FOURTEENTH KERALA LEGISLATIVE ASSEMBLY

COMMITTEE
ON
PUBLIC UNDERTAKINGS
(2019-2021)

NINETY EIGHTH REPORT

(Presented on 13th November, 2019)

SECRETARIAT OF THE KERALA LEGISLATURE
THIRUVANANTHAPURAM
2019

FOURTEENTH KERALA LEGISLATIVE ASSEMBLY

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On

KERALA STATE ELECTRICITY BOARD LIMITED

(Based on the Report of the Comptroller and Auditor General of India for the year ended 31st March, 2013)

1407/2019.

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INTRODUCTION

I, the Chairman, Committee on Public Undertakings (2019-2021) having been authorised by the Committee to present the Report on its behalf, present this Ninety Eighth Report on Kerala State Electricity Board Limited based on the Report of the Comptroller and Auditor General of India for the year ended 31st March, 2013 relating to the Public Sector Undertakings of the State of Kerala.

The aforesaid Report of the Comptroller and Auditor General of India for the year ended 31st March 2013, was laid on the Table of the House on 10-6-2014. 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 2016-2019 at its meeting held on 14-6-2017.

This Report was considered and approved by the Committee (2019-2021) at its meeting held on 17-7-2019.

The Committee places on record its appreciation for the assistance rendered to it by the Accountant General (Audit), Kerala in the examination of the Audit paragraphs included in this Report.

The Committee wishes to express its thanks to the officials of the Power Department of the Government Secretariat and Kerala State Electricity Board Limited for placing the materials and information solicited in connection with the examination of the subject. The Committee also wishes to thank in particular the Secretaries to Government - Power and Finance Departments and the officials of the Kerala State Electricity Board Limited who appeared for evidence and assisted the Committee by placing their views before it.

C. DIVAKARAN,

Thiruvananthapuram,
17th July, 2019.

Chairman,
Committee on Public Undertakings.

REPORT

On

KERALA STATE ELECTRICITY BOARD LIMITED

AUDIT PARAGRAPH 3.1.1 to 3.1.7.12 (2012-13)

Introduction

3.1.1 Power scenario in Kerala

The consumption of domestic sector has been increasing and now it accounts for approximately 49 *per cent* of total energy consumed in the State. As a consequence, State energy demand corresponds to the domestic consumption pattern and the demand during peak hours (6 pm – 10pm) in the State is about 50 *per cent* higher than that during off-peak hours, forcing Kerala State Electricity Board (KSEB) to purchase power. KSEB meets power requirement of the State through generation and purchase in the following manner.

- Through Hydel Power Plants which contribute 70 *per cent* of the total Installed Capacity;
- through power allocation from CGS as decided by the Ministry of Power (MoP) in advance;
- purchase from Independent Power Producers (IPPs) set up in the State with whom KSEB has entered into long term Power Purchase Agreements (PPAs) and
- Emergency purchase from Power Exchange (Indian Energy Exchange (IEX) and Power Exchange India Limited (PXIL) and various Traders.

KSEB purchased 56,529 Million Units (MU)[1] at a cost of ₹ 22,098 crore during the five year period up to 2012-13 through long term agreements, Letters of Intent (LoI) and on contingency basis. There were 56 long term agreements of which 16 pertained to CGS, 37 pertained to small IPPs and three pertained to major IPPs and detailed in **Annexure 11**. In addition, KSEB purchased power on short term basis from various traders through issue of LoIs and from power exchanges on Day Ahead/contingency basis.

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[1] As per Annual Accounts up to 2012-13 (Accounts for 2012-13 are Provisional)

Power Purchase Management

3.1.2 KSEB proposes its annual demand forecast, Hydel/Thermal Generation plan and Power Purchase plan in the form of Aggregate Revenue Requirement and Expected Revenue from Charges (ARR) submitted to Kerala State Electricity Regulatory Commission (KSERC) for approval. After obtaining approval for ARR, Chief Engineer (Commercial & Tariff) (CE/C&T) manages purchase for long, medium and short term. Purchase in the nature of contingencies, day ahead and purchase from Power Exchanges to meet the daily deficits are managed by Chief Engineer (Transmission – System Operation) (CE/T-SO). The power position scenario is reviewed on a monthly basis by the Power Position Committee chaired by the Member (Transmission and Generation Operations). In addition, Core Committee constituted (15 January 2010) under the supervision of CE/(C&T) also reviews the power position of the State on weekly basis and provides creative suggestions on power purchase activities.

Scope of Audit

3.1.3 The Performance Audit conducted during May-July 2013 covers the power purchase transactions of KSEB during April 2008 to March 2013. The records of KSEB relating to planning of purchase of power and payments were examined with a view to analyse the economy, efficiency and effectiveness of power purchase in KSEB. All the long term agreements and LoIs and Day Ahead purchase were also examined in audit.

Audit objectives

3.1.4 The objectives of the performance audit were to ascertain whether:

- KSEB Planned the purchase of power in accordance with forecast/demand/availability
- KSEB complied with the legal requirements, procedures and policy guidelines laid down by the Government, Central Electricity Regulatory Commission (CERC)/Kerala State Electricity Regulatory Commission (KSERC) regarding purchase of power.

- The PPAs entered into by KSEB were in line with the established guidelines;
- the provisions in the PPAs were in the interest of KSEB;
- the PPAs were operationalised as per its terms and conditions and
- there were adequate internal controls to monitor the activities relating to purchase of power.

Audit Criteria

3.1.5 The audit criteria flowing from the following records were adopted:

- The provision of the Electricity Act, 2003;
- National Electricity Policy;
- Electric Power Survey Report of Central Electricity Authority (CEA)
- Policy documents of the State Government on IPP projects;
- Regulations and Guidelines issued by MoP, CEA, CERC, KSERC, Southern Region Load Despatch Centre (SRLDC) relating to purchase and scheduling of power;
- 11th and 12th Five Year Plans,Guidelines/Orders issued by KSEB and the decisions taken by KSEB and
- Terms and Conditions in the Tender documents and Agreements.

Audit Methodology

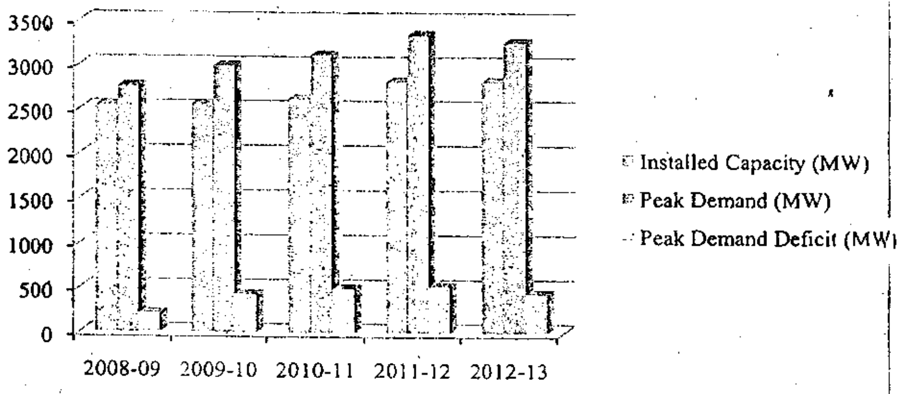
3.1.6 The methodology adopted for attaining audit objectives with reference to audit criteria consisted of explaining audit objectives to top management, scrutiny of records at Head Office and selected units, interaction with the auditee personnel, analysis of data with reference to audit criteria, raising of audit queries, discussion of audit findings with the Management and issue of Draft Performance Audit Report to KSEB/Government for comments. The entry conference to explain the audit objectives was held in May 2013. Subsequently, audit findings were reported to KSEB and the State Government (October 2013) and discussed in an Exit Conference (November 2013). The Exit Conference was attended by representatives of KSEB/State Government. KSEB replied (November 2013) to audit findings and reply from Government is awaited (January 2014). The replies have been considered while finalising this Performance Audit Report.

Audit Findings

3.1.7.1 Peak demand, Generation capacity and purchase of power

Peak Demand, Installed Generation Capacity and Peak Deficit of Power in the State is depicted in the following chart:

Chart 3.1.1: Details of Installed Capacity, Demand and Deficit



(Source: Annual Accounts of KSEB)

Own generation of KSEB from Hydel and Thermal Plants increased from 6440 MU in 2008-09 to 8290 MU in 2011-12 and decreased to 5328 MU in 2012-13. The purchase was mainly to meet the peak demand deficit. There was peak demand deficit throughout the period ranging from 222 to 528 MW and KSEB resorted to purchase of power from various sources under short/medium/long term basis. Purchase of power from various sources such as CGS, IPPs, Power Exchanges, Unscheduled Interchange (UI) and Traders increased from 16,069 MU in 2008-09 to 20,245 MU in 2012-13. The following factors also led to purchase:

- Insufficient installed capacity to meet peak demand and failure to commission new projects for capacity addition and envisaged in five-year plans.
- Low availability of water at Hydel Stations due to poor monsoons.
- The general strategy followed by KSEB for optimisation of generation and power purchase, as disclosed in the ARR 2011-12, was to conserve maximum water in the reservoir during monsoon season by limiting generation and purchasing power from outside sources at cheaper rate.
- Failure of CGSs to supply power as agreed upon.
- Transmission and Distribution loss in excess of norms fixed by KSERC.

Planning

3.1.7.2 Long term plans to meet power demand deficit

Based on the approach papers released by the Planning Commission of India, national objectives in Power Sector and State Planning Board, KSEB prepared its approach paper for 11th Plan Period 2007-2012. It consisted of three areas-Generation, Transmission and Distribution. Generation Plan was evolved based on the objective to provide electricity to all at an affordable price and to meet the projected demand during the 11th Plan period by developing Hydro Electric Projects in the State and ensuring share from upcoming Inter-State Projects.

The Demand Projection made by CEA, as a part of the 17th Electric Power Survey (EPS) was also considered while formulating the 11th Five year Plan of KSEB. With the implementation of the Plan, KSEB expressed to fully meet the energy demand as projected in the 17th EPS.

The installed capacity existing at the beginning of the plan period was 2650 MW (11,950 MU). The projected demand and energy requirements as per 17th EPS vis-a-vis capacity addition planned by KSEB to meet the deficit during the five year period up to 2011-12 was as follows:

Table 3.1.1: Details of projected demand and energy requirements

Projected demand	2007-08	2008-09	2009-10	2010-11	2011-12	Total
Peak Demand (MW)	2856	3004	3159	3335	3528	-
Total Energy Requirement (MU)[2]	15217	16096	17025	18077	19230	-
Capacity Addition Requirement						
Demand (MW)	540.39	185	193.75	220	241.25	1380.39

The capacity addition requirement was arrived at by including the installed capacity deficit as well as the power purchased from IPPs which is much more costly.

To Achieve the goal of capacity addition, a Project Monitoring Cell was constituted under Chief Engineer (Corporate Planning). KSEB considered the following Plan for Demand Deficit Management.

- As the Hydel Power was the only commercially viable source for power generation within the State, it was proposed to add an installed capacity of 610.15 MW/1640.73 MU through the completion of five[3] ongoing hydel schemes and 25[4] new schemes
- Expansion of Rajiv Gandhi Combined Cycle Power Plant (RGCCPP)[5] and reducing generation cost of power from existing liquid fuel stations of KSEB[6], both dependent upon long term availability of LNG in Kerala at affordable prices.
- Coal based Inter-State Projects on long term basis.

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[2] Including T&D Losses

[3] 128.75 MW/407.27 MU

[4] 481.40 MW/1233.46 MU

[5] An IPP owned by NTPC at Kayamkulam, Kerala.

[6] Brahmapuram Diesel Power Plant (BDPP) and Kozhikode Diesel Power Plant (KDPP).

Audit noticed that as against the required capacity addition by 1380.39 MW, KSEB planned capacity addition of 610.15 MW only during the 11th Plan. However, actual addition in generation capacity was only 214.20 MW leaving a total deficit of 1166.19 MW.. Considering the uncertainties in Hydel projects and price fluctuation in the international crude oil market affecting the cost of power purchased from IPPs, KSEB envisaged the necessity for purchasing sufficient power from Coal based Inter-State Projects on medium/long term.

Baitarani Coal based Inter-State Project

As per the new Coal Block Allocation Policy of the Government of India, Ministry of Coal (MoC) alloted (July 2007) the Baitarani West Coal block in Talcher Coal fields in Orissa to KSEB jointly with Orissa Hydro Power Corporation (OHPC) and Gujarat Power Corporation Limited (GPCL) with one third share for each of the allottees. The estimated reserve of Baitarani was 602 Million Metric Tonnes (MMT) and the share of KSEB was 200.67 MMT at an annual production of five MMT which was sufficient to run a plant for 25 to 30 years. A Joint Venture for setting up a power plant of 2000 MW capacity was created (April 2008) for this purpose. However, the power plant did not materialise because of which the said coal mine had been de-allocated.

KSEB replied (November 2013) that the shortfall in capacity addition was mainly due to the hurdles in implementation of Hydro Projects on account of Forest and Environmental clearances, litigation on land acquisition, etc.; which were beyond the control of KSEB. In the case of Baitarani project, the High Court of Odisha had stayed the order of de-allocation and invoking of bank guarantee and it is expected that the coal block would be re-allocated to Kerala.

Thus, the actions initiated by KSEB for purchase of power on long term basis has not materialised so far (January 2014)

3.1.7.3 Medium Term Power Purchase Plan

Since existing capacity was insufficient and long term plans of adding to the generation capacity were not fructifying KSEB had been procuring power from CGSs based on allotment fixed by MoP and from IPPs by executing long term agreements. The average purchase prices of power from CGS and IPPs during the period 2008-2013 ranged from ₹ 2 to ₹ 3.13 and ₹ 7.72 to ₹ 12.62 per unit respectively. Even these arrangements were not sufficient to meet the peak demand deficit. KSEB had therefore to resort to purchase on emergency/short term basis through traders and power exchanges. The cost of purchase was even higher, ranging from ₹ 4.41 to ₹ 7.73 per unit from May 2008 onwards. As the purchase price of power from short term market was higher, KSERC directed (August 2008) that procurement of power shall be for longer duration through competitive bidding process.

Accordingly, KSEB planned for procuring power for a period of five years on medium term basis. Board accorded sanction (November 2009) for initiating Case I route[7] bidding process for procuring 300 MW Round the clock (RTC) power and 100 MW Peak power (6 pm – 10 pm) for a period of five years from January 2012 to December 2016. The approval of KSERC was received on 5 October 2010 and CE (C&T) invited (April 2011) two part bids. As only two offers[8] were received (06 July 2011), the Core Committee (18 and 22 July 2011) and Evaluation Committee (21 July 2011) discussed various aspects of bids received and expressed their apprehension over less number of participants. The price bids were not opened as the quantum of power offered on RTC basis was only 240 MW as against 400 MW tendered. Based on suggestion of the Evaluation/Core Committees, Board decided (August 2011) to re-tender Case I bidding for which KSEB filed petition for approval before KSERC on 2 June 2012, after a lapse of 10 months. Approval of KSERC for re-tender was received on 15 October 2012 and revised tender notice for procuring 300 MW RTC power and 100 MW peak power for three years through Case I bidding was issued on 12 November 2012. KSEB finalised (22 April 2013) the Case I bidding for procuring 400 MW power (300 MW RTC power from NTPC Vidyut Vyapar Nigam Limited at the rate of ₹ 4.49 per unit and 100 MW RTC power from PTC India Limited at the rate of ₹ 4.45 per unit) for a period of three years from March 2014 to February 2017.

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[7] Under Case I bidding route location of the power station and fuel are not specified.

[8] JSW Power Trading Company Limited, New Delhi (offered 200MW) and Vandana Vydyuth Limited, Raipur (offered 40 MW)

Audit observed that:

(i) Process of bidding under Case I for medium term power based on the decision of the Board (May 2009) initiated in April 2011 could be finalised only in April 2013 as against the time schedule of four months by August 2011 fixed for the whole process. A detailed chronology of events indicating undue delay in processing the bid under Case I is summarised in **Annexure 12.**

(ii) As per existing CERC Regulations[9], transmission corridor was available at a stretch only for a period of three years. Ignoring this fact the Board went ahead with Case I route bidding for procuring power for a period of five years which proved to be unsuccessful and resulted in a retendering process. A mere amendment of limiting the period of supply to three years in the revised tender issued in November 2012, led to KSEB receiving proposals from nine bidders and finalising (22 April 2013) of the Case I bidding for procuring 400 MW.

(iii) On account of undue delay in arranging power supply on medium term basis through Case I bidding route, KSEB had to purchase costly power from short term/day ahead market through power exchanges, traders, etc. The avoidable extra expenditure even at the weighted average rate of both Indian Energy Exchange (IEX) (day ahead/term ahead) and UI worked out to ₹ 244.07 crore **(Annexure 13)** during the period from January 2012 to March 2013[10] as compared to Medium Term Open Access (MTOA) rate.

KSEB replied (November 2013) that LoI issued for 3155 MU of power during the said period did not materialise due to non-availability of corridor, which was beyond their control. The reply was not acceptable due to the fact that as on January 2012, corridor was available under MTOA basis which could not be availed by KSEB due to non-finalisation of the tender in time.

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[9] CERC (Grant of Connectivity, Long-term Access and Medium-term Open Access in Inter-State Transmission and related matters) Regulations, 2009.

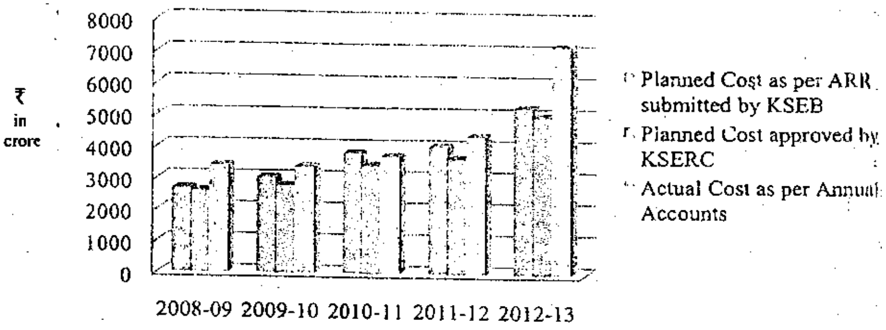
[10] KSEB invited first tender for supply of power from January 2012 onwards and loss worked out upto the period covered in audit.

14-07/19

Poor planning leading to emergency purchases

3.1.7.4 Purchase cost planned by KSEB, approval given by KSERC and actual purchase cost during the five year period 2008-13 is depicted in the following chart:

Chart 3.1.2: Details of Planned, Approved and Actual Cost



(Source: Annual Accounts of KSEB)

In all these years except 2010-11, actual purchase cost exceeded planned and approved cost.

The high purchase cost referred to above was mainly due to poor monsoon and consequent reduction in Hydel generation and in case of 2012-13, actual purchase cost far exceeded the planned and approved cost as there was supply curtailment by CGS. However, Audit noticed that poor planning also contributed to the high purchase cost as described below:

As per annual accounts, KSEB purchased 56,529 MU at a cost of ₹ 22,098 crore during the period from 2008-09 to 2012-13. Details of power purchased as per plan by the CE (C & T) and the contingency purchase made by CE (T-SO) are shown in table below:

Table 3.1.2: Details of power purchased as per plan and contingency purchase.

Year	Purchase by CE (C & T)				Purchase by CE (T-SO)				Total Power Purchase (MU)[11]
	Long Term (IPP+CGS(MU)	Short Term (MU)	Total (MU)	%	Power Exchanges (MU)	Unscheduled Interchange (MU)	Total (MU)	%	
2008-09	8662	166	8828	94	267	305	572	6	9400
2009-10	8855	230	9085	92	394	371	765	8	9850
2010-11	8229	661	8890	88	392	796	1188	12	10078
2011-12	8594	862	9456	88	811	533	1344	12	10800
2012-13	10483	1761	12245	84	1316	958	2274	16	14519
Total	44823	3680	48504		3180	2963	6143		54647

As seen from the above Table, purchase made by CE (C & T) decreased from 94 per cent in 2008-09 to 84 per cent in 2012-13 with corresponding increase in costly Day Ahead purchase by CE (T-SO) from six per cent to sixteen per cent within the five years ended 2012-13.

3.1.7.5 Swapping of power by deviating from Power Purchase Plan for 2011-12

As per system in vogue, KSEB resorts to swap mechanism to supply power when there is a comfortable position of power and enough transmission arrangements for return of power. KSEB, however, in 2011-12 swapped power when there was deficit and without ensuring availability of corridor for return of power.

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[11] Figures are as per Monthly Power Purchase statement of CE (C & T).
The difference of 1882 MU was stated to be due to External Transmission loss (PGCIL loss).

The Generation and Power Purchase Plan of KSEB for 2011-12 projecting the annual energy requirement at 18,534.53 MU and peak demand at 3280 MW against which anticipated availability of energy from Hydel stations and CGS was 15,418.61 MU was submitted to KSERC in February 2011. In order to meet the balance requirement of 3115.92 MU, KSEB proposed to schedule 1819.96 MU from RGCCPP of NTPC, other liquid fuel stations and small IPPS and remaining deficit of 1295.96 MU to be purchased from short term market. The month wise deficit in energy and peak demand anticipated by KSEB was as follows:

Table 3.1.3: Details of month-wise deficit in energy and peak demand

2011-12	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Energy Deficit (in MU)	91.52	154.68	69.19	78.87	97.57	76.85	70.95	111.69	120.62	136.28	154.73	132.99	**12595.96**
Peak Demand Deficit (in MW)	240	291	207	102	104	163	155	34	105	157	188	43	-

The anticipated shortage increased from 1295.96 MU to 2210.96 MU as KSEB came to know that there would be delay in commissioning of new CGS stations and expected consequent reduction in availability of power during the first half of 2011-2012 by 915 MU. KSEB therefore sought permission of KSERC in May 2011 to purchase the additional quantity of 915 MU also from short term markets.

