CHAPTER III

PERFORMANCE AUDITS RELATING TO STATUTORY CORPORATION

POWER PURCHASE TRANSACTIONS OF KERALA STATE ELECTRICITY BOARD

IMPLEMENTATION OF RAJIV GANDHI GRAMEEN VIDYUTIKARAN YOJANA

Chapter III

PERFORMANCE AUDITS RELATING TO STATUTORY CORPORATION

KERALA STATE ELECTRICITY BOARD

3.1 POWER PURCHASE TRANSACTIONS OF KERALA STATE ELECTRICITY BOARD

Executive Summary

Introduction

Kerala State Electricity Board (KSEB) is the distribution licensee for power for the State of Kerala.

Planning

The peak demand of power of the State ranged from 2765 Mega Watts (MW) to 3348 MW during 2008-13. Deficit ranged from 222 MW to 528 MW during 2008-13. KSEB planned to meet the deficit in demand and energy requirement mainly by commissioning Hydel schemes which was a cheaper source of energy. However, as against the required capacity addition of 1380.39 MW, actual addition in generation capacity was only 214.20 MW from 2008-09 to 2012-13. Considering the uncertainties in Hydel projects and price fluctuation faced in the international crude oil market for the fuel used by Independent Power Producers (IPPs), KSEB envisaged the necessity for purchasing sufficient power from Coal based Inter-State Projects on medium/long term. However, due to failure in implementing medium/ long term power purchase plans (Case I), KSEB had to purchase costly power from short term market at extra cost of ₹244.07 crore.

Power Swap Agreement

KSEB resorts to swap mechanism to supply power when there is a comfortable position of power and arrange for return of power during deficit period. KSEB entered into swap arrangement though they had no surplus power to offer on swap which led to purchase of power (₹43.29 crore) to fulfill the commitment. Traders did not supply the entire agreed swap quantity forcing KSEB to purchase power on Short Term basis thereby incurring extra expenditure of ₹30.95 crore.

Monitoring Mechanism

Ministry of Power decides the entitlement of energy from Central Generating Stations (CGS) to each State. Failure to initiate action in getting compensation for shortfall in energy supplied from CGS resulted in extra expenditure of ₹163.96 crore.

The approval of Aggregate Revenue Requirement and Expected Revenue from Charges (ARR) for each year was based on norms for Transmission & Distribution (T&D) loss fixed by Kerala State Electricity Regulatory Commission (KSERC). KSEB failed to achieve T&D loss norms fixed by KSERC and had to make up excess loss by procuring additional power at higher cost on short term basis at a cost of ₹172 crore.

Recommendations

Audit has made seven recommendations which include need for setting up of a separate Trading Wing to arrange swap transactions and purchase from Traders and Power Exchanges through Short Term basis, adherence to regulations and guidelines while floating tenders, review of purchase from costly IPPs, monitoring in receipt of allocated power from CGS, etc.

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 - 10 pm) 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 purchases from Power Exchanges (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 as 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.

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 purchases 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.

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

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 purchases 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 provisions 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,

