demand	Collection	Closing Balance
HT-III Irrigation	48	9206163	-7344640	43730218	47521892	-11136314
HT-I KWA	149	174171756	2900107238	741160681	18220736	3623047183
Railway Traction	7	107129055	267016	392292396	389452976	3106436
Bulk Supply	32	365021140	-55237377	1116244400	1099062420	-38055397
HT I, II &IV	2080	1911899142	2601012811	8460836459	8341224042	2720625228
EHT I&II	35	1037186993	5538642642	3878871004	3714729003	5702784643
APTS/ Theft	..	..	13155619	968456	13511268	612807
Total	2351	3604614249	10990603309	14634103614	13623722337	12000984586

ANNEXURE (III) **Para 3.47**

Category	2008-09					
	No. of consumers	Consumption (kWh)	Opening Balance	Demand	Collection	Closing Balance
HT-III Irrigation	48	8693946	-11136314	61682498	112584492	-62038308
HT-I KWA	149	181349511	3623047183	914260695	3120335586	1416972292
Railway Traction	8	139745268	3106436	676029224	660661792	18473868
Bulk Supply	31	361992947	-38055397	1451197919	1391855204	21287318
HT I, II &IV	2328	1842661620	2720625228	9713130724	9497529236	2936226716
EHT I&II	37	966025771	5702784643	4102098409	4101843741	5703039311
APTS/ Theft	..	..	612807	..	8226635	-7613828
Total	2601	3500469063	12000984586	16918399469	18893036686	10026347369

ANNEXURE (IV)

Para 3.47

Category	2009-10					
	No. of consumers	Consumption (kWh)	Opening Balance	Demand	Collection	Closing Balance
HT-III Irrigation	48	7967918	-62038308	46017774	48963008	-64983542
HT-I KWA	152	185036374	1416972292	778277774	680042692	1515207374
Railway Traction	8	163402516	18473868	656489497	653206972	21756393
Bulk Supply	28	372221697	21287318	1433838926	1360142217	94984027
HT I, II &IV	2612	2042297804	2936226716	9629796343	9717915432	2848107627
EHT I&II	46	1116318840	5703039311	4210117064	3956024681	5957131694
APTS/ Theft	..	..	-7613828	..	5774648	-13383476
Total	2894	3887245149	10026347369	16754537378	16422069650	10358815097

ANNEXURE (V)

Para 3.47

Category	2010-11					
	No. of consumers	Consumption (kWh)	Opening Balance	Demand	Collection	Closing Balance
HT-III Irrigation	50	7217084	-64983542	40944613	51573050	-75611979
HT-I KWA	168	196033273	1515207374	890620784	127643821	2278184337
Railway Traction	8	158491275	21756393	664914567	561077527	125593433
Bulk Supply	39	446161829	94984027	1641233978	1617818682	118399323
HT I, II &IV	3007	2173235362	2848107627	10314256043	10371929803	2790433867
EHT I&II	39	1267347237	5957131694	4510170069	4511746675	5955555088
APTS/ Theft	..	..	-13383476	5135818	2254900	-10507558
Total	3311	4248486060	10358815097	18067275872	17244044458	11182046511

ABSTRACT OF ARREARS AS ON 30-9-2012 **3.50 Annexure-A**

Sl. No.	Name of Department	LT (without Surcharge)	HT/EHT (without Surcharge)	Total in Crores
1	State Government Departments	89.60	5.68	95.27
2	State Public Sector Undertakings and Co-operative Sector	129.28	361.48	490.75
3	Local Bodies	4.87	0.00	4.87
A	Total under State Government	223.74	367.16	590.90
4	Central Government Departments	0.53	0.09	0.62
5	Central Public Sector Undertakings	0.74	15.99	16.73
6	Interstate Energy	NIL	4.54	4.54
7	Private Sector	100.28	471.63	571.90
B	Total under Central Government Interstate and Private	101.55	492.25	593.79
C	Licences	0.00	21.61	21.61
	Grand Total (A+B+C)	325.29	881.01	1206.29