While the Power Purchase Plan with anticipated deficit in energy was pending approval of KSERC[12], an offer for swapping 100 MW RTC power in the month of July 2011 and 30 MW RTC power in the month of August 2011 from a Trader - GMR Energy Trading Limited (GMRETL) was received in March 2011.

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[12] Approval was received on 1 June 2011.

The Full Time Members (FTM) accorded sanction[13] for banking (swapping) of power based on the recommendation of CE (C & T) without inviting tenders. The Full Board ratified (12 May 2011) the swapping of 100 MW RTC power through GMRETL to a Northern Region Utility (NRU) for supply in July and 30 MW in August 2011 subject to following conditions:

- NRU shall return 105 per cent of the quantity supplied by KSEB in the month of February and March 2012 respectively.
- NRU and GMRETL shall execute a tripartite agreement with KSEB to ensure return of power.

Accordingly, a tripartite agreement among KSEB, GMRETL and BSES Rajadhani Power Limited (BRPL), a NRU, was executed on 23 May 2011 incorporating the above conditions.

On receipt of another offer (3 May 2011) from GMRETL for swapping of power in May and June 2011 the CE (C & T) invited (18 May 2011) tender to swap 100-200 MW off peak power in June 2011 to be returned during Peak/RTC in March 2012. Against this, three offers including GMRETL were received. The offer of GMRETL was accepted and a tripartite agreement executed on 26 May 2011[14] for swapping 100 MW firm power through GMRETL to BRPL for supply in the month of June 2011 subject to condition that BRPL shall return 101 per cent of the quantity supplied by KSEB in March 2012 and GMRETL shall pay at the rate of ₹ 8.60 per unit for any shortfall of return power.

Thus, KSEB had made swap arrangement with BRPL for about 230 MW of power (100 MW in June, 100 MW in July and 30 MW in August 2011) in total under above two Power Swap Agreements (PSA) with return of power during February and March 2012. Against the quantity of 121.94 MU supplied, 126.96 MU was to be received. However, quantity returned was only 41.54 MU leaving a shortfall of 85.42 MU.

Audit observed following lapses in execution and monitoring swap agreements:

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[13] Vide Board Order (FM) No. 1146/2011 (Comml/SWAP/2011-12) dated 7-5-2011.

[14] Ratification of the Full Board was obtained only on 30 May 2011.

- KSEB decided (May 2011) to swap power during the months June, July and August 2011 wherein it anticipated peak deficit of 69.19 MU, 78.87 MU and 97.57 MU respectively. Further, KSEB's decision to swap while the power plan was pending approval would vitiate the KSERC's tariff fixation.
- During the period from June to August 2011, 121.94 MU of power was given on swap through GMRETL. However, there was no surplus power to offer on swap. This was therefore arranged from purchased power and the cost of power given on swap worked out to ₹ 43.29 crore. It is pertinent to note that the CE (T-SO) had foreseen the situation of non-availability of surplus power but this was ignored.
- Actual swap return by NRU was only 41.54 MU leaving a shortage of 85.42 MU (64.96 MU in February and 20.46 MU in March 2012) due to non availability of sufficient corridor. As sufficient corridor was not available during February and March 2012, GMRETL requested the permission of CE (C & T) for participating in the e-bidding for access of corridor. KSEB, however, did not give permission to the Trader for participating in e-bidding for obtaining corridor.
- Due to non receipt of agreed quantity of power, KSEB was forced to purchase costly power from short term market at ₹ 7.27 per unit in February and ₹ 6.87 per unit in March 2012. The extra expenditure on this account worked out to ₹ 30.95 crore (64.96 MU at the rate of ₹ 3.72[15] per unit and 20.46 MU at the rate of ₹ 3.32[16] per unit).

KSEB replied (November 2013) that there was no energy deficit when swapping was done. The reply was not acceptable as KSEB had anticipated purchase of high cost power from IPPs and Traders to the extent of 88 MW, 313 MW and 113 MW during June, July and August 2011 respectively to make good and deficit in peak demand. Even after considering purchase, there were deficits in peak demand during June (230 MW), July (157 MW) and August 2011 (393 MW).

Thus, the imprudent decision to swap power during June to August 2011 ignoring the actual power position and without ascertaining the availability of the corridor resulted in extra expenditure of ₹ 30.95 crore.

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[15] Short term rate of ₹7.27 less cost of power given on swap @ ₹3.55

[16] Short term rate of ₹ 6.87 less cost of power given on swap @ ₹ 3.55

Finalization and signing of PPA

3.1.7.6 Power Purchase Agreements with Private IPPs

KSEB executed long term PPAs with following two private IPPs in Kerala in order to mitigate the power crisis in the State. The installed capacity, date of agreement, etc., are given below:

Table 3.1.4: Details of private IPPs

Name of IPP	Date of agreement and expiry	Installed capacity		Date of commencement of commercial operation
		In MW	In MU	
Kasargod Power Corporation Ltd. (KPCL)	20-8-1998 & 31-3-2016	21.178	185.52 per annum	14-5-2001
BSES Kerala Power Limited (BKPL)	3-5-1999 & 31-10-2015	157	1387 per annum	23-11-2001

As per the agreement, KSEB was bound to pay monthly fixed charges to the IPPs even if there was no purchase of power till the expiry of agreements. Since the production of power by above IPPs was based on petroleum products[17] the cost per unit was higher compared to Hydel Power and power from CGS. Hence, purchase of power from IPPs was restricted to minimum quantity.

Meanwhile, two Power Exchanges, Indian Energy Exchange (IEX), Power Exchange India Limited (PXIL) came into existence in June 2008 and October 2008 respectively. As the purchase price of power from above Exchanges was lower, KSEB purchased more power from them and reduced the purchase from two IPPs to the considerable extent as shown below:

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[17] High Speed Diesel Oil, Low Sulphur Heavy Stock and Naphtha.

Table 3.1.5: Details of average purchase cost per unit from IPPs

Year	Unit in MUs	Fixed charges (₹ in crore)	Va riable charges (₹ in crore)	Total cost (₹ in crore)	Average cost per unit (₹ in crore)
KPCL					
2008-09	97.28	8.72	108.01	116.73	12.00
2009-10	75.06	9.76	50.67	60.43	8.05
2010-11	27.06	7.58	21.44	29.02	10.72
2011-12	10.05	6.79	11.25	18.04	18.00
2012-13	2.60	3.25	3.24	6.49	24.90
BKPL					
2008-09	847.25	89.35	552.97	642.32	7.58
2009-10	576.70	88.41	369.19	458.00	7.93
2010-11	222.96	86.43	189.46	275.89	12.37
2011-12	45.44	59.05	44.32	103.37	22.75
2012-13	131.34	88.33	148.51	236.84	18.03

From the above Table it could be seen that purchase from KPCL drastically reduced from 97.281 MU in 2008-09 to 2.60 MU in 2012-13 due to which average unit cost of power stood at ₹ 24.90 per unit in 2012-13 as against ₹ 12 per unit in 2008-09. Similarly, purchase from BKPL increased from 847.25 MU to 131.34 MU during the five years ended 2012-13 and average cost per unit stood at ₹ 18.03 per unit in 2012-13. At the same time, purchase of power from Exchanges increased steeply from 267.11 to 1315.99 MU as the average cost of power from Exchanges was much lower than that of the IPPs which ranged from ₹ 3.98 to ₹ 7.47 per unit.

In the above circumstance, renewal of PPAs with KPCL and BKPL after validity period may be reviewed considering high cost and availability of power from other sources at lower prices.

KSEB replied (November 2013) that renewal of PPAs would be done after detailed discussions at various levels and observing statutory regulations for purchase of power.

Provisions in the PPA

3.1.7.7 IPPs are power plants within the State of Kerala with whom KSEB has entered into long term PPA. As on March 2013 there are three major IPPs using non-renewable energy resources and 37 small IPPs using renewable energy resources of which 33 are wind power projects.

Non Compliance of renewable energy purchase norms

Electricity Act, 2003[18] mandates KSERC to promote co-generation and generation of electricity from renewable sources by providing suitable measures for connectivity with the grid and sale of electricity. It also requires that specified percentage of total consumption of electricity in the area of a Distribution Licensee should be from such sources. Accordingly, KSERC fixed (June 2006) norms for purchase of renewable energy vide Power Procurement from Renewable Sources by Distribution Licensee Regulations, 2006 whereby each Distribution Licensee shall purchase a quantum of five per cent of its total consumption of energy from renewable sources. Out of five per cent, two per cent shall be from Small Hydro Projects, two per cent from Wind and one per cent from all other sources. Audit noticed that KSEB could not achieve the norms fixed for wind energy for the years 2008-09 and 2009-10 as detailed below:

Table 3.1.6: Details of wind energy consumption vis a vis norms

Year	Total Consumption (Purchase & generation) by KSEB (MU)	Wind Energy purchased/generated (MU)	Percentage of norm fixed	Actual percentage achieved
2008-09	15451.35	33.68	2	0.22
2009-10	17094.76	69.45	2	0.41

KSEB replied (November 2013) that though targets for purchasing renewable energy were prescribed by the KSERC, it did not compel KSEB to fulfill

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[18] Section 86 (1) (e)

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the Renewable Purchase Obligation (RPO) nor was any penal action initiated for the non-compliance. KSEB further stated that it has been taking efforts to meet the RPO targets stipulated by KSERC.

However, the fact remains that KSEB as State utility should have complied with Regulations of KSERC issued from time to time in this regard.

Non-availing of Carbon Credit

The United Nations Framework Convention on Climate Change had introduced Clean Development Mechanism (CDM) as part of Kyoto Protocol which came into effect from 2005. The CDM, defined in Article 12 of the Protocol, allows a country with an emission-reduction or emission-limitation commitment under the Kyoto Protocol to implement an emission-reduction project in developing countries. Such projects can earn saleable Certified Emission Reduction (CER) credits, each equivalent to one tonne of Carbon Dioxide, which can be counted towards meeting Kyoto targets. In India, National Clean Development Mechanism Authority (NCDMA), under the Ministry of Environment and Forests, receives projects for evaluation and approval as per the guidelines and general criteria laid done in the relevant rules and modalities pertaining to CDM.

The KSERC in its Tariff Order for the year 2007-08 directed (November 2007) KSEB to explore the opportunity to earn Carbon Credits derived from reduction in emissions of green house gases achieved through renewable sources in its proposed hydroelectric and wind power projects. As per CERCV (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2012 issued by Central Electricity Regulatory Commission, the benefits of CDM may be shared between the generator and the buyer as follows:

(i) 100 per cent of the gross proceeds on account of CDM benefit to be retained by project developer in the first year after the date of commercial operation of the generating station.

(ii) In the second year, the share of the beneficiaries shall be 10 per cent which shall be progressively increased by 10 per cent every year till it reaches 50 per cent, whereafter the proceeds shall be shared in equal proportion, by the generating company and the beneficiaries.

Audit noticed that NCDMA had approved following projects of the IPPs in Kerala with whom KSEB had entered into PPAs, and had issued CER credits as detailed below:

Table 3.1.7: Details of Certified Emission Reduction credits

Name of IPP	Source of Power	No. of CERs issued (upto December 2012)
Energy Development Company Limited (Ullunkal Hydro Power Project)	Small Hydro	51514
Viyyat Power Private Limited (Iruttukanam Small Hydro Electric Project, Kerala)	Small Hydro	50955
Zenith Energy Services (P) Limited	Wind	85052
Total		**187521**

Source: Website of NCDMA

Audit observed that eventhough, KSEB purchased power to the tune of 585 MU from renewable sources during the period 2008-09 to 2012-13, CDM benefits availed by the IPPs were not shared with KSEB so far (March 2013). On being pointed out about non-sharing of benefits accruing out of carbon credit for the project, KSEB replied (November 2013) that action was being taken to collect the CDM benefits from Wind as well as Small Hydro IPPs.

Monitoring Mechanism

3.1.7.8 Short supply of power by Central Generating Stations

State of Kerala was getting power from Central Generating Stations (CGS) which is comparatively cheaper and average cost per unit ranged btween 2 and 3.13 during the period 2008-09 to 2012-13. The power allocation from CGSs is decided by the MoP in advance with the approval of CERC. MoP makes periodical revisions in the share of power allotted to States and accordingly CGSs finalise the share (Drawal Schedule) for each State. Based on this Schedule, KSEB assesses the demand deficit and plans purchase of power from Traders/IPPs/Exchanges, etc. During the period from July 2012 to March 2013, there was shortfall in receipt of 852.96 MU (15 per cent) power from CGSs. As against scheduled quantum of 6644.70 MU (net entitlement[19] of 5831.45 MU), KSEB received only 4978.49 MU.

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[19] Scheduled quantum after Transmission Loss, Auxiliary and Plant Load Factor.

In this connection it was noticed in audit that the CE (T-SO) had admitted (August 2012) the Member Secretary, Southern Region Power Committee (SRPC), Bangalore the concern over forced outages of CGSs units from July 2012. The CE (T-SO) requested (Septemebr 2012) the Member (Transmission and Generation Operations) to take up the matter at appropriate level as short supply of power by CGSs caused huge financial burden to KSEB due to purchase of costly power coupled with scarce hydro reserve.

In order to make good the shortfall, KSEB had to purchase high cost power by incurring an extra expenditure of 163.96 crore reckoned at the purchase rate from traders (Annexure 14) from July 2012 to March 2013. Moreover, KSEB had to impose power restrictions through load shedding during the period from 15 December 2012 to 31 May 2013.

KSEB, however, has not initiated any action against CGSs under Clause 'Settlement of Disputes' of the PPAs to get compensation for the loss sustained due to shortfall in supply of allocated/entitled quantity.

KSEB replied that the shortfall in receipt of 852.96 MU of power from CGS was a result of policy decision of the GoI/MoP. Hence, the issue did not come under the purview of the Settlement of Disputes of the PPA.

Reply was not acceptable as the MoP decides only the entitled quantity (allocation) for each State and the shortfall of 852.96 MU referred to was the difference between allocated quantity (net entitlement) by MoP and actual quantity supplied by CGSs to KSEB. Since, the shortage was not due to review of allocation by MoP/GoI, the issue comes under the purview of Settlement Dispute Clause of the PPAs and KSEB should have initiated action to make good the extra expenditure of ₹ 163.96 crore.

3.1.7.9 Excess Transmission and Distribution Losses

KSEB could not achieve the norms fixed by KSERC resulting in excess T&D losses of 451.88 MU amounting to ₹ 172 crore during the period 2008-09 to 2012-13.

KSEB stated (November 2013) that KSERC had been fixing ambitious but unrealistic loss reduction targets without any scientific study or considering the ground realities of size and complexities of the system and investment requirements. It was stated that loss reduction depends not only on controllable factors such as faulty meter replacement, installation of transformer, etc., but also have a strong footing on the energy sales, line loadings, etc., and consequently there is always mismatch between the loss reduction approved by KSERC and the same achieved by KSEB.

The reply of KSEB was not acceptable as they were aware that KSERC while approving the ARR for the year 2013-14 had observed that in the absence of reliable supporting materials on the T&D loss level, KSERC was not in a position to arrive at more reasonable estimates on the loss reduction or loss level. KSEB failed to provide supporting materials of the T&D loss to determine the actual power requirement. Therefore KSEB had to make up excess loss by procuring additional power at higher cost on short term basis.

Internal Audit

3.1.7.10 As per the Manual on Commercial Accounting System, Volume X (auditing) for Internal Audit in KSEB, various aspects of all purchases, including trade/cash discounts given are properly availed, whether emergency purchases are really needed or not, budgetary control, etc., are to be checked.

It was seen in audit that total expenditure on purchase of power ranged from ₹ 3384.52 crore (2009-10) to ₹ 7199.61 crore (2012-13) during the five years upto 2012-13, which constituted about 57 per cent of total expenditure on an average. However, Internal Audit did not conduct pre/post audit of invoices and vouchers of power purchase with reference to agreement conditions defeating the very purpose envisaged in setting up of Internal Audit wing. Thus, deficiencies in internal audit led to following lapses:

- KSEB executed (12 August 1998) a Power Purchase Agreement (PPA) with Karsargod Power Corporation Limited (KPCL) for construction and operation of a power plant with net generating capacity of 21.178 MW. Plant started commercial operation on 14 May 2001 and was supplying power to KSEB since then. As per the PPA, there was a foreign loan (Dutch Guilder) component of ₹ 35 crore with an interest rate of 10 per cent per annum and the exchange rate agreed in the PPA was ₹ 19.15 per Dutch Guilder. As per Clause 7.2(i) of the PPA, KPCL was eligible to recover the variation on exchange rate for the actual foreign debt service payment made by KPCL by producing documentary evidence. KPCL, however, claimed ₹ 11.69 crore upto March 2008 towards the exchange rate variation on the loan component of ₹ 35 crore without producing any documentary evidence.
- In the meantime, KPCL admitted before KSERC that they had not availed any foreign loan and hence could not produce the foreign loan payment

details. Consequent to this disclosure, KSEB had been retaining 10 per cent of the admitted fixed charges from December 2006 onwards and retained ₹ 5.79 crore upto February 2013. Further, an amount of ₹ 5.90 crore was receivable from KPCL on this account (March 2013). It indicated inadequacy of internal audit.

- Draft agreements relating to power purchase/trading transactions and other related activities were not being vetted by Internal Audit wing before execution of agreement to ensure that financial interest of KSEB is fully secured.

KSEB replied (November 2013) that due to time constraints and urgency of work, pre-audit of power purchase bills for payment was not practical. Reply further stated that vetting of draft PPAs by internal audit wing would be brought to the notice of Board for consideration.

Impact

3.1.7.11 Revenue realisation from purchased power

The per unit cost of power purchased from each category during 2008-09 to 2012-13 is given in the following Table:

Table 3.1.8: Details of per unit cost of power purchased

(Amount in ₹)

Period	CGS #	IPPs #	UI #	Purchase from Traders / Exchanges #	Sale[20] through Traders / Exchanges #	Consolidated Purchase Cost *	Average Realisation *
2008-09	2.00	7.72	5.23	7.73	10.08	3.55	3.59
2009-10	2.12	7.30	2.59	4.41	8.51	3.32	3.35
2010-11	2.50	8.90	1.53	4.66	11.20	3.54	3.48
2011-12	3.02	12.62	2.50	5.07	10.83	3.88	3.46
2012-13	3.13	12.44	3.36	6.17	12.89	4.83	4.29

#Source: Monthly power purchase statement of CE (Commercial & Tariff)

*Source: Annual Accounts of KSEB

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[20] KSEB had sold power at higher rates as and when surplus power was available and the same was deducted from purchase cost for working out consolidated purchase cost.

Thus, the net realisation of revenue from purchased power, which ranged from 58 to 74 per cent of total supply was hardly sufficient to bridge the revenue gap of KSEB. Further, from 2010-11 onwards, the average realisation of revenue from purchased power was less than the cost adversely affecting the financial position of KSEB.

3.1.7.12 KSEB met 58 to 74 per cent of power requirement through purchase from various sources during the period 2008-09 to 2012-13 and had to spend about 53 to 62 per cent of the total revenue for power purchase as shown below:

Table 3.1.9: Total revenue vis a vis expenditure on power purchase

	2008-09	2009-10	2010-11	2011-12	2012-13
Total Revenue (₹ in crore)	6098.99	6411.38	6925.06	7978.05	11658.10
Expenditure on Power Purchase (₹ in crore)	3417.23	3384.52	3721.59	4375.31	7199.61
Percentage	56	53	54	55	62

(Source: Annual Accounts of KSEB)

Since the purchase cost per unit was increasing the margin from supply of purchased power had decreased over the years leading to a loss of ₹ 1272.84 crore for the five year period 2012-13 as shown below:

Table 3.1.10: Margin from supply of purchased power

Period	Consolidated Purchase Cost per unit* (₹)	Average Realisation per unit* (₹)	Margin per unit (₹)	Energy Purchased (MU)	Profit/(-) Loss (₹ in Crore)
2008-09	3.55	3.59	0.04	9628.98	38.51
2009-10	3.32	3.35	0.03	10199.96	30.60

2010-11	3.54	3.48	(-) 0.06	10512.29	(-) 63.07
2011-12	3.88	3.46	(-) 0.42	11270.71	(-) 473.37
2012-13	4.83	4.29	(-) 0.54	14916.79	(-) 805.51
Total					**(-) 1272.84**

*Source: Annual Accounts of KSEB

In addition, Audit has found deficiencies/irregularities causing extra expenditure/loss amounting to ₹ 610.98 crore as detailed in earlier paragraphs.

Conclusion

KSEB failed to manage its power deficit well which led to purchase of costly power from IPPs and short term markets. As it did not plan well, it led to delays in execution of projects and imprudent swapping of power decisions leading to extra expenditure. KSEB also could not adhere to norms of actual T&D loss reduction and renewable energy norms nor could take up cases of short supply by Suppliers in time.

(Audit Paragraph 3.1.1 to 3.1.7.12 contained in the Report of the Comptroller and Auditor General of India for the year ended 31st March 2013)

Notes furnished by Government on audit paragraph is given in Appendix II.

Audit Paragraph 3.2.1 to 3.2.7.19 (2012-13)

3.2.1 Introduction

The Government of India (GoI) notified (March 2005) Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY), a Scheme for rural electricity infrastructure development and household electrification in the country within a period of five years. Ministry of Power (MoP), GoI framed the guidelines for the implementation of the Scheme and appointed Rural Electrification Corporation (REC) as the nodal agency. The Scheme envisaged overall rural electrification by creating distribution network in each village which would be adequate to provide access to electricity to all Rural Households (RHHs) and cater to requirement of other sectors of village.

The Scheme envisaged electricity connections of 40/60 watts only be provided free of cost to BPL households. Households above poverty line would have to pay for their connections at prescribed connection charges. The Scheme contemplated to provide electric connections to unelectrified public places like schools, Panchayath offices, community/Government health centres/dispensaries, etc. To support these connections, the Scheme also provided for creation of infrastructural facilities viz Rural Electricity Distribution Backbone (REDB), Village Electrification Infrastructure (VEI) and Decentralised Distributed Generation (DDG) and supply for transmission and distribution of electricity. The Scheme was to be implemented by the electricity utility through turnkey contractors and the management of rural distribution was to be done through franchisees.