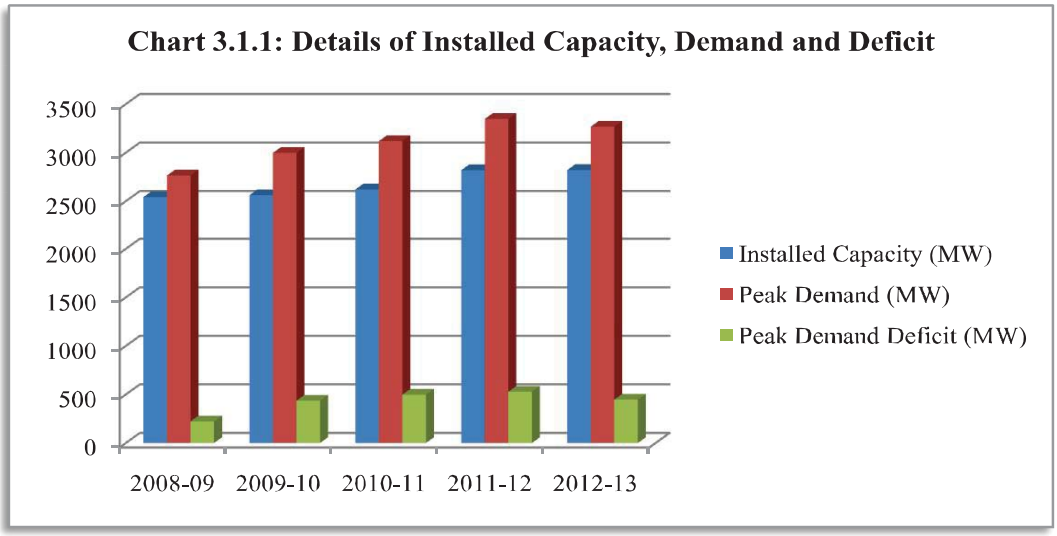
discussion of audit findings with the Management and issue of Draft Performance Audit Report to KSEB/Government for comments. The entry conference to explain the audit objectives was held in May 2013. Subsequently, audit findings were reported to KSEB and the State Government (October 2013) and discussed 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 as 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 2007-12. 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 expected 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-à-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 requirement

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 in formulating Plan for Demand Deficit Management:

[2]Including T&D Losses.

- 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.

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.

Baitarni Coal based Inter-State Project

As per the new Coal Block Allocation Policy of the Government of India, Ministry of Coal (MoC) allotted (July 2007) the Baitarni 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 Baitarni 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 has 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 Baitarni project, the High Court of Odisha has 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

[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.).**

agreements. The average purchase prices of power from CGS and IPPs during the period 2008-13 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 (11 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 apprehensions 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.

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

[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 200 MW) and Vandana Vydyuth Limited, Raipur (offered 40 MW).**
[9] **CERC (Grant of Connectivity, Long-term Access and Medium-term Open Access in Inter-State Transmission and related matters) Regulations, 2009.**

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.

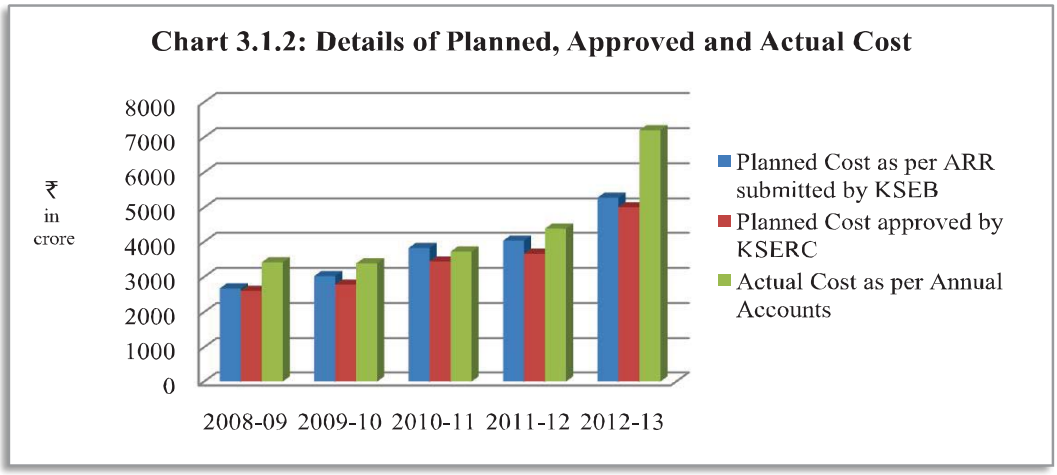
(iii) On account of undue delay in arranging power supply on medium term basis through Case I bidding route, KSEB had to purchase costly power from short term/day ahead market through power exchanges, traders, etc. The avoidable extra expenditure even at the weighted average rate of both Indian Energy 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.