Kerala State Electricity Board (KSEB) targeted (April 2005) to electrify ₹ 4.68 lakh RHHs with a projected cost of ₹ 438.36 crore. The target was reduced to cover 0.91 lakh BPL households with a revised project cost of ₹ 224.35 crore.[21]

3.2.2 Structure for implementation of the Scheme

KSEB being the sole utility for generation, transmission and distribution of power in the State, was designated as the Project Implementing Agency (PIA) of the Scheme in the State. The Chief Engineers (Corporate Planning, Distribution-North/South/Central) and the Deputy Chief Engineers of Circle Offices were entrusted with the responsibility of implementation of the Scheme.

3.2.3 Scope of Audit

The present performance audit conducted from July 2012 to December 2012 and from April 2013 to June 2013 covers implementation of RGGVY during the period 2008-09 to 2012-13. The records of KSEB maintained with Chief Engineers (Corporate Planning, Distribution-North/Central), Circle Offices and Section Offices were examined with a view to analyse the economy, efficiency and effectiveness in implementation of the Scheme.

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[21] Idikki: 19.95 crore, six Northern districts – ₹114.57 crore and seven Southern districts – ₹ 89.83 crore.

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3.2.4 Audit Objectives

The objectives of the performance audit were to ascertain whether:

- Detailed Project Reports (DPRs) were prepared on the basis of model DPR and included all parameters necessary to achieve the objectives of the Scheme;
- the execution of RGGVY works including procurement and award of turnkey contracts were managed economically, effectively and efficiently in a timely manner and in compliance with guidelines and
- there was an adequate and effective mechanism for monitoring and evaluation of implementation of the Scheme.

3.2.5 Audit Criteria

The following audit criteria, flowing from the following records, were adopted:

- Rural Electrification Policy 2006;
- Scheme Guidelines issued by Ministry of Power and additional guidelines issued by REC regarding Quality Control and Procurement of Goods and Services etc.;
- Tripartite/Quadripartite agreements among REC, State Government, State Power Utilities;
- Board Minutes and Agenda Notes of KSEB;
- Sanction for payment of capital subsidy of MoP and
- Detailed Project Reports.

3.2.6 Audit Methodology

The methodology adopted for attaining 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 Report to KSEB/Government for comments.

3.2.7 Audit Findings

We explained the audit objectives to the Management of KSEB during and Entry Conference(August 2012) and audit findings were discussed in an **Exit** Conference (January 2013). The Entry meeting was attended by the Additional Secretary (Power Department), Government of Kerala(GoK) and representatives of KSEB. The Exit Conference was attended by representatives of KSEB. KSEB replied(January 2014) to audit findings and same have been considered while finalising this Performance Audit Report. The audit findings are discussed in subsequent paragraphs.

Component-wise Physical progress

3.2.7.1 Based on implementation, 14 projects in the 14 districts of the State were grouped into three phases i.e., Phase-I (Idukki district), Phase II (six northern districts) and phase III (seven southern districts) and progress of implementation of four components is shown below:

Details of progress of implementation

Component	Phase I (Idukki District)		Phase II (6 Northern Districts)		Phase III (7 Southern Districts)		Total		Percentage
	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement	
1.REDB[22]	Nil	Nil	3	Nil	1	Nil	4	Nil	
2.VEI Works: (a) LT Single Phase (KMs)	258.35	368.69	2113.39	710.95	419.57	Nil	2791.31	1079.64	39
LT 3 Phase (KMs)	62.14	63.51	358.57	136.32	269.67	Nil	690.38	199.83	29
11KV Line (KMs)	350.90	249.94	995.16	442.82	796.52	Nil	2142.58	692.76	32

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[22] Targeted for four districts – Malappuram, Wayanad, Ernakulam and Palakkad.

(d) Transformer (Nos.)	308	275	1050	366	1159	Nil	2517	641	25
3. Electrification of HouseHolds	16097	17238	55965	37904	18839	Nil	90901	55142	61
4. DDG	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	

The Scheme scheduled for implementation during the period of five years from April 2005 to March 2010 could not be completed till date(March 2013) due to delays in planning and execution in an extremely lackadaisical manner. Moreover, the focus of KSEB was only on providing VEI (component 2) and household connections (component 3); while the development of infrastructure through REDB and DDG necessary to support electrification of the households was grossly neglected. The overall physical progress of implementation of the various components in the State even after eight years averaged 31 per cent in respect of creation of infrastructure and 61 per cent in respect of electrification of BPL households. The electrification of unelectrified public places like schools, Panchayath offices, Government health centers, etc., was totally ignored. Mishandling at various stages of the project is explained in subsequent paragraphs.

Financial Progress

3.2.7.2 As per the guidelines issued, REC had to release Capital Subsidy in four instalments as follows:

- First instalment – 30 per cent of sanctioned project cost within 15 days from the date of execution of loan documents and fulfillment of all requirements.
- Second instalment – 30 per cent within 15 days from submitting the expenditure details to REC by implementing agency after obtaining necessary concurrence of State Government for 80 per cent of expenditure of first instalment.
- Third instalment – 30 per cent of the sanctioned project cost within 15 days from submitting the expenditure details to REC by implementing agency

after obtaining necessary concurrence of State Government for 80 per cent of expenditure of first and second instalments.

- Fourth and final instalment : 10 per cent of the sanctioned project cost within 30 days from submitting the expenditure details and completion details to REC by State Power Utility after obtaining necessary concurrence of State Government and after final monitoring by REC.

KSEB could obtain only ₹ 104.33 crore (47 per cent) against total project cost of ₹ 224.35 crore from REC due to slow progress in implementation. Further, the actual utilisation for the last eight years was only ₹ 66.57 crore (64 per cent) as shown below:

Table 3.2.2: Fund receipt from REC and its utilisation (₹ in crore)

Year	Opening Balance	Fund Received from REC	Total	Fund Utilised	Unspend fund at the end of the year
2005-06	0	0	0	0	0
2006-07	0	5.02	5.02	1.50	3.52
2007-08	3.52	0.10	3.62	1.99	1.63
2008-09	1.63	0.84	2.47	8.18	-5.71
2009-10	-5.71	10.59	4.88	7.33	-2.45
2010-11	-2.45	31.89	29.44	1.45	27.99
2011-12	27.99	0	27.99	21.67	6.32
2012-13	6.32	55.89	62.21	24.45	37.76
Total		104.33		66.57	

Source : Details furnished by Chief Engineer (Corporate Planning), KSEB

As per the Scheme, 90 per cent of the total implementation cost would be financed by GoI as capital subsidy through REC and the remaining 10 per cent was to be contributed by the respective State Governments. As GoK did not contribute its share of 10 per cent of the project cost, KSEB had to arrange the same by way of loan from REC which resulted in financial burden of ₹ 7.56 crore.

Audit noticed that the delay in implementation of the Scheme was due to the following factors:

- Submission of DPRs not in accordance with RGGVY guidelines;
- delay in getting sanction from REC and 'No Objection Certificate' from the Forest Department and
- delay in tendering, awarding and execution of works in northern districts.

3.2.7.3 Loss of central assistance due to deficient DPRs

Deficient DPRs and delays in implementation at various stages further reduced the coverage and benefits of the Scheme by providing electricity connection only to 0.55 lakh RHHs. Because of this there was reduced Central assistance under RGGVY as shown below:

Table 3.2.3: Details of reduction in coverage

Impact in coverage			
Proposal	Households	Outlay (₹ in crore)	Period
Original proposal for 14 districts (April 2005)	4.68 lakh (including 2.09 lakh BPL)	438.36	5 years
Revised proposal for 14 districts (April 2005 to December 2012)	1.66 lakh (including 0.91 lakh BPL)	224.35	8 years but only 31 per cent completed
Loss of benefit to the State	3.02 lakh not electrified	214.01	

KSEB replied that revised DPRs were prepared based on actual survey and number of BPL service connections as per actual survey was lesser than that proposed earlier. REC has rejected 24 numbers of substations proposed under REDB in the DPR and hence the sanctioned amount was lesser than the proposed amount. The reply does not hold good as reduction in Central assistance was mainly due to delay in the implementation of the Scheme and in the meantime various works were executed by KSEB utilising its funds.

Planning

Deputy Chief Engineers (Dy. CEs) of Circle Offices were entrusted to prepare the DPRs for all the 14 districts. Audit noticed that the DPRs prepared by the Dy.CEs were not as per REC guidelines[23], had technical flaws and did not target all the BPL households as envisaged in the scheme.

3.2.7.4 Delays in preparation and submission of DPRs

Audit noticed that when the Scheme envisaged to complete the project within a period of five years from April 2005, KSEB took eight years (April 2005- March 2013) for submitting several proposals to REC as the DPRs submitted by KSEB had several deficiencies. The latest proposal for DDG was submitted only in March 2013.

3.2.7.5 Deficiencies in the DPRs

Out of the DPRs for the 14 districts submitted by KSEB at the commencement of the scheme, REC sanctioned (August 2005) DPRs for only seven districts and rejected (October 2005) DPRs of the remaining seven districts due to deviations from REC guidelines as indicated below:

- In the DPRs of the five southern districts[24] rejected by REC, KSEB had submitted two DPRs per district, instead of single DPR as envisaged in the guidelines.

- In respect of other districts[25], REC requested to submit justification for the number of distribution transformers and habitations included in the DPR.

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[23] As per para 4.1(a) of RGGVY guidelines, the jurisdiction of the project should normally be co-terminus with an administrative district with block wise identification of infrastructure to provide access to electricity to all rural households in all the villages. Thus the project shall contain district wise list of villages which shall include tribal villages as well as dalit bastis together with correct information and data as per census 2001 regarding population, number of household, BPL household and the revenue villages.

[24] Thiruvananthapuram, Kollam, Kottayam, Ernakulam, Thrissur.

[25] Pathanamthitta and Alappuzha

KSEB resubmitted the DPRs for seven southern districts in October 2005. REC did not consider the revised DPRs submitted by KSEB upto 2008 and then it was shifted (June 2008) to second phase of the XI Plan. This delay in getting the projects approved by REC at the first instance in August 2005 was the most important factor that led to the delays in implementation of the scheme. There were further delays in the submission of DPRs. Chronology of events is given in **Annexure 15.**

KSEB's unsuccessful attempt to entrust the work of revision of DPRs to NTPC Electric Supply Company Limited (NESCL) (September 2006-September 2009) was another source of delay as NESCL withdrew due to its preoccupation with ongoing RGGVY projects of various States. During this period (2005-2009), KSEB executed some of the works proposed earlier under the Scheme in the six northern districts. Hence fresh DPRs had to be submitted for these six northern districts between September and October 2009 which was sanctioned in March 2010 at a total project cost of ₹ 114.57 crore. Similarly, in respect of seven southern districts, revised proposals were submitted (between September 2010 and May 2011) after a gap of five years from the original proposal (2005). REC approved the revised DPRs in December 2011 and February 2012 at a project cost of ₹ 89.83 crore.

Though the Scheme stipulated four components[26], KSEB mainly focused on two components (VEI and household electrification) ignoring the remaining two components (REDB and DDG).

KSEB replied (January 2014) that there was no specific direction in the guidelines regarding preparation of district wise scheme. It was also stated that the delay was due to the reasons beyond the control of KSEB. After consultations with REC, the final proposal under DDG package was submitted during March 2013. The reply was not acceptable as there were specific directions to prepare DPR district wise. Further, KSEB prepared DPRs that were not in accordance with guidelines and submitted DPRs for DDG belatedly which had resulted in delay in implementation of the Scheme.

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[26] REDB, VEI, DDG and Household electrification

Audit test checked three northern districts (Kozhikode, Malappuram, and Wayanad) where REC had approved the projects in March 2010. Audit noticed that Dy. CEs failed to conduct the detailed survey, as envisaged in the REC guidelines. Instead, they opted for the easy way of compiling information collected from various Section Offices under them. As a result, the actual infrastructure requirement was much more in some 'karas[27]' than what was projected in the DPRs.

KSEB replied that as some of the works proposed earlier had been executed under other Scheme like Normal development, Voltage Improvement Scheme, etc., re-survey has been conducted to find out new households to be electrified which necessitated additional infrastructure in some karas. The reply does not hold good as requirement of increased quantum of materials for infrastructure indicated absence of proper survey at the time of preparing original DPRs.

3.2.7.6 Inadequate coverage of beneficiaries

As against 12.40 lakh unelectrified households which existed[28] (2005) in the 14 districts in the State, KSEB proposed electrification of 4.68 lakh (38 per cent) households only under the Scheme which shows that 62 per cent households would remain without power connection.

In respect of the seven districts in phase I and II, electrification was proposed for 2.27 lakh households only as against 5.05 lakh households identified. Thus, KSEB had targeted only about 50 per cent of the target group. To justify the inadequate coverage in these districts, Chairman, KSEB informed (August 2006) REC that the remaining households would be electrified in future.

KSEB justified (January 2014) inadequate coverage stating that the proposal was restricted so as to adhere to the REC stipulations viz,

- VEI was for electrification of 100 household per village and
- the benchmark cost fixed for VEI was ₹ four lakh in normal terrain and ₹ six to eight lakh in hilly terrain.

The reply was not acceptable as KSEB failed to consider all unelectrified RHHs in the proposal submitted to REC. Further, all the projects in Kerala were sanctioned above the bench marked limits.

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[27] A small area in a village is referred as 'Kara'

[28] As per the report of Accelerated Rural Electrification project – 2005.

3.2.7.7. Exclusion of Scheduled Tribe beneficiaries

Audit noticed that KSEB omitted 91 beneficiaries in four Scheduled Tribe(ST) Colonies[29] in Malappuram district in the revised DPR submitted to the REC, the estimated cost of which worked out to ₹50.30 lakh.

KSEB replied (January 2014) that the four ST colonies were included in the sanctioned scheme. Further, some of the beneficiaries had already remitted the OYEC charge[30] and service connections were effected to these beneficiaries. The reply does not hold good as KSEB omitted these beneficiaries in the revised DPRs and from the reply it is evident that some beneficiaries were forced to remit connection charges to get electricity due to non-inclusion of these beneficiaries under Scheme.

Delay in Tendering and awarding of works

3.2.7.8 Due to various delays/issues in the tendering process, KSEB took 16 months to award the work in Phase I and 66 months to award the works in Phase II, which were approved by REC in August 2005. REC permitted KSEB for direct execution for the Phase III in September 2012. Audit noticed delays in every stage of tendering and award of contract as shown in ***Annexure 16***.

For the projects in the six northern districts (Phase II) approved by REC in March 2010 at a total project cost of ₹ 114.57 crore, the Full Board immediately accorded (March 2010) sanction for implementation of the Scheme and to invite turnkey tenders for the six northern districts. Accordingly, the Chief Engineer (TC & M) invited (April 2010 to August 2010) turnkey tenders. Lowest quoted rates for the component VEI works ranged from 1.64 per cent to 15.59 per cent below Probable Amount of Contract (PAC)

Though the Chief Engineer (TC & M) issued work orders between August 2010 and March 2011 ***(Annexure 17)***, none of the works under the VEI component were completed within the stipulated period. The average progress (March 2013) was 38 per cent in respect of infrastructure creation and 68 per cent in respect of electrification of households.

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[29] Kodumpuzha, Nelliyayi, Kureeri and Mankulam.

[30] Own your electric connection.

KSEB replied that the delay was due to reasons beyond their control and executions of work are expected to be completed on 31 January 2014. However, the fact remains that the Scheme could not be implemented within the stipulated time.

Execution of work

3.2.7.9 Audit examined the component-wise execution of the Scheme in Phase I, II and III and it was observed that there was abnormal delay and the work was completed in one district only after a delay of more than three years. Though the electrification of 1274 villages was targeted, 37 villages in Idukki district alone were electrified during the period 2007-2010. The component-wise audit findings in respect of the three phases are given below:

3.2.7.10 Rural Electricity Distribution Backbone

REDB component of the Scheme was intended for establishment of new/augmentation of existing 33/11 KV (or 66/11 KV) substations of adequate capacity and lines to strengthen the electricity supply backbone in blocks where these facilities did not exist. KSEB's original proposal (2005) for construction of 25 substations of both capacities in 10 districts was rejected by REC as the proposals were for constructing new substations in blocks where these facilities already existed. Later, KSEB submitted the revised proposal (September 2009 to May 2011) for construction of only four substations in four districts under component 1 and REC sanctioned the same for ₹ 16.45 crore. This was very negligible (7 per cent) compared to the total sanctioned cost (₹ 224.35 crore) of the project. Thus, the State lost an opportunity to develop a robust electrical transmission backbone for rural areas at the cost of GoI. Among the four projects sanctioned[31] for construction of 66/11 KV Substations/enhancement of 33 KV Substations, only one project (Malappuram) has been started and even this project is badly delayed.

KSEB replied that REC sanctioned only three REDB works and the other projects were rejected by REC as the substations were proposed in the Block where the facility already existed. REDB work at Wayanad, Palakkad, Malappuram and

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[31] Malappuram, Wayanad, Palakkad and Ernakulam.

Ernakulam are expected to be completed before 31 March 2014. The reply was not acceptable as KSEB did not explore the chances to include more number of blocks where there were no substations in the REDB proposals by analysing proper block wise requirement of substations. Further on a test check, Audit observed that KSEB omitted to include two substations[32] proposals which were eligible for capital subsidy under the Scheme as brought out in subsequent paragraph **(3.2.7.19)**.

Progress of the Malappuram REDB Project

The sanctioned cost for Malappuram was ₹7.16 crore. The work was awarded (August 2011) to the lone bidder, Aster Pvt. Ltd., Hyderabad at the quoted rate of ₹ 8.27 crore and scheduled for completion within 12 months i.e. by August 2012. Even after a lapse of 19 months from the date of award, the land development has not been completed (December 2013). Dy. CE, Transmission Circle, Malappuram who was responsible for the implementation of the project failed to take suitable action for ensuring timely completion of the work.

KSEB replied that it had proposed construction of 66/11 KV substation and 66 KV DC line in the DPR. During the Load Flow Study at the period of sanction it was found that the Substation and Line with 110 KV parameter was viable at that area. Hence, Board requested REC to issue approval for the construction of Substation and Line with 110 KV parameter. After obtaining sanction from REC, turnkey tenders were invited and work was awarded. This process had taken time and consequently the project got delayed. The reply was not tenable as KSEB cannot escape the responsibility of preparing a faulty DPR.

3.2.7.11 Village Electrification Infrastructure

Village Electrification Infrastructure (VEI) component of the Scheme was intended for constructing 11 KV lines and single and three phase lines with provision of distribution transformers of appropriate capacity to support electrification of unelectrified villages and habitations. The requirement of Distribution Transformer was to be fixed as per the ground requirements and keeping voltage regulations within the permissible limits. Audit noticed the following issues in the implementation of VEI component.

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[32] Thodannur Block and Tanur Block

Phase I – Idukki district

KSEB awarded (January 2007) the work of VEI in Idukki district to ICSA India Ltd., Hyderabad on turnkey basis for ₹ 17.65 crore (19.45 *per cent* above PAC of ₹ 14.78 crore). The LoA stipulated that the execution of work shall be done in such a manner so as to complete the erection, testing and commissioning of the entire work within 18 months from the date of issue of LoA. Thus, the entire work was to be completed by June 2008. The work was, however, completed after a delay of 24 months in June 2010 at a cost of ₹ 20.41 crore.

Audit observed that while preparing the initial DPR, KSEB limited the length of LT line to be drawn under the Scheme to one kilo meter per kara, whereas there was no such condition stipulated in the Scheme guidelines. During execution, KSEB noticed that the length proposed in the DPR was not sufficient for electrification of all the scattered BPL households in the district. Hence KSEB had to draw LT lines beyond one kilometer which necessitated revision of DPR enhancing the cost to ₹19.95 crore. This resulted in delay of two years from the stipulated date in completion of the project.

KSEB admitted (January 2014) that there was no such mandatory condition in the guidelines. The lack of proper study while preparing DPR led to the delay and cost overrun.

Phase II – Six northern districts

Technical flaws in project formulation

KSEB has been following the standard practice of using Aluminium Conductor Steel Reinforced (ACSR) Raccoon conductor for 11 KV line works. In the RGGVY works, however, ACSR Rabbit conductors were used for 11 KV line works (except for Kasargode District). The cost of Raccoon and Rabbit conductors per km was ₹ 58,500 and ₹ 39,600 respectively. As the network created under the Scheme was to be ultimately interlinked to KSEB network, usage of Rabbit conductors would result in higher distribution losses and compatibility issues as pointed by the Chief Engineer (North). Hence, the segment of 11 KV lines drawn with Rabbit conductor will have to be replaced with Raccoon conductor which may result in additional financial burden on KSEB. A test check of three districts[33] revealed that KSEB erected (March 2013) 514.80 kms of rabbit conductors in 11 KV lines.

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[33] Kozhikode, Malappuram and Wayanad

KSEB replied that selection of conductors depended on the prevailing load conditions. However, in Kasargode District ACSR Raccoon conductors for 11 KV line works were used by KSEB in similar conditions.

Phase III – Seven southern districts

In respect of the seven southern districts, REC approved (during December 2011/February 2012) the DPRs for a project cost of ₹72.89 crore and permitted (September 2012) KSEB to execute the works departmentally fixing one year time for completion. REC released (January/February 2013) ₹25.62 crore towards first instalment. KSEB had not completed the works till date (January 2014).

3.2.7.12 Decentralised Distributed Generation and supply

DDG (Component 4) intended supply of energy from non- conventional sources for villages where grid connectivity was either not feasible or not cost effective. But KSEB did not propose any such projects. Thus there were no DDG projects in Kerala.

Later, KSEB identified such areas and submitted proposals for 17 DDG projects in Palakkad and Wayanad districts targeting 870 beneficiaries with a project cost of ₹ 24.25 crore during December 2012 to March 2013 to REC. Approval of these projects was awaited (March 2013).

In Idukki District, KSEB could not electrify two villages under VEI component due to forest clearance issues. KSEB could have proposed these two villages under DDG component of the scheme in order to achieve the objectives of the scheme.

KSEB replied that steps were taken for submitting proposal under DDG packages. After investigation and analysis, it was found that only Special Purpose Vehicle (SPV) projects are viable in the identified remote areas far away from the grid connectivity. As per the guidelines for DDG projects, area having population more than 100 could be considered for the proposal. After consultation with REC, the final proposal has been submitted to REC during March 2013. Reply was not acceptable as KSEB should have done this study in advance in a time bound manner.

3.2.7.13 Household connections

The Scheme envisaged electrification of unelectrified BPL Households in all rural habitations with 100 *per cent* capital subsidy. Households above poverty line would pay for their connections at prescribed connection charges. On completion of the project (June 2010) 17238 service connections were provided in Idukki district (Phase I). Audit, however, noticed that 2821 BPL households still remain to be electrified. In the six northern districts (Phase II) KSEB provided 37904 service connections as of March 2013 against the target of 55965 households.

KSEB replied that electrification of unelectrified BPL households in Idukki district will be proposed in the second phase of the scheme. The six northern district schemes have execution period upto 31 March 2014 and all the targeted BPL connections will be effected within this period.

Management of Rural distribution system

3.2.7.14 As per the Scheme guidelines and tripartite agreement executed among KSEB, GoK and REC, KSEB had to deploy non-Governmental Organisations (NGOs), Users association, Panchayath institutions, co-operatives or individual entrepreneurs as franchisee for the management of rural distribution to make the system revenue sustainable by reducing the Aggregate Technical and Commercial losses (AT &C losses). It envisages Bulk Supply of power to the franchisee relieving KSEB of the responsibilities of feeder maintenance, meter reading, billing, revenue collection, etc. KSEB, diluting the above provisions, engaged "kudumbasree units,"[34] self-help groups, as franchisee for meter reading work alone in Idukki district, while ignoring all other aspects of the management.

Even this did not materialise as the Hon'ble High Court of Kerala directed (June 2011) that qualified persons be engaged for the work. KSEB, however, failed to deploy franchisees so far (March 2013) which would entail conversion of the project subsidy of ₹16.37[35] crore into loan.

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[34] Kudumbasree is one of the largest women empowerment projects in the state of Kerala. Kudumbasree units undertakes collective works such as micro enterprises, lease and farming, cleaning of public places, collection of garbage etc, through concerned community action under the leadership of Local Self Governments.

[35] 90% of ₹18.19 crore (Idukki district).

In the Full Time Members meeting held in February 2013, KSEB decided to take up the matter with GoK to exempt the introduction of franchisee system.

KSEB replied that as per the existing distribution system, deployment of franchisee was not viable and the matter had been taken up with Government of India and REC.

3.2.7.15 Project Monitoring

GoK constituted (June 2008) District Level Co-ordination Committee (DLCC) and (December 2008) State Level Co-ordination Committee (SLCC) for monitoring and ensuring the smooth execution of the Scheme. The above Committees were to meet once in every month to resolve the bottlenecks and constraints such as delay in receipts of forest clearance, identification of beneficiaries etc. Audit noticed that SLCC held only three meetings during entire period of the Scheme. As regards DLCC, meetings held ranged between one and eleven[36] in selected district. Thus the Committees failed to meet regularly to resolve the bottlenecks.

The failure to conduct regular meetings of the Committees to sort out issues regarding forest clearance, etc., contributed to non-electrification of some colonies in Idukki, Wayanad and Malappuram districts for want of forest clearance. KSEB replied that SLCC was headed by the Chief Secretary and not under KSEB's Control. The reply was not acceptable as KSEB failed to convene regular meetings of various Committees for monitoring and smooth implementation of the Scheme. Further, in respect of SLCC, KSEB could have requested the Chief Secretary to convene regular meetings for the effective implementation of the Scheme.

General Deficiencies in Project Implementation

3.2.7.16 Failure to levy liquidated damages in Wayanad District

The Deputy Chief Engineer, Electrical Circle, Kalpetta did not recover liquidated damages[37] of ₹ 51.36 lakh from the contractor[38] of Wayanad district though the works were not completed within the stipulated time. On this being pointed out by Audit in December 2012, ₹ 13.40 lakh was recovered from the contractor and the balance amount was stated to be recovered from his subsequent bills.

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[36] Kasargode-8, Kannur-11, Kozhikode-4, Malappuram-1, Palakkad-5 and Wayanad-4.

[37] Liquidated damages – a sum of 0.5 per cent of the contract price for each calendar week of delay or part thereof subject to a maximum of 5 per cent of the contract value.

[38] Aravalli Infra Power Limited, New Delhi.

KSEB replied that REC had extended the execution period up to September 2013. Hence KSEB also extended the execution period accordingly and penalty recovered was refunded. The reply was not acceptable as the extended time allowed by the REC to KSEB should not have related with contract conditions. Refund of liquidated damages to the Contractor in spite of poor implementation of the project lacked justification.

3.2.7.17 Failure to recover Labour Welfare Cess[39] from the Contractor

As per section 3(1) of the Building and Other Construction Workers Welfare Cess Act 1996, labour welfare cess at the rate of one per cent of the cost of works from the contractor's bill was to be recovered by the employer. In Idukki district, Dy. CE, Electrical Circle, Thodupuzha failed to recover ₹ 0.16 crore while releasing payments of ₹ 16.21 crore to the contractor.

KSEB replied (January 2014) that recovery of Building and other Construction Workers Welfare Cess was not applicable as there was no new construction of building. In Kerala, there was only intensive electrification in the existing electrified villages, which envisaged extension of existing infrastructure and not the creation of new distribution network. The reply was not acceptable as recovery of the cess from the contractor's bill was mandatory and the same was recovered in Wayanad district.

Impact

3.2.7.18 Inadequate coverage of the target group and not covering public places

As against 12.40 lakh unelectrified households existed (2005) in the State, the original proposal was to cover only 4.68 lakh households. There was no proposal for electrifying public places though envisaged in the Scheme.

While accepting the audit observations, KSEB replied that the DPRs were prepared in consultation with the local authorities. Infrastructure required would be provided to those public places as per their request. However, the facts remain that capital subsidy for these works would not be available as those works are not part of the DPR and public places like schools, Panchayath offices, Government health centres, etc., remain unelectrified.

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[39] Labour welfare cess @ 1 per cent of the cost of works from the contractor's bill.

3.2.7.19 Loss of capital subsidy

Failure of KSEB to include all the requirements for setting up infrastructure in the original DPRs and execution of works from KSEB's own funds in anticipation of sanction from REC resulted in loss of capital subsidy of ₹ 46.30 crore as shown below:

Table 3.2.4: Details of reasons for loss of capital subsidy *(₹ in crore)*

	Loss of capital subsidy due to:	**Amount**
1	Departmental execution of works and exclusion of substations in the DPR[40]	14.45
2	Failure to include VEI works in the DPRs of six northern districts	29.85
3	Rejection of increase in cost due to additional quantities (Idukki district)	2.00
	Total	**46.30**

Detailed audit observations are as under :

- As the implementation of the Scheme was delayed, KSEB had to execute (2006-07 to 2009-10) many of the works under normal developmental works during the period between the earlier sanction and preparation of revised DPR in anticipation of sanction from REC. KSEB incurred ₹ 11.69 crore on this account during 2006-07 thereby losing capital subsidy of ₹ 10.52[41] crore.

- KSEB proposed the work of augmentation of a Sub Station at Thodannur Block and construction of one Sub Station at Tanur Block costing ₹ 4.37 crore with its own funds. Failure of KSEB in identifying and including these works under RGGVY resulted in forgoing of capital subsidy of ₹ 3.93[42] crore.

- KSEB awarded (August 2010 to March 2011) the VEI works in six northern districts on turnkey basis at a total contract price of ₹ 82.09 crore.

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[40] Due to execution of work under its own fund as normal development works- ₹ 10.52 +₹ 3.93. augmentation/construction of Sub Station at Thodannur and Tanur.

[41] 90 *per cent* of ₹11.69 crore

[42] 90 *per cent* of ₹4.37 crore

Subsequently, based on joint survey with the contractor, KSEB enhanced the contract price from ₹ 82.09 crore to ₹ 115.26 crore and submitted (July 2012) the same to REC for approval. REC, however, did not approve the revised estimate stating that no quantity variation would be allowed as per the Scheme. Full Board of KSEB decided (March 2013) to bear the additional cost of ₹ 33.17 crore which resulted in loss of subsidy of ₹ 29.85 crore[43].

- KSEB incurred an expenditure of ₹20.41 crore for implementing the Scheme in Idukki district. Out of this, ₹2.22 crore, was on account of rate revision granted for extra quantities and was rejected by REC. As a result a capital subsidy of ₹ two[44] crore (90 *per cent*) was lost.

KSEB stated (January 2013) that (a) the implementation of the Scheme was delayed as GoI had neither accorded sanction for execution of the projects at the quoted rates nor permitted execution of the works departmentally. They had therefore to be got finally executed departmentally; (b) for augmentation/ construction of substations, REC would not sanction proposal for substation in the Revenue Block where substation already exists; (c) enhancement in contract price was necessitated due to the peculiar terrain conditions and scattered households and (d) rate revision in Idukki scheme was necessitated as estimates were prepared during April 2005 based on then existing rate and rate revision was warranted due to increase in cost of material.

The reply of KSEB that REC would not sanction proposal for substation where it already exists was factually incorrect as both the revenue blocks had no sub stations at the time of proposal. Similarly, enhancement of contract price for VEI works in six northern districts and rate revision in Idukki scheme could have been avoided had the estimates were properly prepared.

Conclusion

- RGGVY, launched in April 2005 had envisaged providing electric connections to all RHHs and to BPL households free of charge within a period of five years. However, the Scheme could be implemented only in

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[43] 90 per cent of ₹ 33.17 crore.

[44] 90 *per cent of* ₹ 2.22 crore.

Idukki district till date (March 2013). The deficiencies in DPRs contributed to delay in implementation.

- There was a loss of capital subsidy of ₹46.30 crore due to departmental execution of work, exclusion of substations in the DPRs and rejection of increase in cost due to additional quantities.
- Electrification of public places as envisaged in the Scheme was not taken up in the State and they were deprived of the benefits of the Scheme.
- There was delay in identifying villages for supply of energy from non-conventional sources where grid connectivity was not feasible.
- Lackadaisical manner in execution led to poor coverage of villages under the Scheme.

[Audit Paragraph 3.2.1 to 3.2.7.19 contained in the Report of the Comptroller and Auditor General of India for the year ended 31st March 2013]

Notes furnished by Government on audit paragraph is given in Appendix-II.

Discussion and Findings of the Committee

With regard to undue delay in finalization of the process of bidding under case I for purchase of power on medium term basis and failure to follow CERC Regulations by KSEBL which resulted in extra expenditure of ₹ 244.07 crore, the Committee expressed dissatisfaction over the reply furnished by the Power Department that no intentional delay occurred in the finalization of the tender.

The witness replied that even though the bidding guidelines were issued by State Electricity Regulatory Commission in 2009 and KSEBL started bidding process; due to amendments in standard bidding guidelines effected by Ministry of Power in 2010, KSEBL was able to invite tenders only in 2011 and finalize it in 2013.

The Committee noted that the Bidding Guidelines were enforced in 2005 and amended in 2010, KSEBL came to this process years after and criticized that officials of KSEBL were unaware of these matters. The Committee observed that lack of timely action from the part of KSEBL resulted in the delay in finalization of the tender.

The Committee demanded an explanation regarding the violation of CERC guidelines for bidding in 2009 which led to an extra expenditure of ₹ 244.07 crore.

The KSEB Official explained that, as per established norms of CERC, medium term tenders were invited for 5 year period and first preference was given for tenders of longer periods. Moreover for longer terms of power procurement, rates tended to be cheaper. The witness further added that KSEBL faced a dearth of transmission corridors for power transmission at that time and hence the Board decided to opt for 5 year tender in order to obtain allocation of transmission corridors.

The witness explained further that even though adequate power was available, power corridor was an important factor and as it was not available at that time the Board was compelled to purchase power from exchange at a higher rate. It was also a major hindrance that the major portion of the power transmitted to the state through power corridors of Tamil Nadu were procured by them.

The Committee enquired whether KSEBL had not booked power corridors in advance. The witness clarified that power corridors could be booked in advance but only through short-term tenders.

The Committee in this connection sought to be informed about the possibility of disturbances in the existing power corridors. The witness explained that in 2009-10, several private companies had set up gas-based plants in the Himagiri-Vijayawada Sector leading to congestion in that corridor and difficulties in transmission of power. This congestion in the power corridors led to delay in getting tenders and the Board had to purchase electricity at high rates of ₹ 7 to ₹ 10 for single unit from Kayamkulam Thermal Power Plant. Further the Board was able to avoid load-shedding only because electricity was purchased from outside sources.

The Committee enquired whether there were instances when the non-availability of power corridors led to non-receipt of CGS (Central Government Shares) by the Board. The witness replied in the negative. The witness further explained that KSEBL was unable to finalize the tender as it received only

2 bids and so it was decided also to retender as the stipulated minimum number of tender had to be 3 in case of finalization of power purchase. Likewise when TANGEDCO of Tamil Nadu invited tenders for five years they had received only single bid. Consequently, TANGEDCO executed power purchase agreement with the single bid at a tariff of ₹ 4.84 per KWL.

The Committee enquired about the system that prevails for peak hour purchase and the witness revealed that as such there was no particular system for peak hour purchase and it is being carried out as per the guidelines incorporated in Section 61, 62 and 63 of The Electricity Act, 2003.

The Committee noted that even though the Board opted for a long term tender it did not derive any economic benefit from it. The Committee enquired why the Board went for re-tender to get 3 bids despite receiving 2 bids in the first tender.

The witness stated that KSEBL was able to finalize the second tender only at rates of ₹ 4.49 and ₹ 4.45 which were lower compared to the rates at which TANGEDCO executed Power Purchase Agreement with single bid. Taking this into account the tender process was viewed as profitable to the Board. The KSEBL official explained alongwith that 3 years specification was for Medium Term Open Access (MTOA) but tender can be invited for 5 or 7 years and it is not limited to 3 years. The KSEBL official also stated that the observations of AG were on account of the erroneous assumption that the 3 year limitation was applicable to invite tender also in addition to Medium Term Open Access.

The AG official present informed the Committee that the reply being given at the moment was not submitted by the Board at the time of audit finalization. It was further stated that Open Access was available in 2012 and CERC norms came into existence in 2009 and were effective from 2010 onwards. He also pointed out that KSEBL invited tender only in April 2011 and when in the audit observation it was pointed out that KSEBL should have limited the term of tender to 3 years instead of 5 years they had not done so and further they had gone ahead with retender also, and was able to finalize it only in 2013. As a result power had to be purchased at a higher rate and there existed a difference in the rate of power purchased through the second tender and on the rate on open access. All these led to an extra expenditure of ₹ 244.07 crore.

The Committee did not view favourably the Government reply that getting open access to southern region was not an issue until August, 2011 and criticised the Board for not taking sufficient action to obtain open access during 2009-2011 leading to purchase of power at higher rate. The witness replied that there was a shortage of power corridors at that time and the Government of India allocated power corridors on a first come first serve basis to transmit power through the existing corridors and has to submit the details of power required by the State. Priority was also given to those who opt for longer periods of demand. KSEB was unable to satisfy these conditions.

The Committee sought explanation for KSEBL's non-utilisation of the Baitarani West Coal Block in Talcher Coal fields in Orissa allotted to the Board by the Government of India for electricity production within the state. The Committee also sought explanation for not taking decision on the mining process even after obtaining license for coal mining.

The KSEB official replied that the Baitarani Coal Block was jointly allocated to Gujarat, Odisha & Kerala in 2007. In 2014, Government of India de-allocated the Coal Block as the Monitoring Committee noticed that there was only a scant progress in mining and establishing a power plant. As a result, Kerala lost the allotted coal block. The witness also explained that the Board has been taking earnest efforts to reallocate the block and requested the Central Government in this regard. He added that if the Coal Block is re-allocated to the Board it has two options before it. The first option is to make use of the existing power generator by providing coal and avail electricity on payment basis and the second option is to set up a new generator at the coal mine area in Odisha and produce and transmit the generated electricity to the state.

The Committee enquired about the plan of KSEBL to set up a coal based thermal power plant with minimum environment pollution by using modern technology at Cheemeni in Kasaragod. The witness replied that the project has not been dropped. The Committee noted that eventhough availability of land was higher in Cheemeni, agitation from the side of the local people caused hindrance.

The Committee also discussed about the Kayamkulam and Koodamkulam Thermal power plants and also about how KSEB hoped to cope up with the crisis of peak deficit of power in future. The witness replied that NTPC has raised the rate of fixed charge for power from ₹ 207 crore to ₹ 299 crore and the Board has to pay this even if power is not procured from Kayamkulam Power Plant. The witness also pointed out that as energy has been converted for LNG terminal and if state government accepts the Power Purchase Agreement at higher rate GAIL is willing to extend their pipeline in the state. The witness also assured that KSEBL is putting all its efforts to provide power at lower rate.

Observations/Recommendations

1. The Committee criticises KSEBL for non materialisation of the power plant in Baitarani West Coal Block in Talcher coal fields in Odisha. The Committee wants to know the measures taken by KSEBL to re-allocate the Coal Block to Kerala.

2. The Committee wants a report on the present condition of the coal based Thermal power plant project proposed at Cheemeni, Kasargod and the reason for this project not materialising till date.

3. Considering the congestion in the power corridors, the Committee recommends that KSEBL should take necessary steps to satisfy the conditions of the Central Government for availing power corridors during highly power consuming months.

4. The Committee recommends that the Board should implement long term power plans within the state and coal based Inter state Projects and that this should be done in a time bound manner.

5. The Committee expresses its strong displeasure over the undue delay in finalisation of tender for medium term power and criticises the action of KSEBL in violating the CERC norms in the Power Purchase Plan, which necessitated retendering and further incurred an avoidable extra expenditure of ₹ 244.07 crore during the period from January 2012 to March 2013. The Committee opines that KSEB should avoid delay in processing bids for power purchases and urges to finalise tenders in time. It also recommends to abide by existing Regulations and Guidelines issued by MoP/CERC/KSERC during power purchases.

6. The Committee observes that actual purchase cost exceeded planned cost during 2008-2013 due to lack of proper planning. The Committee recommends that proper planning should be done by the Board for power purchase so as to ensure that the purchase cost of power never exceeds the planned cost. The Board should give priority to purchase power as per plan rather than through costly contingencies / Day Ahead Purchases.

7. The Committee criticises KSEBL for swapping power in 2011-12 when there was power deficit and without ensuring availability of corridor to return it. The Committee demands that the Board should resort to swap mechanism to supply power only after ascertaining the actual power position and the availability of sufficient power corridors for return of power in future.

8. The Committee wants a detailed report regarding KSEBL's long term Power Purchase Agreement (PPA) with the private firms KPCL and BKPL which resulted in purchase of power at comparatively high cost and the present position regarding renewal of this PPA.

9. The Committee recommends that KSEBL should take measures to collect CDM (Clean Development Mechanism) benefits accruing out of Carbon Credit from the Wind and Small Hydro Independent Power Producers. The Committee wants to be furnished with the details of action taken in this regard.

10. The Committee demands a detailed explanation on the extra expenditure of ₹ 163.96 crore incurred as a result of purchase of high cost power from traders by KSEBL during the period from July 2012 to March 2013 due to shortfall in supply of power from Central Generating Stations and consequent power restrictions through load shedding.

11. The Committee recommends that KSEBL should conduct scientific studies to determine optimum transmission and distribution loss targets so as to avoid mismatch in excess Transmission and Distribution losses between KSERC and KSEBL.

12. The Committee criticizes inadequacy of the Internal Audit wing of the Board for not conducting pre/post audit of power purchases which led to serious lapses such as payment towards the exchange rate variation on the loan component of ₹ 35 crore without producing any documentary evidence with KPCL and wants to know whether the remaining ₹ 5.90 crore receivable from Kasargod Power Corporation Ltd (KPCL) on account of claiming the exchange rate variation on the foreign loan component has been received. The Committee demands to furnish the details of action taken in this regard within one month.

13. The Committee recommends that the Internal Audit wing of KSEBL should conduct pre-audit of power purchase bills for payment and vetting of Draft Power Purchase Agreements (PPAs) so as to ensure that the financial interests of the Board are fully satisfied.

14. The Committee vehemently criticises KSEBL officials for deficient DPRs which were not in accordance with RGGVY/REC guidelines and points out that the extremely lethargic attitude of KSEBL in planning and execution of projects led to inordinate delay in the implementation of RGGVY Scheme in the state.

15. The Committee recommends to fix responsibility and take stringent disciplinary action against the officers of KSEBL responsible for preparing deficient DPRs, delay in planning and implementation of the Rajiv Gandhi Grameen Vidyuthikaran Yojana (RGGVY) envisaged for electrification of all rural households and BPL households free of charges within a period of five years from April 2005. The Committee also wants to be furnished with the present position of implementation of the Scheme.

16. The Committee criticises the lethargic attitude of KSEBL officials for the inadequate coverage of the beneficiaries of RGGVY and for non-inclusion of beneficiaries of four Scheduled Tribe colonies of Kodumpuzha, Nelliyayi, Kureeri and Mankulam in Malappuram District who were

forced to remit connection charges for electricity eventhough they were included in the RGGVY Scheme. The Committee demands an explanation in this regard.

17. The Committee wants to be furnished with a detailed explanation regarding the delay and related cost overrun of ₹ 5.63 crore (₹ 20.41 crore - ₹ 14.78 crore= ₹ 5.63 crore) that had occurred in the works related to Village Electrification Infrastructure (VEI) component of RGGVY Scheme in Idukki District and non implementation of the same within the stipulated period in other districts of the State.

18. The Committee wants to be furnished with the details of completion of electrification of unelectrified BPL house holds in rural habitations under the RGGVY Scheme in Idukki and in six northern districts.