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.

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

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 purchases 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*, purchases 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.

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	June	July	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	**1295.96**
Peak Demand Deficit (in MW)	240	291	207	102	104	163	155	34	105	157	188	43	–

[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 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 2011-12 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. 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 Rajdhani 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 in 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:

[12] **Approval was received on 1 June 2011.**
[13] **Vide Board Order (FM) No.1146/2011 (Comml/SWAP/2011-12) dated 07.05.2011 .**
[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 the 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.

Finalisation 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:

[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.**

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)	20.08.1998 & 31.03.2016	21.178	185.52 per annum	14.05.2001
BSES Kerala Power Limited (BKPL)	03.05.1999 & 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:

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

Year	Unit in MUs	Fixed charges (₹ in crore)	Variable 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 decreased from 847.25 MU to 131.34 MU during the five years ended 2012-13 and average cost per unit stood at

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

₹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 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.

[18] Section 86(1)(e) .

However, the fact remains that KSEB as a 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 down 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 CERC (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 the 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 (up to December 2012)
Energy Development Company Limited. (Ullunkal Hydro Power Project)	Small Hydro	51,514
Viyyat Power Private Limited. (Iruttukanam Small Hydro Electric Project, Kerala)	Small Hydro	50,955
Zenith Energy Services (P) Limited	Wind	85,052
Total		**1,87,521**

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 between ₹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.

In this connection it was noticed in audit that the CE (T-SO) had intimated (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 (September 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

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

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 Kasargode 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*

[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.

Recommendations

- **Long term power purchase plans should be implemented in a time bound manner.**
- **Short term power purchase activities may be streamlined by constituting a separate Trading Wing at System Operation, Kalamassery to arrange swap transactions, purchase from Traders and Power Exchanges through Short Term Open Access.**
- **KSEB should adhere to provisions in regulations and guidelines issued by MoP/CERC/KSERC while floating tenders.**
- **Uneconomic purchase of power from IPPs (BKPL and KPCL) may be reviewed after the expiry of the existing PPAs.**
- **Shortfall in receipt of allocated power from CGS may be taken up with appropriate authorities.**
- **A scientific study may be conducted to determine optimum transmission and distribution loss targets so that power procurement can be done in a planned manner.**
- **The scope of Internal Audit may be widened to include power purchase activities and vetting of Draft PPAs.**

3.2 IMPLEMENTATION OF RAJIV GANDHI GRAMEEN VIDYUTIKARAN YOJANA IN KERALA

Executive Summary

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. As per the Scheme, 90 per cent of the total implementation cost was to be financed by GoI as capital subsidy through Rural Electrification Corporation Limited (REC) and the remaining 10 per cent was to be contributed by the respective State Governments. Kerala State Electricity Board (KSEB) was designated as Project Implementing Agency (PIA) of the Scheme in the State.

Planning

KSEB did not conduct detailed survey which resulted in revision of Detailed Project Reports (DPRs)and consequent delay in implementing the Scheme. Electrification of public places as envisaged in the Scheme was not taken up and they were deprived of the benefits of the Scheme.

Out of the DPRs for the total 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. In respect of the seven districts, revised proposals were submitted after a gap of five years from the original proposal.

Financial Management

Government of Kerala did not contribute 10 per cent of the total implementation cost of the projects as required under the Scheme. Hence KSEB had to arrange the same by way of loan from REC which resulted in financial burden of ₹7.56 crore.

Execution

Out of the 14 projects taken for implementation, only one project (Idukki district) had been completed so far (March 2013) as against scheduled completion date of March 2010 for the whole State. There were abnormal delays in the implementation of the Scheme due to defective DPRs, incorrect estimation of project quantity and consequent revision of DPRs. Though electrification of 1274 villages was targeted, 37 villages in Idukki district alone were completed so far.