19. The Committee criticises KSEBL for not levying liquidated damages of ₹51.36 lakh from the contractor, Wayanad District for not completing the work under the RGGVY Scheme within the stipulated time. The Committee demands an explanation on the refund of the penalty recovered for the liquidated damages to the said contractor. The Commitee recommends to effect the recovery of the penalty from the contractor at the earliest.

20. The Committee observes from the reply furnished by Government that ignorance of KSEBL officials about the provisions of the Building and other Construction Workers Welfare Cess Act, 1996 had led to failure in recovering Labour Welfare Cess from the contractor in Idukki District. The Committee wants to be informed of the details of legal opinion sought in this matter. The Committee also recommends to realize the Labour Welfare Cess from the contractor's bill.

21. The Committee demands explanation from KSEBL for not including the proposal for electrification of unelectrified public places like schools, panchayath offices, Government Health Centers, etc. in the DPR although it was envisaged in the RGGVY Scheme for electrification of unelectrified public places.

22. The Committee observes that due to non-compliance of RGGVY guidelines the projects were delayed/implemented under departmental execution works, which resulted in loss of central subsidy amounting to ₹ 46.30 crore. The Committee strongly recommends that guidelines of centrally sponsored schemes should be strictly followed by KSEBL.

C. DIVAKARAN,

Thiruvananthapuram,
17th July, 2019.

Chairman,
Committee on Public Undertakings.

APPENDIX I

SUMMARY OF MAIN CONCLUSIONS/RECOMMENDATIONS

Sl. No.	Para No.	Department concerned	Conclusions / Recommendations
1	2	3	4
1	1	Power	The Committee criticises KSEBL for non materialisation of the power plant in Baitarani West Coal Block in Talcher coal fields in Odisha. The Committee wants to know the measures taken by KSEBL to re-allocate the Coal Block to Kerala.
2	2	Power	The Committee wants a report on the present condition of the coal based Thermal power plant project proposed at Cheemeni, Kasargod and the reason for this project not materialising till date.
3	3	Power	Considering the congestion in the power corridors, the Committee recommends that KSEBL should take necessary steps to satisfy the conditions of the Central Government for availing power corridors during highly power consuming months.
4	4	Power	The Committee recommends that the Board should implement long term power plans within the state and coal based Inter State Projects and that this should be done in a time bound manner.
5	5	Power	The Committee expresses its strong displeasure over the undue delay in finalisation of tender for medium term power and criticises the action of KSEBL in violating the CERC norms in the Power Purchase Plan, which necessitated retendering and further incurred an avoidable extra expenditure of ₹ 244.07 crore during the period from January 2012 to March 2013. The Committee opines that KSEB should avoid delay

1	2	3	4
			in processing bids for power purchases and urges to finalise tenders in time. It also recommends to abide by existing Regulations and Guidelines issued by MoP/CERC/KSERC during power purchases.
6	6	Power	The Committee observes that actual purchase cost exceeded planned cost during 2008-2013 due to lack of proper planning. The Committee recommends that proper planning should be done by the Board for power purchase so as to ensure that the purchase cost of power never exceeds the planned cost. The Board should give priority to purchase power as per plan rather than through costly contingencies/ Day Ahead Purchases.
7	7	Power	The Committee criticises KSEBL for swapping power in 2011-12 when there was power deficit and without ensuring availability of corridor to return it. The Committee demands that the Board should resort to swap mechanism to supply power only after ascertaining the actual power position and the availability of sufficient power corridors for return of power in future.
8	8	Power	The Committee wants a detailed report regarding KSEBL's long term Power Purchase Agreement (PPA) with the private firms KPCL and BKPL which resulted in purchase of power at comparatively high cost and the present position regarding renewal of this PPA.
9	9	Power	The Committee recommends that KSEBL should take measures to collect CDM (Clean Development Mechanism) benefits accruing out of Carbon Credit from the Wind and Small Hydro Independent Power Producers. The Committee wants to be furnished with the details of action taken in this regard.

1	2	3	4
10	10	Power	The Committee demands a detailed explanation on the extra expenditure of ₹ 163.96 crore incurred as a result of purchase of high cost power from traders by KSEBL during the period from July 2012 to March 2013 due to shortfall in supply of power from Central Generating Stations and consequent power restrictions through load shedding.
11	11	Power	The Committee recommends that KSEBL should conduct scientific studies to determine optimum transmission and distribution loss targets so as to avoid mismatch in excess Transmission and Distribution losses between KSERC and KSEBL.
12	12	Power	The Committee criticizes inadequacy of the Internal Audit wing of the Board for not conducting pre/post audit of power purchases which led to serious lapses such as payment towards the exchange rate variation on the loan component of ₹ 35 crore without producing any documentary evidence with KPCL and wants to know whether the remaining ₹ 5.90 crore receivable from Kasargod Power Corporation Ltd. (KPCL) on account of claiming the exchange rate variation on the foreign loan component has been received. The Committee demands to furnish the details of action taken in this regard within one month.
13	13	Power	The Committee recommends that the Internal Audit wing of KSEBL should conduct pre-audit of power purchase bills for payment and vetting of Draft Power Purchase Agreements (PPAs) so as to ensure that the financial interests of the Board are fully satisfied.

1	2	3	4
14	14	Power	The Committee vehemently criticises KSEBL officials for deficient DPRs which were not in accordance with RGGVY/REC guidelines and points out that the extremely lethargic attitude of KSEBL in planning and execution of projects led to inordinate delay in the implementation of RGGVY Scheme in the state.
15	15	Power	The Committee recommends to fix responsibility and take stringent disciplinary action against the officers of KSEBL responsible for preparing deficient DPRs, delay in planning and implementation of the Rajiv Gandhi Grameen Vidyuthikaran Yojana (RGGVY) envisaged for electrification of all rural households and BPL households free of charges within a period of five years from April 2005. The Committee also wants to be furnished with the present position of implementation of the Scheme.
16	16	Power	The Committee criticises the lethargic attitude of KSEBL officials for the inadequate coverage of the beneficiaries of RGGVY and for non-inclusion of beneficiaries of four Scheduled Tribe colonies of Kodumpuzha, Nelliyayi, Kureeri and Mankulam in Malappuram District who were forced to remit connection charges for electricity eventhough they were included in the RGGVY Scheme. The Committee demands an explanation in this regard.
17	17	Power	The Committee wants to be furnished with a detailed explanation regarding the delay and related cost overrun of ₹ 5.63 crore (₹ 20.41 crore-₹ 14.78 crores= ₹ 5.63 crore) that had occurred in the works related to Village Electrification Infrastructure (VEI) component of RGGVY Scheme in Idukki District and non implementation of the same within the stipulated period in other districts of the State.

1	2	3	4
18	18	Power	The Committee wants to be furnished with the details of completion of electrification of unelectrified BPL house holds in rural habitations under the RGGVY Scheme in Idukki and in six northern districts.
19	19	Power	The Committee criticises KSEBL for not levying liquidated damages of ₹ 51.36 lakh from the contractor, Wayanad District for not completing the work under the RGGVY Scheme within the stipulated time. The Committee demands an explanation on the refund of the penalty recovered for the liquidated damages to the said contractor. The Commitee recommends to effect the recovery of the penalty from the contractor at the earliest.
20	20	Power	The Committee observes from the reply furnished by Government that ignorance of KSEBL officials about the provisions of the Building and other Construction Workers Welfare Cess Act, 1996 had led to failure in recovering Labour Welfare Cess from the contractor in Idukki District. The Committee wants to be informed of the details of legal opinion sought in this matter. The Committee also recommends to realize the Labour Welfare Cess from the contractor's bill.
21	21	Power	The Committee demands explanation from KSEBL for not including the proposal for electrification of unelectrified public places like schools, panchayath offices, Government Health Centers, etc. in the DPR although it was envisaged in the RGGVY Scheme for electrification of unelectrified public places.

14-07/19

1	2	3	4
22	22	Power	The Committee observes that due to non-compliance of RGGVY guidelines the projects were delayed/ implemented under departmental execution works, which resulted in loss of central subsidy amounting to ₹ 46.30 crore. The Committee strongly recommends that guidelines of centrally sponsored schemes should be strictly followed by KSEBL.

APPENDIX-II

NOTES FURNISHED BY GOVERNMENT ON THE AUDIT PARAGRAPHS

PARA. NO.	OBSERVATIONS	ACTION TAKEN BY GOVERNMENT
3.1.1,		3.1.1 to 3.1.6 Introduction, hence no comments.
3.1.2,		
3.1.3,		
3.1.4,		
3.1.5,		
3.1.6		

3.1.7.1		It may be noted that the figures mentioned by the Audit viz., 16,069 MU

in 2008-09 and 20,245 MU in 2012-13 are not the quantum of power purchased from various sources such as CGS, IPPs, Power Exchanges, Unscheduled Interchange (UI) and Traders. It refers to the total consumption during the period which includes KSEB's own generation and purchase from various sources.

It is admitted that KSEB could not add sufficient installed capacity as planned to meet the peak demand. It may be noted that eventhough KSEB had planned to establish hydro projects such as Silent Valley, Mananthavady, Pooyamkutty, Athirapally, Pathrakadavu etc., it could not be materialised due to severe environmental issues, land acquisition problems, forest clearance and hence the expected addition in installed capacity could not take place. Also setting up of a coal based or nuclear power plant in the thickly populated State is difficult. The year 2012-13 was declared as drought year, since the State received the worst rain fall. It was planned to schedule about 7000 MU hydel power during the year whereas the actual generation was only 4800 MU. Availability of coal in CGS, severe congestion in transmission corridor to Southern Region and the scheduled and unscheduled plant shutdowns contributed to short supply of power from Central Generating Stations.

Thus the failure of monsoon, which is further compounded by the congestion in southern transmission corridor and outages in CGS made it very difficult for KSEB to meet the system demand during the period, which in turn forced KSEB to purchase power from various sources such as IPPs, Power Exchanges, Unscheduled Interchange (UI) and Traders. It may kindly be noted that these factors are beyond the control of KSEB

3.1.7.2		As pointed out earlier, KSEB could not add sufficient installed capacity of hydel generating stations as planned due to the severe environmental issues, land acquisition problems, forest clearance etc. The hydel projects at Silent Valley, Mananthavady, Pooyamkutty, Athirapally and Pathrakadavu are some of them. The increase in price of crude oil in international markets led to increase in cost of power from existing liquid fuel stations. Laying of pipeline from Kochi to Kayamkulam has not materialised even now which acts as a bottleneck in the conversion of fuel at Rajiv Gandhi Combined Cycle Power Plant (RGCCPP). These factors are beyond the control of KSEB. The statement in the Audit Report that the Baitarni coal block was deallocated since the power plant did not materialise is not correct. The coal block was allocated jointly to Kerala, Odisha and Gujarat, of which the lead role was played by Odisha. Since the Empowered Committee constituted for monitoring the development works of coal block noticed that the development of mine was not progressing as expected, the coal block was de-allocated. It may be noted that the delay in land acquisition process of the coal mine area by the Government of Odisha has led to the de-allocation of coal block. It may also be noted that KSEB is still trying to

		get the coal block re-allocated and is putting in earnest efforts to set up a coal based power plant in the 1000 acres of land available at Cheemeni in Kasargod. But due to various reasons like local protest it is not yet commenced. KSEB is also trying to tie up with NTPC to set up a power plant outside the State if local protest continues.

3.1.7.3		Electricity Act, 2003 came into force in June 2003 repealing the Electricity (Supply) Act, 1948, Indian Electricity act, 1910 and Electricity Regulatory Commissions Act, 1998. According to Section 63 of the Act, Ministry of Power, Government of India had issued Guidelines for the long term and medium term procurement of Power by Distribution Licensees through Bidding Process on 19th January 2005. Based on the guidelines, Standard Bidding Documents for the medium term and long term power procurement were published on 27th March 2009, which were further amended on 22nd July 2010. As power procurement through competitive bidding process (Case 1 bidding process) was a new methodology formulated by MoP, distribution utilities including KSEB were not having sufficient expertise / experience in the procedures. KSEB and TANGEDCO proceeded for power procurement for medium term (5 years) in line with the MoP guidelines. KSEB had invited tender for procurement of 400 MW (300 MW RTC and 100 MW peak power) on 11-04-2011 for which only two bids were received for a total quantum of 240 MW. Subsequently, Board decided to retender due to the dearth of competitive bids. At the same time TANGEDCO (Tamil Nadu) invited tender for 450 MW RTC power on 10-06-2011, for which only a single bidder turned up with offer to supply 100 MW only at a levellised tariff of Rs. 4.8841 per kWh. Unlike KSEB, TANGEDCO decided to execute PPA with the lone bidder for 100 MW. Though they applied for Medium Term Open Access (MTOA) during January 2012, March 2012 and May 2012, they got MTOA only with effect from June 2013. From these facts, it is evident that lack of response from generators was not due to fixation of period of power procurement as five years, but might be due to the non availability of sufficient generation capacity in the power market. It is also clear that corridor for MTOA during the

period from January 2012 to May 2013 was already exhausted as the entire Available Transfer Capacity (ATC) was allocated prior to January 2012.

1. Since 2009, many projects like Cheemeni (2400 MW), LNG Petronet (1200 MW) and Brahmapuram gas plant (1026 MW) were under active consideration of KSEB for capacity addition, which would reflect in the Load Generation Balance, bid consideration period and quantum. It was anticipated that these projects would be materialized by 2017-18 and after that there would not be any further requirement for purchasing power. Hence the period of procurement of power was fixed as 5 years.

2. KSEB was fully aware that the maximum period for which MTOA can be applied as per open access regulation is three years. Still KSEB specified five years as the period of power procurement in the bid document since as per MoP guidelines dated 19th January 2005, medium term power purchase can be done upto seven years. Also it was anticipated that there will not be any deficit in the power availability with the completion of projects stated above. Moreover, for longer term of power procurement, the rates will be better.

3. Even though as per CERC regulations the maximum period for which MTOA can be applied is 3 years, it can be renewed up to 5 years by giving fresh application after the expiry of 3 years MTOA or STOA can be applied for the balance period. This was clarified to the bidders during the pre bid meetings.

4. Due to the delay in commissioning the CGS stations and other IPPs and UMPPs in Southern Region like Koodamkulam, Simhadri, Krishnapattanam, Vallur etc. and inter regional / Interstate transmission lines by CTU, severe corridor congestion had started since 2012. As per CEA reports it was expected that Southern Region would be power surplus by 2011 with the commissioning of the above CGS Stations and UMPPs. Non materialization of capacity additions in Southern Region and delay in commissioning the inter regional / transmission lines by CTU were beyond the control of KSEB.

5. High rate in the exchange at that time was because of the constraints in corridor.

6. As regards the delay in finalisation of bid, it may be noted that KSEB had filed petition before the KSERC for approval of Case 1 bidding document on 17-12-2009. In the meantime, Ministry of Power (MoP) issued revised Standard Bidding Documents on 22-07-2010, which necessitated KSEB to incorporate amendments in the tender documents and submit for the approval of the Regulatory Commission. The approval of the Commission was granted on 4th October 2010. The delay caused for getting the bid documents approved is beyond the control of KSEB Ltd. There occurred some delay in submitting the revised bidding procedure before KSERC as the entire bidding documents were required to be redrafted based on the discussions at various levels so as to make the document foolproof in every respect. As a result, KSEB could invite tender and finalise the entire process within five months.

Thus it is clear that no intentional delay was occurred in the finalization of tender invited for purchase of power on medium term basis under case I bidding.

3.1.7.4		Audit has pointed out that power purchased by Chief Engineer (Commercial & Tariff) has decreased from 94% in 2008-09 to 84% in 2012-13 with corresponding increase in procurement from contingency market. It appears that Audit came to this conclusion, considering the energy received from sources like IPPs, CGS, Short Term Contracts, Power Exchanges and Unscheduled Interchange. It may be noted that KSEB had contracted sufficient power for meeting its requirement in advance, but open access was not granted for the same which is beyond the control of KSEB. Getting Open Access to Southern Region was not an issue until August 2011. Most of the applications for Open Access received till that period were cleared without any curtailment. But the situation changed dramatically in September 2011. The generation projects in Southern Region were not commissioned as per schedule. The coal shortage in existing thermal stations and drastic reduction in gas availability at KG basin worsened the situation. This overturned the whole system. In short, from 2011-12 onwards, Open Access was granted only for a marginal portion of the contracted power and this might have lead to the Audit Observation. It may please be noted that KSEB has no control over grant of Open Access, or any of the reasons leading to it. It can be seen that KSEB had anticipated demand to a reasonable level of accuracy and contracted power to meet this requirement. In fact, KSEB had contracted more quantum, since the allocation will be only on prorata basis. But since there was corridor congestion, CTU / SRLDC did not grant open access for the contracted power, which forced KSEB to meet the demand from contingency market.

		As pointed out earlier, shortage of coal availability and scheduled and unscheduled outages in CGS, severe congestion in transmission corridor for evacuation of power to Southern Region in spite of tying up sufficient power and the failure of monsoon led to the decrease in purchases made by Chief Engineer (C&T) and increase in purchases made by CE (Tr. & SO). It may kindly be noted that all these factors are beyond the control of KSEB.

3.1.7.5		Audit has considered the predictions made in ARR & ERC filed for 2011-12 which was prepared based on available data as early as November 2010. Power System Planning is a dynamic activity. Initial forecast on Demand and Availability is made based on available data. (Report of the Electric Power Survey Committee constituted by Central Electricity Authority, historic data on demand and availability, anticipated generation addition etc). A large number of factors affect these predictions (e.g. delay in commissioning of a power plant or transmission line project in some other part of the country, early or delayed onset of monsoon / summer, unprecedented climate, or even a popular program being telecasted in television can make a considerable impact). Any variation from these predictions can and will severely upset the system and thus require dynamic correction to be made in original plan. Subsequently India Meteorological Department – IMD, predicted better rainfall during June to August 2011. Kerala Power System is highly dependent of hydrogeneration. Inflow during South – West monsoon plays an important role in Power System Planning. This aspect was not considered in the audit. The main observations in the Audit Para are analysed in detail below: KSEB had swapped power during the months June, July and Aug 2011, when there was peak deficit, deviating from Power Purchase Plan for 2011-12 • The observation of the Audit that KSEB had swapped peak power during the June 2011 is factually incorrect. KSEB had exported only non-peak power during June 2011 vide Power SWAP agreement No. 7/2011-12 dated 26-05-2011. • The observation of the Audit that there was peak deficit during July and August 2011 is also incorrect. Though Round the Clock (RTC) power was exported during these months, the actual availability (after export) was more than the demand. Load Restriction was not necessitated during these months. In other words, power swap had not adversely

affected the system management.

- Observation that KSEB had swapped power deviating from initial Power Purchase Plan for 2011-12 is correct; but the earlier plan was revised by the Board based on subsequent developments.

As per the earlier predictions (based on historical data) a total inflow of 3443.77 MU only was expected during June to August, 2011 (1st monsoon). But subsequently India Meteorological Department (IMD) predicted better rainfall and corrections were made accordingly on power system plan. As per the revised prediction many stations (having total capacity 800 MW) were expected under MUST RUN status in order to minimise the spill. Power demand (MW) during the night hours in these months will be usually very low (1000 to 1500 MW), out of which 850 to 900 MW was met by the share from Central Generating Stations. 80 to 85% of contracted power was required to be scheduled for avoiding payment of compensation. KSEB had to find market for the excess power available during low demand period (June to August), either by way of sale or banking (swap). Since Kerala required additional power during summer months, the best option to manage excess power during low demand period was swap.

Ex post facto analysis shows that the correction made in power system planning based on revised prediction (excess inflow during June – August) was correct. We could reduce the power generation from costly liquid fuel stations to the maximum and at the same time bank additional generation for summer use.

Month	Inflow (MU)		Hydro Gen (MU)		IPP Liquid Fuel (MU)		KSEB Liquid Fuel (MU)		Swap Exp (MU)
	Prediction	Actual	Prediction	Actual	Prediction	Actual	Prediction	Actual	
Jun 2011	705.38	1236.19	482.14	631.16	110.16	62.87	45.00	20.88	27.00
Jul 2011	1563.07	1318.66	503.03	623.44	62.77	6.28	46.50	9.49	73.92
Aug 2011	1175.32	1654.19	522.82	649.74	62.77	0.74	46.50	8.49	21.02
Variation	(+)765.27		(+)396.35		(-)166.26		(-)99.14		121.94

Even by optimising hydro generation, there was spill of 30.70 MU, 45.70 MU and 173.15 MU respectively in June, July and August 2011. Minimum

1417 MW (Aug). If the Board had not revised the strategy and increased hydro generation to the optimum level, it would have resulted in additional spillage (121.94 MU).

KSEB was expecting acute power shortage during summer and the cost of power in short term market was expected to be prohibitively high during that period. North and eastern states of India usually have a high demand from June to August. Banking of surplus power during monsoon and retrieving the same during summer was the best available option and KSEB was significantly benefitted by this strategy.

2. Imprudent decision of swap during June to August 2011 resulted in extra expenditure of Rs. 30.95 Cr.

- Remark of the Audit that swapping of power during June to Aug 2011 resulted in extra expenditure of Rs. 30.95 Cr. during Feb 2012 is misleading.

By swapping KSEB was utilising the hydro potential from excess inflow from the South-West monsoon during June to August to the maximum. If left unutilised it would have resulted only in spilling of reservoir. By ensuring maximum generation and banking the same, KSEB has not only saved the national resources, but also ensured that it would benefit the State of Kerala in future period, hopefully during the summer of 2012.

It is true that due to certain force majeure situations, corridor was not available for returning the power as per the original schedule. But finding of the Audit that KSEB was forced to purchase costly power during summer of 2012 due to swap appears to be unfunded. It may please be noted that none of the stakeholders (viz. KSEB, BRPL or GMRETL) were responsible for the unforeseen development and all parties are eager to conclude the contract. Purchase of costly power form short term market could be minimised with the energy returned as part of banking arrangement. All parties are willing to transfer the balance quantum. KSEB will be able to back down costly liquid fuel station or similar costly power when the return quantum is scheduled.

Observation of the Audit that Decision for swapping power was imprudent is also not correct.

When India Meteorological Department (IMD) revised their earlier prediction and forecasted better rainfall, KSEB reviewed its power management strategy. Many of its hydro stations were expected under MUST RUN status in order to minimise the spill. Demand (MW) during the night hours was expected in the range 1000 to 1500 MW only. 800 MW was expected from MUST RUN hydro stations in Kerala and 850 to 900 MW from Central Generating Stations. 80 to 85% of contracted power also was required to be scheduled for avoiding payment of compensation. KSEB had to find market for the excess power available during low demand period during June to August.

It may please be noted that, unit rate of power during monsoon is comparatively low and during summer is very high. Table below shows monthly rates (Rs./kWh) during the financial year 2010-11 and 2011-12.

Rate of power from Short Term Market

Month	2010-11 (Rs./kWh)	2011-12 (Rs./kWh)
April	7.25	6.51
May	7.02	4.91
June	4.21	4.25
July	4.42	4.07
Aug	4.43	4.43
Sep	3.5	4.73
Oct	4.34	6.00
Nov	3.72	5.02
Dec	3.40	5.17
Jan	3.43	4.95
Feb	4.74	7.27
Mar	6.68	6.87

By deciding to SWAP power, KSEB aimed to utilize the surplus and low cost power available during the monsoon and get the banked power back during summer at which the demand and rate of power would be comparatively high.

3.1.7.6		Considering the observations of the Audit team, it has been decided not to renew the PPA with KPCL which is due to expire on 31st May 2016. Since it is better to have standby alternatives in Kerala to mitigate the power crisis in case of a major outage of Central Generating Stations or non-availability of transmission corridor to Southern Region, Board has taken up with the State Government for Extension / Renewal of PPA of BSES Kerala Power Ltd for two years till supply of power through the long term contracts is operationalised. Accordingly Government have examined the matter in detail and accorded in-principle and conditional sanction for extending PPA between KSEB Limited and M/s. BKPL for the combined cycle power plant at Kochi for two more years, as per G. O (Ms) No. 3/2016/PD dated 24-02-2016. Moreover, BSES power plant has the added advantage of having situated at the load centre itself, which reduces the transmission and distribution losses to a great extent.

3.1.7.7

In the paragraph 3.1.7.7 of the audit report it has been stated that KSEB could not achieve the norms fixed for wind energy for the years 2008-09 and 2009-10 vide KSERC (Power procurement from Renewable Sources by Distribution Licensee) Regulations, 2006. It has been remarked that KSEB as a State utility should have complied with Regulations of KSERC issued from time to time in this regard.

The following remarks are offered in this regard :-

1. In accordance with section 86(1)(e) of the EA,2003 , KSERC way back in 2006 had issued KSERC (Power procurement from Renewable Sources by Distribution Licensee) Regulations, 2006 on 23-4-2006, which was subsequently repealed.
2. As per this repealed regulation, each distribution licensee shall purchase a quantum of 5% of its total consumption of energy from renewable sources. Out of 5%, two percent shall be from small hydro projects, two percent from wind and one percent from all other sources.
3. The wind power density required for sufficient wind generation is constrained only to very few locations in the western ghats of the State. Development of wind power projects in these locations are hampered by environmental issues and tribal land acquisition issues. Due to the high tariff of wind power in other states, inter-state purchase of wind power was also not viable. Further, due to lack of procedures for forecasting and scheduling of wind energy, it was not practical to purchase wind power from outside the state for meeting the wind RPO target stipulated by KSERC vide KSERC (Power procurement from Renewable Sources by Distribution Licensee) Regulations, 2006.
4. Considering the limited availability of renewable energy sources in the State and the difficulty faced by the obligated entities in the State to meet the higher Renewable Purchase Obligation targets stipulated in KSERC (Power procurement from Renewable Sources by Distribution Licensee) Regulations, 2006, KSERC in 2010, issued new regulation namely KSERC (Renewable Purchase Obligation and its Compliance) Regulations, 2010, revising the Renewable Purchase Obligation targets of the obligated entities.
5. As per Regulation 3(1) of the KSERC (Renewable Purchase Obligation and its Compliance) Regulations, 2010, every obligated entity shall purchase not less than 3% of its consumption of energy from renewable energy sources under the Renewable Purchase Obligation during the years from 2010 with annual increase of 10% of 3% per year up to a maximum RPO of 10%, provided that 0.25% of the consumption of energy shall be procured from generation based on solar as renewable energy source only.
   Subsequently, KSERC vide the order dated 4th April-2013 ordered that, RPO for solar shall be reckoned @0.25% from the year 2013-14 only and there after it shall be increased annually at 10%.
6. KSEB has been taking earnest efforts to comply with the KSERC (Renewable Purchase Obligation and its Compliance) Regulations, 2010 issued by KSERC.
7. The actual Renewable energy purchase details and the Renewable Purchase Obligation achieved by KSEBL for the years 2010-11, 2011-12, 2012-13 and 2013-14 is detailed below.

Sl No	Renewable energy sources	Generation (MU)			
		2010-11	2011-12	2012-13	2013-14
1	KSEB SHP	378.24	322.72	300.19	438.44
2	KSEB Wind	1.51	2.03	1.76	2.27
3	IPPs –SHPs	33.51	41.29	33.82	63.85
4	IPPs-Wind	63.04	67.49	68.34	65.80
5	Co-generation	34.07	35.17	33.55	57.74
6	Maniar Captive- SHP (not claimed REC)	40.59	36.91	21.49	40.23

7	Total	550.96	505.61	459.15	668.33
	Net energy consumption by KSEB as a distribution licensee	14098.89	15508.44	16337.48	16930.89
	Renewable energy as a percentage of total energy distributed	3.91%	3.26%	2.81%	
	3.03%	3.30%	3.58%		

8. As detailed above, KSEB Ltd could achieve the RPO target stipulated as per Regulation 3(1) of the RPO Regulation, 2010 for the years 2010-11, 2011-12 and 2013-14. However, for the year 2012-13, there was a shortfall of 79.98 MU in the RPO achievement, due to failure of monsoon during the year 2012-13 which resulted in reduction in energy generation from Small Hydel and Wind Energy Projects in the State. Against this small shortfall of 79.98 MU in 2012-13, KSEB had procured 163.24 MU, 35.70 MU and 62.20 MU surplus renewable energy in the years 2010-11, 2011-12 and 2013-14 respectively.

9. The matter was promptly reported to the Commission by KSEB vide letter dated 11-07-2013 and KSEB had also filed a petition before KSERC requesting to allow the carry forward in shortfall in RPO to subsequent years.

10. KSEB has been taking earnest efforts to meet its RPO target even though there are several constraints in the State in enabling KSEB to meet the RPO target stipulated by Commission as detailed below.

i. Small Hydro is the major renewable energy source available in the State. The energy availability from SHPs are subject to vagaries of monsoon.

ii. Irrespective of the policy initiatives of the State Government, and preferential tariff approved by the Commission for SHPs in line with CERC norms, no new SHP capacity has been added into the KSEB system through private investment.

11. However, KSEB Ltd has taken steps to develop Renewable energy projects within the State on its own as part of its commitment towards promotion of renewable energy.

12. Considering competitiveness and potential for accelerated development of solar power, KSEB Ltd has been giving thrust for solar generation in the State. A huge quantum of renewable energy capacity addition is envisaged in the coming years which are expected to help in surpassing the Renewable Purchase Obligation targets stipulated by KSERC for the coming years.

13. The observation of the audit team is based on targets fixed under repealed Regulations namely KSERC (Power procurement from Renewable Sources by Distribution Licensee) Regulations, 2006, which, KSERC, itself has observed as unachievable. Hence the observation of audit team is not relevant.

Non-availing of Carbon Credit

Based on the Power Purchase Agreement (PPA) executed by the IPPs & KSEB, all IPPs were requested by the KSEB to transfer the share of the CDM benefit received by them by way of sale of CER to the KSEB In response to the above, only one IPP, M/s MITCON Consultancy and Engineering Services Ltd has intimated that they have availed the CDM benefit. Accordingly M/s. MITCON was requested to transfer the share of CDM benefit availed by them and they have credited an amount of Rs. 4,46,843/- (Rupees Four Lakhs Forty Six Thousand Eight Hundred and Forty Three only) to KSEB's account on 11-07-2015. But, majority of the IPPs have intimated that they have not arranged the sale of CER due to low price of CER.

		M/s Zenith Energy Services Private Limited vide their letter dated 20-01-2015 had intimated that there is no progress in sale of CERs after the project got registered as CDM project due to no demand and low value for the CER and also informed that there is no benefit available to them to pass over to the KSEB In the PPA executed with M/s Viyyat Power (Pvt) Ltd., there is no Clause regarding sharing of Carbon Credit. No reply has been received from M/s. EDCL in this regard till date. The matter regarding sharing of CDM benefits accruing out of carbon credit is being pursued by KSEB with the IPPs.

3.1.7.8

The Audit observation is that from July 2012 to March 2013, there was short fall in receipt of 852.96 MU (15%) power from CGSs and as against scheduled quantum of 6644.7 MU (net entitlement of 5831.45MU), KSEB received only 4978.49MU.

In this context, it may please be noted that the actual energy drawal of KSEB from CGSs as per SRPC REA for the period from July 2012 to March 2013 is 6521.55MU which is more than the net entitlement mentioned above and the details are given below.

ANNEXURE

CGS Energy drawal details 2012-13

Month	Energy drawn by KSEB at KSEBL end kWh	Energy drawn by KSEBL at generator end kWh
July 12	668660836	700509391
Aug 12	573430480	598038292
Sep 12	592099232	613559292
Oct 12	754465301	785011463
Nov 12	688406115	720523211
Dec 12	752569915	782649832
Jan 13	810572167	831071888
Feb 13	709059863	745019454
Mar 13	712207703	745171496
Total energy drawn by KSEBL from July 12 to March 13	6261471612	6521554319

The final allocation of power from Central Generating stations is decided by the Government of India (GoI)/Competent Authority in accordance with the applicable guideline of GoI issued from time to time. As per section 79 of Electricity Act 2003, the Central Commission shall regulate the tariff of generating companies owned or controlled by the Central Government; and the Central Commission shall adjudicate upon disputes involving generating companies and to refer any dispute for arbitration. Even though Power Purchase Agreement is executed with Central Generating Stations, the CGSs are governed by CERC rules and regulations applicable from time to time. Thus, there are CERC regulations for the period 2004-09, 2009-14 and 2014-19 issued by CERC for five year period to govern the tariff of Central Generating stations. These regulations are based on Cost Plus approach; cost derived on normative basis ie, all reasonable costs incurred are 'pass through' and the reasonableness of cost is assessed on normative basis. As per the CERC regulations for the period 2009-14 (which involves the year 2012-13), the normative plant availability factor to be attained by the various CGS are as follows:

CGS	**Normative Plant Availability factor to be attained as per CERC Regulations**
NTPC-Talcher	82%
NTPC- Ramagundam	85%
NLC TPS II Stage 1	75%
NLC TPS II Stage 2	75%
NLC TPS I Expansion	80%

The availability of stations varies from month to month as there would be scheduled and unscheduled plant shut downs for maintenance purpose. In case of Thermal plants, as per CERC regulation, only fixed charge is linked with availability of plants and no other penalty are applicable for lesser availability. The 100% fixed charge recovery is also based at 85% of the availability of plant for coal based stations and 75% to 80% for lignite based stations. It indicates that an allowance of about 15% is allowed by CERC itself for maintenance and other shutdowns. If it exceeds this limit, the fixed charge payable is reduced proportionately based on the availability of the plant and the variable charge is paid only for the energy supplied.

The actual plant availability factor of these stations during 12-13 is as follows.

CGS	Normative Plant Availability factor to be attained as per CERC Regulations	Plant availability factor during 2012-13
NTPC-Talcher	82%	82.4%
NTPC- Ramagundam	85%	88.4%
NLC TPS II Stage 1	75%	86.8%
NLC TPS II Stage 2	75%	88%
NLC TPS I Expansion	80%	90%

The scheduling of power carried out by state utilities like KSEBL from CGS stations is based on the availability declared by the CGS stations. It can be seen that almost 100% scheduling is done by KSEB as per availability declared by various CGS stations.

It is also pertinent to note that there was domestic coal shortage during the period, which affected the availability of coal based CGS , which contributes the major portion of CGS allocation. It is mentioned in the audit para that as per the clause for the settlement of disputes in the agreement, any dispute, controversy or claim relating to or arising under the agreement which are falling under the provisions of the Electricity Act 2003 has to be dealt in accordance with the said Act. As per section 79(f) of the Electricity Act 2003, the Central Commission shall adjudicate upon disputes involving generating companies and to refer any dispute for arbitration. It may please be noted that in the CERC regulations, only fixed charge is linked with availability of the plant (incentive is given for generators if availability is more than normative availability and fixed charge will be reduced proportionately for availability less than normative value) and there is no provision to penalize the generator for reduction in generation due to short supply of coal. Hence the issue of shortage of coal was taken up by utilities including KSEBL in various forums like inter ministerial sub group meeting under the aegis of JS (LA) Ministry of Coal, Southern Regional Power Committee meetings, MoP etc.

Hence it can be concluded that

1. The entitlement of power from CGS is the upper limit up to which power can be availed by a utility based on installed capacity and allocation of power. Within the limit of entitlement, the availability of power to each utility would be declared by the CGS on a day ahead basis and the utilities would be allowed to schedule power based on the availability.
2. The scheduling of power is based on availability of power of CGS stations and not based on entitlement.
3. The tariff of CGS stations is issued by CERC and penalty and incentive etc can be implemented based only on CERC orders.
4. No penalty can be applied if there is variation from entitlement. If there is reduction from the normative availability, pro rata reduction in fixed charge can be applied.
5. CGS stations also try to make available maximum power, to get maximum fixed cost as scheduling above normative plant availability factor(NAPAF) attracts incentive along with capacity charges.
6. KSEBL is one among the various beneficiaries of CGS and the above issues have been taken up by KSEBL in various forums like Southern Regional Power Committee meetings, MoP etc.

Thus it can be seen that audit observation to recover penalty from CGS for not supplying power as per entitlement is not based on regulations and procedures followed in purchase of power from CGS.

3.1.7.9

The Central Electricity Authority is the premier technical organization in the country entrusted with the statutory responsibility of load forecasting, long term transmission planning etc for the country. The CEA while preparing the power requirement of the States in its 18th electric power survey report has estimated the T&D loss in all the States based on the transmission network expansion plan as well as the upcoming generation in different parts of the country. The methodology arrived by CEA in the 18th EPS report to assess the T&D loss forecast for the 12th plan and 13th plan period has been worked out after taking into account the likely effect of steps being taken and programme envisaged for strengthening of T&D system, effective metering as well as based on the past trend in T&D losses for each state. As per the 18th EPS report, the all India T&D loss expected by the end of the 13th plan is expected to be 15.39%. The T&D loss of the state is well within the target set by CEA.

During the period between 2001-02 and 2013-14, the T&D loss in the Kerala Power system has been reduced from 30.76% to 14.96%, a reduction of 15.80% during the last 12 years as detailed below in the table.

Extent of reduction of T&D Losses

Year	**T&D Loss within KSEB system (%)**	**Extent of reduction (%)**	
		Yearly	**Cumulative**
2001-02	30.76		
2002-03	29.08	1.68	1.68
2003-04	27.44	1.64	3.32
2004-05	24.95	2.49	5.81
2005-06	22.96	1.99	7.80
2006-07	21.47	1.49	9.29
2007-08	20.02	1.45	10.74
2008-09	18.83	1.19	11.93
2009-10	17.71	1.12	13.05
2010-11	16.09	1.62	14.67
2011-12	15.65	0.44	15.11
2012-13	15.30	0.35	15.46
2013-14	14.96	0.34	15.80

A comparison of the T&D loss estimated by CEA for the years 2009-10 to 2013-14 and that achieved by KSEB are furnished in the table below.

Year	**T&D Loss assessed by CEA (%)**	**T&D Loss achieved by KSEB system (%)**
2009-10	19.59	17.71
2010-11	19.00	16.09
2011-12	18.40	15.65
2012-13	17.80	15.30
2013-14	17.20	14.96

The savings in generation and power purchase cost with the T&D loss achieved by KSEB Ltd surpassing the targets set by CEA is furnished in the table below.

Year	T&D loss estimated by CEA (%)	T&D Loss within KSEB system (%)	Total Energy sales within the State (MU)	Savings in Generation & Power Purchase (MU)	Savings in Power purchase cost)* (Rs. Cr)
2009-10	19.59	17.71	13971.09	396.95	138.93
2010-11	19	16.09	14547.9	622.87	218.00
2011-12	18.4	15.65	15980.53	638.48	223.47
2012-13	17.8	15.3	16838.24	604.62	211.62
2013-14	17.2	14.96	17454.04	555.25	194.34

**Estimated considering power purchase cost as Rs. 3.50 per unit*

The comments of the Audit appear to be without taking into consideration the achievement of T&D loss reduction and the savings in generations and power purchase cost. It is submitted that the Audit has relied solely on the targets for T&D loss set by Kerala State Electricity Regulatory Commission which was not based on any scientific proven methodology. Hence, the adverse comments of Audit without taking into consideration the nationally acclaimed achievement of KSEB in the field of reduction in T&D losses may be dropped.

3.1.7.10		It may be noted that considering time constraints and urgencies, pre-audit of Power Purchase bills before payment was not practical and hence such pre-audit was not envisaged in the audit plans of internal audit. However, internal audit now focuses on post-audit of power purchase transactions on a concurrent basis to ensure that the lapses as pointed out by audit will not be repeated. Draft agreements related to power purchase/trading transactions and other related activities are duly vetted by the Legal Department of K.S.E.B Limited headed by the Legal Adviser & Disciplinary Enquiry Officer (LA & DEO) who is a District Judge on deputation from the Judicial Service, which will definitely take care of legal and all other aspects of PPA to protect the interest of KSEBL.
3.1.7.11		In para audit team vide para 3.1.7.11 of the audit report it has been stated that KSEB met 58 to 74 percent of power requirement through purchase from various sources during the period 2008-09 to 2012-13 and had to spend about 53 to 62 percent of the total revenue for power purchase. It has been stated that the net realization from purchased power was less than the cost adversely affecting the financial position of KSEB. It is admitted that the average cost of supply of KSEB is more than the average realization through tariff and there has always been an unbridged revenue gap existing from 2008-09. As about 70% of ARR of KSEB is constituted by power purchase expenses, KSEB has been taking steps to optimize power purchase cost by planning long term power procurements so as to reduce the average cost of supply. KSEB has been taking all possible efforts to optimize the generation and powe

purchase through the following measures:

- i. Scheduling the generation and power purchase strictly based on merit order.
- ii. Procuring power through energy exchanges as and when the electricity is available at cheaper rates.
- iii. Procure power through traders' at most competitive rates.
- iv. Reduce the power procurement from costly liquid fuel stations to the possible extent.
- v. Promoting power procurement from renewables.

KSEBL had taken following initiatives for meeting the emerging power requirement of the State. The details are given below.

- (a) KSEBL has entered into PPA with M/s TATA MAITHON project for procuring 300 MW at CERC approved tariff for 30 years. The approximate rate is about Rs 4.20 per unit.
- (b) KSEBL had entered into PPA with M/s DVC for procuring 100 MW at CERC approved rate for 30 years from Mejla Plant and 50MW from Raghunathpur plant. The approximate indicative rate of DVC power is also about Rs 4.20 per unit.
- (c) KSEBL is the first power utility in the country which had finalized the bidding process as per the bidding guidelines DBFOO notified by the Central Government in conforming with section 63 of the Electricity Act-2003. Accordingly, KSEBL had entered into PPA for procuring 865 MW on DBFOO basis for a period of 25 years as detailed below.

Table 2.6 Details of the PPA signed for procuring power through DBFOO basis

Sl. No.	Name of Firm	Quantum of power in MW	Tariff as on Bid Date (Rs./kWh)	Period of commencement
1	Jindal Power Limited	200	3.60	From Dec-2016 for 25 years
2	Jhabua Power Limited	115	4.15	
3	Bharat Aluminium Company Limited	100	4.29	From October-2017 for 25 years
4	Jindal India Thermal Power Limited	150	4.29	
5	Jhabua Power Limited	100	4.29	
6	Jindal Power Limited	100	4.29	
7	Eastcoast Energy Private Limited	100	4.29	
	Total	865		

As detailed above, during the last two years, KSEBL had entered into PPA with various generators for procuring 1265MW power on long term basis for '25' years at the most competitive rates between Rs 3.60 per unit to Rs 4.29 per unit. With this remarkable achievement, the electricity requirement of the State can be met to a greater extent at most competitive cost of supply.

Further, for meeting the balance energy requirement after accounting the hydel, CGS and traders through long term contract, KSEBL had already taken following steps to procure the power from medium-term basis.

1. KSEBL had entered into PPA with M/s NVVN for procuring 300MW and M/s PTC for procuring 100MW for the period from March-2014 to Feb-2017 at a levelised tariff of about Rs 4.50 per unit.
2. KSEBL has been scheduling power from power exchanges as and when the same is available at competitive rates.

3.1.7.12		Even with all the above efforts taken by KSEB for optimizing its power purchase cost, the gap between average cost of supply and average realization still exist. This gap can be bridged only through tariff revision measures which are to be decided and determined by KSERC. Due to various reasons mentioned here in above, KSEB could not increase the internal generation, which necessitates purchase of power. However, KSEB is putting in earnest efforts to procure power at reasonable tariff from various sources to meet the system demand.

		Action Taken by Government
3.2.1		**Para 3.2.1 to 3.2.7** Introductory part. Hence no remarks.