Project Monitoring

The State and District Level Co-ordination Committees were set up by the State Government for reviewing rural electrification. The State level Committee held only three meetings during entire period of the Scheme and District level Committees held meetings which ranged from one to eleven in the Northern districts.

Impact	Recommendations
Deficient DPRs and delays in implementation at various stages reduced the coverage and benefits of the Scheme by providing electricity connection only to 0.55 lakh Rural Households (RHHs) as against 4.68 lakh RHHs proposed. Further, 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.	***KSEB should fix responsibility for the deficiencies in the DPR and delay in various stages of implementation. KSEB should take steps to avoid delay in completion of the Scheme to provide access to electricity for all RHHs as envisaged in the Scheme. The meetings of the Committees should be regularly conducted to resolve bottlenecks and constraints. The State Government may reimburse loans taken by KSEB from REC as required under the Scheme.***

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 nsmission and distribution of electricity. The by the electricity utility through turnkey rural distribution was to be done through

deprived of the benefits of the Scheme.

Out of the DPRs for the total 14 districts, submitted by KSEB at the commencement of th

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].

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

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.

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 an 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:

Table 3.2.1: Details of progress of implementation

Component	Phase I (Idukki District)		Phase II (6 Northern Districts)		Phase III (7 Southern Districts)		Total		Per-centage
	Target	Achiev ement	Target	Achiev ement	Target	Achiev ement	Target	Achieve-ment	
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
b) LT 3 Phase (KMs)	62.14	63.51	358.57	136.32	269.67	Nil	690.38	199.83	29
c) 11KV Line(KMs)	350.90	249.94	995.16	442.82	796.52	Nil	2142.58	692.76	32
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	

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

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	Unspent 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.

KSEB resubmitted the DPRs for seven southern districts in October 2005. REC did not consider the revised DPRs submitted by KSEB up to 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.

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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.**

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.

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 Schemes 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.

[26] **REDB,VEI, DDG and Household electrification**
[27] **A small area in a village is referred as *'Kara'***
[28] **As per the report of Accelerated Rural Electrification project -2005**

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.

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.

[29] **Kodumphuzha, 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 the 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 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

[31] **Malappuram,Wayanad,Palakkad and Ernakulum**
[32] **Thodannur Block and Tanur Block**

₹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 consequentially 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.

Phase 1 – 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 kilo meter 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.

KSEB replied that selection of conductors depended on the prevailing load conditions. However, in Kasargode District ACSR Raccoon conductors for 11KV 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

[33] **Kozhikode, Malappuram and Wayanad**

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) 17,238 service connections were provided in Idukki district (Phase I). Audit, however, noticed that 2,821 BPL households still remain to be electrified. In the six northern districts (Phase II) KSEB provided 37,904 service connections as of March 2013 against the target of 55, 965 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 up to 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.

In the Full Time Members meeting held in February 2013, KSEB decided to take up the matter with GoK to request GoI 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.

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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 land farming, cleaning of public places, collection of garbage etc, through concerted community action under the leadership of Local self Governments.**

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

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.

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.

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

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 centers, etc., remain unelectrified.

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

[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.**

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. 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.

[41] **90 *per cent* of ₹ 11.69 crore.**
[42] **90 *per cent* of ₹4.37 crore.**
[43] **90 *per cent* of ₹ 33.17 crore.**
[44] **90 *per cent* of ₹ 2.22 crore.**

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 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.**

Recommendations

KSEB should fix responsibility for the deficiencies in the DPR and delays in various stages of implementation. KSEB should also take steps to avoid delay in completion of the Scheme to provide access to electricity for all rural households as envisaged in the Scheme. The meetings of the Committees should be regularly conducted to resolve bottlenecks and constraints. As GoK has not contributed the required share of 10 *per cent* of the project cost (₹7.56 crore) KSEB had to arrange the same by way of loan from REC and this may be reimbursed.