3.2.6		
3.2.7		
3.2.7.1		Rajiv Gandhi Grameen Vydyuthikaran Yojana was launched by Ministry of Power, Govt. of India during April 2005. KSEB had prepared Project Report as per REC guide line for RGGVY and in consultation with local representatives within the very short period allowed by M/s REC and submitted during April 2005 itself. Hence realistic field survey could not be conducted at many locations for the preparation of Project Report and excess over the projected quantity

		was included in the DPR to avoid deficit of fund during actual execution. Among the 14 schemes submitted, M/s REC issued sanction for 7 districts viz. Kasargod, Kannur, Kozhikode, Wayanad, Palakkad, Malappuram and Idukki for an amount of Rs. 221.75 Cr on 05.08.2005. Even though KSEB Ltd had taken necessary steps in time for implementation of these seven schemes, only one scheme (Idukki district) could be started and completed under Xth plan. The reason for non implementation of other 6 schemes was beyond the control of KSEB Ltd and due to the reasons such as frequent revision in DPR, awaiting decision from M/s REC etc. M/s REC has shifted sanctioning of other 13 district schemes to XIth plan. Ongoing 6 schemes (phase II) were sanctioned only on 10.03.2010 and other 7 schemes (phase III) on 19.12.2011 and 14.02.2012. As per REC instructions the completion period for Phase II project was 31-03-2015. Closure proposal for Kasargod, Kannur, Kozhikode, Wayanad, Palakkad and Malappuram have been submitted to REC. Completion period of phase II project is 30-09-2015 and closure proposal for Kollam, Pathanamthitta and Alappuzha have been submitted to REC. The Audit considered the schemes period for Phase II and Phase III Projects from 2005, but actually it was from 2010 for phase II and from 2012 for Phase III projects. KSEB Ltd had originally submitted proposals for construction of 7 numbers of 66/11 KV substations and 18 numbers of 33/11 KV substations along with electrification of rural households in all the districts. But REC sanctioned only one substation in Malappuram scheme on 05.08.2005. The Board had proposed enhancement of existing 33/11 KV substation in the revised DPR prepared for Wayanad and Palakkad districts. REC had sanctioned these two REDB works along with REDB work for Malappuram district on 10.03.2010. KSEB had not neglected REDB component while preparing the scheme. KSEB Ltd had already taken steps for subimitting proposal under DDG packages. After investigation and analysis it is found that only SPV projects are viable in the identified remote areas far

away from the grid connectivity. As per the guideline for DDG projects, area having population of more than 100 could be considered for the proposal. After consultation with REC, the proposal under DDG package was submitted and sanctioned by REC. Out of the 15 colonies, tendering of 5 colonies were completed and work order issued on 03-06-2015. The remaining 10 colonies were tendered and PQ bid opened.

Latest Progress of RGGVY is as shown below:

Component	Phase I (Idukki)		Phase II (6 Northern districts)		Phase III (7 Southern districts)		Total		
	Target	Ahcvmt	Target	Ahcvmt	arget	Ahcvmt	Target	Ahcvmt	
REDB	Nil	Nil	3	3	1	Nil	4	3	75%
LT S phase (KM)	258.35	368.69	1454.769	1846.524	419.57	606.81	2132:689	2822.02	
LT 3 Phase (KM)	62.14	63.51	411.720	307.581	269.67	328.83	743.53	699.92	
11 KV Line (KM)	350.90	249.94	815.573	895.467	796.52	619.46	1962.993	1764.9	
Transformer	308	275	1145	897	1159	388	2612	1560	
Electrification of BPL HH	16097	1723.8	38517	63660	18839	27937	73453	91597	

From the table it is clear that KSEB Ltd had effected service connections to BPL house holds more than the target. Even though achievement of some of the works was less than the target, aim of the scheme ie, electrification of rural households, was achieved. With the above infrastructure, service connections were effected in the villages. The REDB works in Wayanad, Palakkad and Malappuram have now been completed.

3.2.7.2

Fund receipt from REC and its utilization as on 31-03-2015 is given below: (Rupees in lakh)

Year	OB	Fund received from REC	Total Fund available	Fund utilised	Unspent Balance
2005-06	0	0	0	0	0
2006-07	0	502.279	502.279	149.872	352.407
2007-08	352.408	10.2506	362.658	198.591	164.067
2008-09	164.068	83.51	247.578	817.587	-570.01
2009-10	-570.01	1058.6	488.594	732.981	-244.39
2010-11	-244.39	3189.48	2945.09	144.807	2800.29
2011-12	2800.29	0	2800.29	2167.16	633.131
2012-13	633.131	5589.59	6222.72	2444.66	3778.06
2013-14	3778.06	2327.04	6105.09	5814.19	290.906
2014-15	290.906	1714.57	2005.47	4719.18	-2713.71
Total		14475.3		17189.028	

Please note that 100% fund has been received for Phase I project, 90% for Phase II and 60% for Phase III projects.

		An amount of Rs. 10 Crore was received as state share under the head of account 2801-80-101-90(P) for completion of ongoing works under RGGVY scheme vide G.O. (Rt) No. 203/2014/ PD dated 23.07.14.
3.2.7.3		Even though KSEB Ltd had originally submitted proposals for an amount of Rs. 438.36 Cr for electrification of rural households in all the 14 districts of Kerala, REC issued sanction first for 7 projects viz Kasaragode, Wayanad, Kannur, Kozhikode, Malappuram, Palakkad,

Idukki districts for an amount of 221.75 Crore on 05.08.2005. As per the guideline Turnkey tenders were invited on 27.09.2005. But nobody quoted the tender. The Board then requested REC for sanction for departmental execution. As per the direction of REC, the work was re-tendered on 25.05.2006 and the firms quoted bids at exorbitant rates, which were not financially viable.

Again KSEB Ltd requested sanction for departmental execution to REC. REC then directed to award the work in Idukki district to the lowest bidder M/s ICSA (India) Ltd., Hyderabad, who quoted 19.45% above the estimate rate and to entrust the work in Kasaragode, Wayanad, Kannur, Kozhikode, Malappuram and Palakkad districts to M/s NTPC Electricity Supply Company Ltd (NESCL).

The DPRs prepared by NESCL for Palakkad and Wayanad districts were submitted to REC Project office on 01.01.2008. REC intimated on 02.06.2008 that the DPRs for Palakkad and Wayanad districts would be kept "on hold" and considered only in the 2nd Phase of 11th plan and submission of DPRs for remaining districts were withheld till the receipt of guidelines for projects under 2nd phase of 11th Plan.

After the meeting with Union Minister for Power on 23.06.2009 & 04.08.2009, the then Hon'ble Minister for Power, Kerala had directed to submit revised DPR to REC.

KSE Board requested NESCL to prepare revised DPR for submission to REC on 10.08.2009. M/s NESCL informed on 03.09.2009 that due to preoccupation with the ongoing RGGVY projects of other states under execution by them, they were not in a position to undertake the assignment of revision of DPRs and suggested to prepare the DPRs for these 6 districts by Board.

The revised DPR for Kasargod, Kannur, Kozhikode, Wayanad, Palakkad and Malappuram, were submitted to REC on 06.10.2009. Sanction was received from REC on 10.03.2010. Notice Inviting Tender (NIT) issued on 21.04.2010 and awarding of work started on 31.08.2011.

The 14 Nos of DPRs first submitted to REC were prepared during 2005. The revised DPR for 6 Northern districts, sanctioned on 10.03.2010 were prepared during 2009 and for 7 Southern districts

		sanctioned on 19.12.2011 and 14.02.2012 were prepared during 2010. Thus it may be noted that the delay has been occurred due to reasons beyond the control of KSE Board. Within the period from 2005 to 2007/2010, as per the direction of Govt. of Kerala, total electrification had to be implemented in the Constituencies by using MLA fund. Thus most of the works included in the RGGVY scheme were executed under total electrification scheme. This is the reason for reduction in rural households in the revised DPR from Rs. 4.68 Lakh to 1.66 Lakh. While preparing the DPR for implementation of RGGVY, the works were included by anticipating the number of connections to be effected. Even though the DPR were prepared on actual survey, the condition of effecting service connection would be varied during execution. From the Census data 2001 and 2011 it can be seen that the rural households have negative growth. Moreover on actual implementation of the scheme, altogether, 124881 rural households were there to be electrified against the target of 166000. As such the Audit finding that the number of rural households which is not electrified (3.02 Lakhs) and loss of benefit to the State is not true. As already explained, the DPRs were prepared by anticipating the work to be executed during the scheme period. The scheme prepared was accepted and approved by REC. Even though the number of BPL households proposed under the revised DPR was 91000, service connections effected under the scheme were more than the sanctioned quantity (73453 Nos) for which Ministry of Power will release fund as Grant.
3.2.7.4		KSEB Ltd had prepared the DPR (from 2005) as per the REC Guide Lines. Two Officers from REC, New Delhi conducted workshop for preparation of DPR for 3 days. Within these periods the concerned field officials prepared Draft DPRs which were vetted by these

3.2.7.5		officials. The DPRs were prepared by the concerned Dy. Chief Engineer of Electrical Circles. The Dy. Chief Engineers are the authority for implementation of the work under their Electrical Circle. The DPRs were prepared in the format provided by collecting details for electrification of inhabitations of each Village from concerned Electrical Section Offices. Based on the number of consumers, some districts have 2 Electrical Circle Offices and there was no specific guideline for preparation of District wise Scheme. As per the common practice in KSEB Ltd, the Circle wise DPRs were prepared for districts having two Electrical Circles. But as per the direction of REC, revised district wise DPRs were submitted. In the DPR, the requirement of Distribution Transformers were calculated according to Load demand to cater RGGVY rural households. In the case of DPR for Pathanamthitta and Alapuzha, requirement of Transformers were more due to increased load demand for effecting the proposed number of Service Connections. The reasons which lead to the delay in submission of DPRs to REC have been narrated in detail in reply to Para 3.2.7.3 herein above. Schemes under REDB were proposed based on the load due to VEI. Even though the Board has proposed construction of 25 Nos of substations at various Blocks, REC has sanctioned only one substation. ***K.S.E.Board Ltd., has already taken steps for submitting proposal under De-Centralised Distributed Generation (DDG).*** After investigation and analysis it was found that only Solar Photovoltaic (SPV) project is viable in the identified remote areas far away from the grid connectivity. As per the guideline area having population of more than 100 could be considered for the proposal. Thus among the identified schemes from Palakkad & Wayanad districts, REC has

		issued sanction for work at 15 Colonies in Palakkad district. Even though the DPR were prepared based on the field survey, more households were added in that area by the time of execution and in order to achieve the main goal of RGGVY scheme, for effecting these additional households more works had to be executed, which in turn increased the quantum of material.
3.2.7.6		Even though there were 12.40 lakh un-electrified households, as per REC guide line infrastructure can be developed only for electrification of BPL households. The electrification of APL households can be effected with the infrastructure developed for BPL households. Hence the service connection for APL proposed in the DPR could be effected with the infrastructure developed for BPL households only. It may also be noted that, once the infrastructure developed, we can use it for subsequent household electrification, whether it is APL or BPL.

		These additional service connections were approved by REC against the closure proposals submitted by KSEBL. Hence K.S.E.Board proposed only 4.68 Lakh rural households for which service connection could be effected with the infrastructure developed for BPL connection. As explained in Para 3.2.7.3, during the period from 2005 to 2007/2010, some of the karas (habitations) were electrified under total electrification (100% electrification) and SC-ST development schemes. Also, as per the guideline of REC, the karas (habitations) having population more than 100 could be proposed for electrification. Also REC earmarked cost per village. Since the DPRs were prepared based on these guidelines, number of BPL connections proposed was less. As stated in the earlier para, the DPRs were prepared considering anticipated number of un-electrified rural households. Hence there was variation in number of rural households proposed for electrification. The DPR estimates were prepared based on the then cost data of KSEB and the bench mark rate of KSEB is less than the cost data. Subsequently, REC issued sanction, considering the special geographical condition and terrain of Kerala.
3.2.7.7		The work under RGGVY-VEI in Malappuram district was awarded to M/s East Coast Construction & Industries Ltd. Chennai on 29.03.2011. Due to slow progress of the work, show cause notice was given but the company did not properly reply on it and they did not take any steps to start the work. Finally the contract was terminated on 22.04.2013 and it was decided to complete the work departmentally. Within this period the families in the ST colony of Kodumpuzha, Nelliyai, Kureeri and Mankulam in Vettilappara Village of Areakode Block under Electrical Circle Manjeri requested that they were ready to remit the OYEC charge for effecting the service connections at the earliest. Even though this work was proposed under RGGVY, service connections were effected by collecting OYEC charges. Since the work has not been done based on the original DPR, the question of omitting 91 beneficiaries in the revised DPR is immaterial.

3.2.7.8		REC issued sanction for implementation of RGGVY in Kasaragod, Kannur, Kozhikode, Wayanad, Palakkad, Malappuram and Idukki on 5.08.2005 for an amount of 221.75 crore and issued in principle approval for implementation of Scheme in Tvpm, Kollam, Pathanamthitta, Kottayam, Alappuzha, Ernakulam and Thrissur for an amount of Rs.99.25 Crore on 11.05.2007. Among the I phase sanction, Scheme was implemented only in Idukki district. The reasons for the delay has already been explained in detail in Para 3.2.7.3. As per the direction of REC, revised DPR was submitted. Sanction received for Kasaragod, Kannur, Kozhikode, Wayanad, Palakkad and Malappuram on 10.03.10 and Kollam, Pathanamthitta, Kottayam, Alappuzha and Thrissur on 19.12.11 and Trivandrum & Ernakulam on 14.02.12. Six Northern Schemes were completed on 31.12.14. Kollam, Pathanamthitta and Alappuzha schemes were completed on 31.03.15 Trivandrum, Ernakulam, Kottayam and Thrissur schemes were completed on 30.08.15.
3.2.7.9		
3.2.7.10		Even though the funding is done by Govt. of India, substations can be constructed based on availability of land and load flow study etc.

		Hence it is not feasible to propose substation in every block. Among 25 substations proposed, REC has issued sanction for construction of 66/11KV Substation in Malappuram, Augmentation of existing 33/11KV Substation by adding one 5 MVA Transformer in Wayanad and Palakkad, and one Substation in Ernakulam. Substation works in Malappuram, Wayanad, Palakkad have already been completed and charged. Regarding the 2 substations, substations at Kalpakanchery in Tanur Block, Malappuram district was not proposed due to the reason that land was not available at the time of submission of proposal. REC had specifically directed that the Substation where land was available only shall be included in the proposal. Augmentation of 33/11 KV Substation at Thiruvallur in Thodanur Block, Kozhikode district was not included, since the load due to the Scheme can be met with the existing substation. As per that guide line, Substation work shall be proposed only when the load due to the scheme could not be met with existing Substation. During execution of work under Rural Electrification Distribution Backbone (REDB), at Mankadu, due to hard rock, more time had to be spent to remove it for earthing purpose. Due to non availability of land, the substation proposed in Ernakulam district (Irumalapady) was dropped and enhancement work in 4 existing substations in Ernakulam for withstanding the load due to VEI work of RGGVY was proposed. The delay in Substation in Malappuram district is mainly due to the terrain condition. Due to hard rock more time was taken to remove it for earthing purpose. KSEB has prepared the schemes based on the requirement of field at that time. Preparation of 100% actual DPR for a future work based on field requirement is not possible. During preparation of DPR, only 66/11 KV substation was found sufficient. But during the tendering time it was found substation with 110 KV parameter is required which will not be permitted in RGGVY. This is not due to preparation of faulty DPR.

3.2.7.11		**Phase I:** REC issued sanction for implementation of RGGVY in Kasargod, Kannur, Kozhikode, Wayanad, Palakkad, Malappuram and Idukki with a total outlay of Rs. 221.75 crore on 05.08.2005. The work under the scheme in Idukki district was started in 2007. REC issued in-principle, approval for implementation of the scheme in Thiruvananthapuram, Kollam, Pathanamthitta, Kottayam, Alapuzha, Ernakulam and Thrissur districts with total outlay of Rs. 99.25 crore on 11.05.2007. In the sanction letter, length of LT line sanctioned was less than that proposed in the DPR. REC considered 0.5 KM LT line per kara. The information received from REC on this LT line limit per kara was considered for Idukki district scheme. During the visit for monitoring the work in Idukki district by Sri. Guptha from REC Zonal Office, Hyderabad, it was cleared that there was no such conditions and could construct the required LT lines. Thus revised DPR was prepared based on field requirement to effect service connections to all

		BPL households. **Phase II:** M/s REC insisted ACSR Rabbit conductor for 11 KV Line. But in Kasargod district, during the survey it was noticed that line extension would be required after the completion of the project. Hence Raccoon conductor was proposed. But in other districts, line extension was not required in the proposed area and hence Rabbit conductor was proposed. **Phase III:** During the time period from submission of proposal to REC and sanction for departmental execution by REC , some of the works proposed have been completed under total electrification scheme, and SC/ST development scheme. Hence, more time was taken to complete the work to achieve the sanctioned quantum of work. Now all the schemes under Phase III-(Seven Southern District Scheme) have been completed.

3.2.7.12		As per the guide line of REC for DDG package, 17 schemes have been submitted to REC (Palakkad-15 & Wayanad-2) and REC has sanctioned 15 schemes in Palakkad district. Work Order was issued for executing the work in 5 Colonies. For the remaining 10 Colonies, work was tendered and PQ Bid opened. During DPR preparation and execution period, Board expected to complete the work in these areas and tried to obtain forest clearance. Due to the objection from Forest Department, the two villages in Idukki district could not be considered for electrification. Hence electrification of these villags are not included in the DDG projects.
3.2.7.13		About 1 Lakh households were electrified under RGGVY in 13 districts. DPR for electrification of 4052 BPL households in Idukki district under RGGVY –XIIth plan has been submitted to REC for approval. 17238 BPL households were electrified in Idukki district under Xth plan RGGVY scheme.

3.2.7.14		The mandatory condition of franchisee set up was waived, as per communication dated 13-09-2013 from REC, a copy of which is attached as <u>Annexure-I.</u>
3.2.7.15		Apart from DLCC meeting, K.S.E.Board Ltd; had regular interaction with all DLCC members during monthly District Advisory Committee, meeting convened by District Collector and would discuss all the related issues pertaining to RGGVY projects for smooth execution of the projects. Some colonies in Idukki, Wayanad and Malappuram district proposed under RGGVY scheme could not be electrified due to non availability of forest clearance. The Forest Department insisted that the clearance would be issued if UG cable

		was laid instead of overhead lines. But UG Cable laying is not allowed under RGGVY scheme. Hence those colonies could not be electrified. Even though regular meeting was not conducted by the Chief Secretary, intervention was made as and when necessary. Also frequent monitoring was conducted at Board's top management level.
3.2.7.16		Some of the works awarded to the turnkey contractor had already been executed before the commencement of the work. Hence field survey conducted by the contractor took more time and the work could not be completed within the stipulated time. As per the audit point, the liquidated damage was recovered from the contract bill since time extension was not issued by REC at that time. However, considering the request of the turnkey contractor as a genuine case, subsequently REC extended the time extension with the view that the balance work can be completed only with the requested additional time so as to provide service connection to the poor people, which was the main goal of the scheme.
3.2.7.17		As mentioned in the Audit Report, it is admitted that some of the Accounts Rendering Units (ARUs) of the Board failed to recover Building and other Construction Workers Welfare Cess from the contractors bills on the contention that the same is applicable only in the case of new construction works and therefore not applicable for RGGVY works where there is no construction of new distribution network. However, Board after scrutiny of the relevant provisions of

		the Building and other Construction Workers Welfare Cess Act (B&OCWWC) Act 1996 and reviewing the audit comments issued a circular directing all its ARUs to recover the applicable cess on all works related to Generation, Transmission and Distribution of power as stipulated in Building and other Construction Workers (Regulation of Employment and condition of Service) Act – 1996, in future. The copy of the Circular no. CIA/WAD/VIII(GI)/2014-15 dated 19-11-2014 is enclosed as **Annexure II**. The default occurred on the part of field officers due to misinterpretation of the law may kindly be excused considering the fact that Board has taken necessary steps to avoid such instances in future.
3.2.7.18		The DPR were prepared based on the field survey and consultation with local authorities. As per the guide line for RGGVY, the kara having population more than 100 can be proposed for electrification. Accordingly, selected karas have 4.68 lakh house holds to be electrified. At the time of preparation of DPR, no proposal for electrification of public places was reported from local bodies/ public representatives. But during execution time, with the infrastructure created under scheme, some public places were electrified.

3.2.7.19		**1. Departmental execution of works & exclusion of substations in the DPR** Even though REC has issued sanction for implementation of the scheme during 2005, execution of work could not be done except Idukki district due to the reasons explained in Para 3.2.7.3. Since the rate quoted by the turnkey contactor was more that 20%, it was reported to M/s.REC and requested departmental execution with the positive intention of executing the work for attaining the goal of the scheme. **2. Failure to include Tanur and Thodannur Substations works** The substation at Tanur Block (Kalpakanchery Substation) was not proposed, due to the fact that, land was not available at the time of submission of DPR. As per the guide line of RGGVY Substation having land shall be proposed for the scheme. Since the load due to the scheme at Thodannur Block is not much high and can withstand with the existing substation, the augmentation of substation (Thiruvalloor) was not proposed. As per the guide line, the works under REDB can be proposed only if the load due to the scheme could not be met from the existing substations in the Block.. **3. Failure to include Village Electrification Infrastructure (VEI) work in the DPRs of six northern districts** KSE Board has been implementing schemes funded by M/s. REC for the past 15 years. The cost data for the scheme were prepared according to REC norms. Due to the terrain conditions in some places of Kerala, more number of poles and stays were required in excess than the sanctioned cost data. With this excess quantity, Board has adopted average quantum of materials (poles & stays) and prepared an estimate for the excess amount. Payments were made to Turn Key Contractors only for the materials actually consumed. Now all the schemes in Northern districts were completed and it was seen that

		there was no much difference in the actual quantum of material used than the sanctioned. Hence additional expenditure is very nominal as compared with the amount calculated (33.17Crore). The works under RGGVY in 6 northern districts were awarded to turnkey contractors. Cost Data (per unit rate for each work) for the scheme were prepared as per REC norms. While execution of the project, due to peculiar nature of the terrain it was found that more no of poles and stays were required than that in the sanctioned cost data. As per the request from the turnkey contractors, board has calculated new cost data (per unit rate) with more no of Poles and Stay. With this unit rate and the total quantum of works, the Board prepared estimate for excess amount over and above the sanctioned amount which comes around 33.17 Cr. All the 6 northern schemes were completed, and it is found during preparation of the closure proposal that there was no much difference in the actual quantum of material used than the sanctioned quantum of material. Even though Board has decided to bear the additional cost of Rs. 33.17Cr due to additional quantum of work and additional quantum of material used, there was no such excess amount due to additional quantum of materials used. **4. Rejection of increase in cost due to additional quantities (Idukki district)** Rate revision was granted for the extra quantum of work over and above the quantum of work for which agreement was executed at the time of commencement of the Scheme. During the revised DPR preparation, some works were in excess than the quantities. The sanction for the revised DPR was received on 01.08.2009, where as the first sanction received on 05.08.2005. During this period the material cost increased and to avoid the delay in execution and also to achieve the goal of the scheme, rate revision was given.

Annexure-I

आरईसी
REC

रुरल इलेक्ट्रीफीकेशन कारपोरेशन लिमिटेड
RURAL ELECTRIFICATION CORPORATION LIMITED
(भारत सारकार का उद्यम/ A Government of India Enterprise)
Regd Office: Core-4, SCOPE Complex, 7 Lodi Road New Delhi 110003
Project Office: O-5, 4th Floor, Saphyallyam Commercial Complex
TRIDA Building, Palayam, Thiruvananthapuram 695 034
E-mail - potrivandrum@recl.nic.in
Phone : 0471-2328662 Fax : 0471-2328579

No. REC/PO/TVPM/ Proj./RGGVY/ Closure/ 364 Date: 13-SEPT-2013

The Additional Chief Secretary (Power)
Government of Kerala
Secretariat
Thiruvananthapuram

EE Pi
AG Pa

Sub: Rajiv Gandhi Grameen Vidyuthikaran Yojana (RGGVY) – Deployment of franchisees for management of rural distribution - relaxation reg.

Ref: State Govt. letter No.258/C1/12/PD dated 22.04.2013.

Madam,

Kindly refer to letter cited above under reference. In this connection, it is to mention that Cabinet Committee on Economic Affairs (CCEA) while approving continuation of RGGVY in 12th Plan have relaxed deployment of franchisees for management of rural distribution for entire RGGVY programme. The States, however, should mention the alternative arrangement that would be adopted by them for ensuring maintenance of assets created under RGGVY and revenue sustainability at the DISCOM level. Hope this will facilitate speedier closure of ongoing 11th Plan (Phase-I) RGGVY projects targeted for closure this year and submission of final claim in respect of Xth Plan Idukky RGGVY project already approved for closure.

Yours faithfully,

(N.S.RAVIKUMAR)
Chief Project Manager

Copy to The Nodal Officer (RGGVY), O/o Member (D&GE), Kerala State Electricity Board (KSEB), Thiruvananthapuram.

KERALA STATE ELECTRICITY BOARD LTD.
Office of the CIA, Vydyuthi Bhavanam, Pattom, Thiruvananthapuram.
Phone No. 0471 -2514537 (E.Mail:cia@Ksebnet.com) Fax: 0471-2448584

No. CIA/WAD/VIII (GI)/2014-15 Dated: 19.11.2014

Circular

Sub:- Recovery of Cess (CWWF) on the cost of building and other construction works – directions issued - reg.

Ref:- 1. CAG Audit Report for the year 2013-14 – Performance audit on implementation of RGGVY schemes in KSEB Ltd – reg.
2. Clause El 119 (recovery towards construction workers Welfare Fund) of GCC.

Instances have been noticed that in certain ARUs, the statutory recovery of cess towards Building and Constructions Workers Welfare Fund have not been effected and the C & AG has also reported on the lapse. As per the Building and other Construction Worker's Welfare Cess Act, 1996 (Act 28 of 1996). "There shall be levied and collected a Cess for the purpose of the Building and other Construction Workers (Regulation of Employment and Condition of Service) Act 1996, at such rate not exceeding two per cent, but not less than one percent, of the cost of construction incurred by an employer, as the Central Government may, by notification in the official Gazette, from time to time specify". Hence Cess at the rate of one per cent of the cost construction incurred by the employer is to be levied and collected vide S.O. 2899 dated 26.09.1996 under the Act.

As per the Building and other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996, Chapter I, Preliminary iii (d), "building and other construction work" means the construction, alteration, repairs, maintenance or demolition – of or, in relation to, buildings, streets, roads, railways, tramways, airfields, irrigation, drainage, embankment and navigation works, flood control works, generation, transmission and distribution of power etc."

In view of the above, all concerned are directed to ensure that the statutory recovery and remittance of Cess towards Building and other Construction Workers Welfare Fund is effected as per the said Act and rules in order to avoid penalty and other actions as stipulated in the above Act.

Secretary (Administration)

Copy to:

1) All Chief Engineers, KSEB Ltd.
2) All Deputy Chief Engineers, KSEB Ltd.
3) The Financial Advisor/Chief Internal Auditor, KSEB Ltd.
4) The Legal Advisor & Disciplinary Enquiry Officer, KSEB Ltd.
5) The Chief Vigilance Officer, KSEB Ltd.
6) The Chief Public Relations Officer, KSEB Ltd.
7) All Regional Audit Officers, KSEB Ltd.
8) TA to Chairman and Managing Director/Director [illegible] Civil)/ Director [illegible] System Operation)/Director [illegible] Generation - Electrical), Director [illegible], KSEB Ltd.
9) PA to Director (Finance), KSEB Ltd.
10) Sr. CA to Secretary
11) Stock file

Annexure 11

Statement showing Power Purchase Agreements by Kerala State Electricity Board

(Referred to in paragraph 3.1.1)

Sl. No.	Name of Project	Firm	Capacity in MW	Date of Agreement	Allocation to KSEB in MW
I.	**CGS**				
A.	**Nuclear Power Station**				
1.	MAPS	Nuclear Power Corporation of India Ltd.	440	31.03.2001	18
2.	Kaiga I & II	Nuclear Power Corporation of India Ltd.	2x440	30.06.2005	38
B.	**Thermal Power Station**				
3.	Ramagundam I & II	NTPC	3x200 3x500	10.04.1985	245
4.	NLC Stage II – I	Neyveli Lignite Corporation	3x210	27.07.1995	63
5.	Thalcher – II	NTPC	2000	10.06.1998	280
6.	NLC Stage-II – II	Neyveli Lignite Corporation	4x210	18.02.1999	90
7.	Ramagundam – III	NTPC	500	19.07.2001	61
8.	NLC Stage –I exp.	Neyveli Lignite Corporation	2x210	17.04.2002	58.8
9.	Simhadri Stage II	NTPC	1000	14.09.2007	80.9
10.	Tuticorin	NLC Tamil Nadu Power Ltd. (NTPL)	2x500	20.02.2008	72.5
11.	NLC Stage – II exp.	Neyveli Lignite Corporation	2x500	10.11.2008	70
12.	Vallur Thermal Power Plant (VTPP)	NTPC Tamil Nadu Energy Company Ltd. (NTECL)	3x500	26.08.2009	49.9
13.	Kudgi	NTPC	4000	03.11.2010	Allocation not received
14.	Neyveli New	Neyveli Lignite Corporation	1000	10.12.2010	32.38
15.	Pudimadaka	NTPC Neyveli Lignite Corporation	4000	31.12.2010	Allocation not received
16.	Sirkali	NTPC Neyveli Lignite Corporation	3x660	03.01.2011	Allocation not received
II.	**IPPs**				
A.	**Thermal**				
1.	RGCCPP	NTPC	359.58	06.01.1995	360
2.	KPCL	Kasargode Power Corporation Ltd.	20.436	12.08.1998	20.436

3.	BSES Combined Cycle Power Plant	BSES Kerala Power Ltd.	3x40.5+1x 35.5	03.07.1999	157
B.	**Small Hydro**				
4.	Ullunkal Hydro Power Project	Energy Development Company Limited	3	--	3
5.	Iruttukkanam Hydro Power Project	Viyyat Power Ltd.	3	07.06.2007	3
C.	**Co-generation Power Project**				
6.	M P Steel		Not Available		
7.	Philips Carbon Black Ltd.		Not Available		
D.	**Wind Power Projects**				
8.	Bhima & Brother, Alapuzha		2x600 kW	17.03.2008	Full capacity allocated to KSEB
9.	Popy Umbrella Mart, Alapuzha		2x600 kW	17.03.2008	
10.	Watts Electronics Pvt. Ltd., Kochi		750 kW	17.03.2008	
11.	Shah Agency, Bangalore		750 kW	17.03.2008	
12.	Cotton World, Bangalore		750 kW	25.03.2008	
13.	Ind-Bharath Power Infra Pvt. Ltd., Hyderabad		750 kW	26.03.2008	
14.	Eastern Condiments Pvt. Ltd., Kochi		750 kW	26.03.2008	
15.	Manjeera Constructions, Hyderabad		750 kW	27.03.2008	
16.	Zenith Energy Services (P) Ltd., Hyderabad		750 kW	27.03.2008	
17.	Mitcon Consultancy Services Ltd., Pune		750 kW	27.03.2008	
18.	Venkatrama Paultries Ltd., Guntur		750 kW	27.03.2008	
19.	Srinivasa Builders, Hyderabad		750 kW	27.03.2008	
20.	Sunstar Oversees Ltd., Delhi		4x750 kW	27.03.2008	
21.	Kerala Steel Associate, Kochi		500 kW	29.03.2008	
22.	Asian Star Co. Ltd., Mumbai		2x600 kW	31.03.2008	
23.	Asian Star Co. Ltd., Mumbai		600 kW	7.04.2008	
24.	Asian Star Co. Ltd., Mumbai		2x600 kW	23.04.2008	
25.	Plant Lipids (P) Ltd., Kolenchery		2x600 kW	25.07.2008	
26.	OEN Ltd., Kochi		600 kW	19.09.2008	
27.	Anna Aluminium, Kochi		600 kW	24.09.2008	
28.	Vinson Industries Pvt. Ltd., Visakapatanam		750 kW	30.09.2008	
29.	Balaji Heavy Lifters Pvt. Ltd., Kutch, Gujarat		750 kW	30.09.2008	
30.	Aditya Marine Ltd., Gandhinagar, Gujarat		750 kW	30.09.2008	
31.	S. Kumar, Rajkot, Gujarat		750 kW	30.09.2008	
32.	Bhima Jewels, M.G.Road, Ernakulam		600 kW	23.03.2009	
33.	Synthyte Industries Ltd., Kolenchery		3x600 kW	23.03.2009	
34.	Bhima Jewels, M.G.Road, Ernakulam		600 kW	24.03.2009	
35.	Bhima Jewellary, Trivandrum		2x600 kW	28.03.2009	
36.	Synthyte Industries Ltd., Kolenchery		2x600 kW	28.03.2009	
37.	ACV Prodcuts Pvt.Ltd., Coimbatore		750 kW	08.01.2010	
38.	M/s. Bhima Jewellery, Madurai		2x600 kW	30.09.2010	
39.	M/s. Bhima Jewellery, Nagarcoil		2x600 kW	30.09.2010	
40.	Anna Aluminium Pvt. Ltd.		2x600 kW	30.09.2010	

Annexure 12

Statement showing Chronology of events in Case-I bidding process by Kerala State Electricity Board

(Referred to in paragraph 3.1.7.3)

Date	Events
18.08.2008	KSERC ordered to procure power through competitive bidding.
11.05.2009	Board decided to carry out Case-I bidding process for procurement of 500 MW power for five years and constituted High Level Committee (HLC) to finalise the RFP, RFQ & PPA documents based on Guidelines issued by MoP.
July-August 2009	HLC modified the purchase plan for purchasing 300 MW RTC power and 100 MW Peak Power for a period of 5 years so as to commence the supply from April 2012.
13.11.2009	Board approved the modified bid documents and authorised CE (C&T) to take up with KSERC.
17.12.2009	KSEB filed petition with KSERC for approval of Case-I bidding process.
04.10.2010	Submitted application and KSERC approved the bid documents with certain modifications
11.04.2011	CE (C&T) invited tenders
04.08.2011	As per CERC Regulation 2009, effective from 1 January 2010, transmission corridor under MTOA would be available only upto a maximum period of 3 years as against 5 years. Full Time Members decided to re-tender Case-I bidding
02.06.2012	KSEB filed petition with KSERC for approval of revised Case-I bidding procedure.
15.10.2012	Approval of KSERC received on the revised RFP & RFQ.
12.11.2012	Revised tender notice for procuring 300 MW RTC power and 100 MW peak power for 3 years through Case-I bidding was issued.
22.04.2013	Board approved Case-I bidding for procuring 300 MW RTC and 100 MW RTC, (as against the tender requirement of 100 MW of peak power), from NVVN @ ₹ 4.494 per unit and PTC India Ltd., @ ₹ 4.449 per unit respectively, from 1 March 2014 to 28 February 2017.

Annexure 13

Statement showing weighted average purchase rate from IEX and UI by Kerala State Electricity Board

(Referred to in paragraph 3.1.7.3)

Month	Purchase from Indian Energy Exchange (Term Ahead/Day Ahead)		Unscheduled Interchange		Total		Average purchase rate	Medium Term Open Access Rate	Extra expenditure	
	MU	₹ in crore	MU	₹ in crore	MU	₹ in crore	(₹)	(₹)	Per unit (₹)	Total ₹ in crore
	1	2	3	4	5 (1+3)	6 (2+4)	7 (6/5)	8	9 (7-8)	10 (5x9)
2012 January	170.60	88.21	46.80	14.37	217.40	102.58	4.72	4.49	0.23	5.00
February	96.72	71.57	61.68	24.53	158.40	96.10	6.07	4.49	1.58	25.03
March	38.13	28.85	55.79	24.52	93.92	53.37	5.68	4.49	1.19	11.18
April	34.44	29.75	117.53	46.37	151.97	76.12	5.01	4.49	0.52	7.90
May	51.66	35.93	122.57	46.07	174.23	82.00	4.71	4.49	0.22	3.83
June	110.45	62.14	86.60	36.81	197.05	98.95	5.02	4.49	0.53	10.44
July	90.58	63.50	106.19	40.19	196.77	103.69	5.27	4.49	0.78	15.35
Aug	216.55	158.31	86.20	24.37	302.75	182.68	6.03	4.49	1.54	46.63
Sepember	137.74	98.04	72.53	23.38	210.27	121.42	5.77	4.49	1.28	26.92
October	203.29	138.08	59.01	18.71	262.30	156.79	5.98	4.49	1.49	39.08
November	171.55	118.65	54.34	13.30	225.89	131.95	5.84	4.49	1.35	30.49
December	101.25	71.14	72.99	17.64	174.24	88.78	5.09	4.49	0.6	10.45
2013 January	66.32	44.44	60.27	15.12	126.59	59.56	4.70	4.49	0.21	2.66
February	40.25	23.08	57.13	18.10	97.38	41.18	4.23	4.49	-0.26	-2.53
March	72.54	50.13	62.83	22.32	135.37	72.45	5.35	4.49	0.86	11.64
Total	**1602.07**	**1091.82**	**1122.46**	**385.80**	**2724.53**	**1467.62**				**244.07**

Note: Though the new contract was for supply of power for three years from March 2014, the extra expenditure is worked out upto March 2013, the period covered in audit.

Annexure 14

A. Statement showing average purchase rate from Short Term Market vis-à-vis CGS rate by Kerala State Electricity Board

(Referred to in paragraph 3.1.7.8)

Year & Month	Purchase from Traders		Average Purchase Rate per unit	CGS Rate per unit	Difference in rate
2012-13	MU	**Amount (₹ in crore)**	(₹)	(₹)	(₹)
July	264.48	122.70	4.64	3.200	1.44
August	89.50	41.31	4.62	3.042	1.57
September	79.71	38.09	4.78	3.136	1.64
October	65.35	35.60	5.45	3.166	2.28
November	186.78	101.60	5.44	3.218	2.22
December	114.81	58.58	5.10	2.968	2.13
February	327.58	221.82	6.77	2.933	3.84
March	245.87	163.41	6.65	3.047	3.60

Note: Figures for January 2013 was taken as a base for comparison. Since KSEB stated that shortfall in energy from Case I bidding was m[illegible]ough IEX and UI, purchase from Traders reckoned in this case

B. Statement showing extra expenditure for purchase of power from Short Term Market by Kerala State Electricity Board

Year & Month	CGS Share Allocation from MoP	CGS Share net entitlement	CGS Share actually received	Short supply by CGS	Extra cost per unit as shown above	Excess Expenditure
2012-13	(MU)	(MU)	(MU)	(MU)	(₹)	(₹ in crore)
July	912.90	810.65	638.40	172.25	1.44	24.80
August	910.24	810.65	585.97	224.68	1.57	35.27
September	883.20	784.50	602.14	182.36	1.64	29.91
October	856.24	732.20	689.01	43.19	2.28	9.85
November	916.21	784.50	702.70	81.80	2.22	18.16
December	771.42	679.90	626.92	52.98	2.13	11.28
February	474.72	418.40	408.55	9.85	3.84	3.78
March	919.77	810.65	724.80	85.85	3.60	30.91
Total	**6644.70**	**5831.50**	**4978.50**	**852.96**		**163.96**

Source: Compiled by Audit from the daily statement of purchase by CE (Transmission) System Operation.

Annexure 15

Chronology of events in submission of DPRs by Kerala State Electricity Board

(Referred to in paragraph 3.2.7.5)

Sl. No.	Date	Events	Outcome	Remarks
1	April 2005	Submission of first DPR for all the 14 districts	REC approved DPRs for Idukki and 6 Northern districts	REC rejected the DPRs of 7 Southern Districts as KSEB submitted 2 DPRs per district, instead of single DPR required under guidelines.
2	July 2005	Execution of Tripartite Agreement among GoK, REC and KSEB	GoK entrusted the implementation of the Scheme to KSEB	
3	October 2005	Submission of modified DPRs for 7 Southern districts	REC approved the DPRs "in principle".	But REC shifted it to 2nd phase in 11th Plan
4	February 2007	NTPC Electric Supply Company Ltd (NESCL) was entrusted with the preparation of revised DPRs of six Northern districts	NESCL prepared DPRs for only two districts (Palakkad and Wayanad)	NESCL withdrew from the assignment after this.
5	January 2009	Revised DPR for Idukki submitted	REC approved the revision of DPR	Revision of DPR was required due to defective survey/estimate by Dy.CE. Idukki
6	September – October 2009	Revised DPR for 6 Northern districts	REC approved the revised DPR in March 2010	As some works proposed under the Scheme were already done by KSEB. Revision was required.
7	September 2010 and May 2011	Submission of Revised DPRs for 7 Southern districts	REC approved the proposal in December 2011[1] and February 2012[2]	As some works proposed under the Scheme were already done by KSEB, Revision was required.
8	September 2012	Approval of REC for direct execution by KSEB instead of Turnkey	REC intimated (December 2012) that Monitoring Committee accorded permission to execute the work directly by KSEB.	No progress in the execution so far though REC released (January/February 2013) ₹25.62 crore.
9	December 2012 to March 2013	Submission of DPR for DDG (4th Component of the Scheme)	Sanction from REC awaited	Total project cost was ₹24.25 crore to benefit 870 HHs.

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[1] Letter No.REC/TVM/RGGY/Sanction/2011-12/430 dated 19.12.2011

[2] Letter No.REC/TVM/RGGY/Sanction/2011-12/545 dated 14.02.2012

Annexure 16

Chronology of events in tendering, award of contract and outcome by Kerala State Electricity Board
(Referred to in paragraph 3.2.7.8)

Sl. No.	Date	Event	Outcome	Remarks
1	September 2005	Invitation of Turnkey tenders for Idukki and 6 northern districts	No response	KSEB found lack of adequate publicity as the reason
2	December 2005	KSEB sought permission for direct execution of work	REC denied (21 December 2005) the request.	Insisted KSEB to go as per the guidelines of MoP for the release of funds by REC.
3	January 2006	Retendered the works for 7 Districts	Quotes received were higher than the estimates. Idukki - 19.45%, other districts - 76 to 88%	No further action by KSEB
4	October 2006	KSEB decided to award work for Idukki	Delayed implementation	Final decision and award of work for 6 districts delayed
5	January 2007	Award of work for Idukki	Awarded to ICSA, Hyderabad at ₹17.65 crore.	KSEB took one year to award the work
6	August 2010 - March 2011	Award of work for 6 Northern districts	Issue of 7 work orders to four contractors for ₹90.36 crore	Work in progress
7	September 2012	Approval of REC for departmental execution by KSEB	REC intimated that Monitoring Committee accorded permission to execute the work departmentally.	₹25.62 crore released in (January/February 2013)

Source: Compiled by Audit from the records of KSEB

Annexure 17

Details of works awarded for REDB in three districts[3] and for VEI in six northern districts by Kerala State Electricity Board

(Referred to in paragraph 3.2.7.8)

Sl No	Name of District & Name of Contractor	Amount of contract (₹ in crore)	Date of award of work	Scheduled date of completion	Actual date of completion
1	**Kasargode** Bentec Electrical & Electronics, Kolkota	12.46	31.08.2010	31.08.2011	Not completed
2	**Kannur** Bentec Electrical & Electronics, Kolkota	15.62	08.09.2010	08.09.2011	Do
3	**Kozhikode** Bentec Electrical & Electronics, Kolkota	12.24	27.11.2010	27.11.2011	Do
4	**Palakkad** Aravalli Infra Power Limited, New Delhi	12.24	29.01.11	29.01.12	Do
5	**Wayanad** Aravalli Infra Power Limited, New Delhi	10.27	27.11.2010	27.11.2011	Do
6(a)	**Malappuram**[4] **REDB** Aster Pvt Ltd. Hyderabad	8.27	23.08.2011	23.8.2012	Land development in progress
6(b)	**VEI** East cost Construction & Industries Ltd, Chennai	19.26	29.03.2011	29.03.2012	Not completed

Source: Details collected from the records of KSEB

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[3] **Palakkad, Malappuram and Wayanad.**

[4] Separate contracts for REDB and VEI in Malappuram district

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