



FIFTEENTH KERALA LEGISLATIVE ASSEMBLY

**COMMITTEE
ON
PUBLIC UNDERTAKINGS
(2023-2026)**

TWENTY NINTH REPORT

(Presented on 8th July, 2024)

SECRETARIAT OF THE KERALA LEGISLATURE
THIRUVANANTHAPURAM

2024

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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, 2015)**

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COMMITTEE ON PUBLIC UNDERTAKINGS (2023-2026)

COMPOSITION

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Shri Mohanan O, *Under Secretary.*

INTRODUCTION

I, the Chairperson, Committee on Public Undertakings (2023-26) having been authorised by the Committee to present the Report on its behalf, present this 29th 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, 2015 relating to the Public Sector Undertakings of the State of Kerala.

The aforesaid Report of the Comptroller and Auditor General of India was laid on the Table of the House on 28-6-2016. The consideration of the audit paragraphs included in this report and examination of the departmental witness in connection thereto were made by the Committee on Public Undertakings (2021-2023) at its meeting held on 9-9-2021.

This Report was considered and approved by the Committee (2023-26) at its meeting held on 4-7-2024.

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

The Committee wishes to express thanks to the officials of the Power Department of the Secretariat and the 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 Department and Finance Department and the officials of the Kerala State Electricity Board Limited who appeared for evidence and assisted the Committee by placing their views before the Committee.

Thiruvananthapuram,
8th July, 2024.

E. CHANDRASEKHARAN,
Chairperson,
Committee on Public Undertakings.

REPORT

ON

KERALA STATE ELECTRICITY BOARD LIMITED

Audit Para 2.3(2014-15)

Implementation of Restructured Accelerated Power Development and Reforms Programme by Kerala State Electricity Board Limited.

Executive Summary

Introduction

Government of India (GoI), Ministry of Power (MoP) approved (September 2008) 'Restructured Accelerated Power Development and Reforms Programme' (RAPDRP) with the aim of restoring commercial viability of power distribution sector by putting in place appropriate mechanism so as to substantially reduce Aggregate Technical and Commercial (AT&C) loss.

Physical progress of projects

MoP sanctioned 43 projects each under Part A and Part B and three Supervisory Control and Data Acquisition (SCADA) projects for implementation in the State. As per the original guidelines, Part A and Part B were to be completed within three years. GoI extended the completion period to five years. However, the projects could not be completed within five years and was further extended by one more year.

Project formulation and planning

Implementation of RAPDRP was to be preceded by policy initiatives like undertaking measures for prevention of theft of power, constitution of Special Courts to deal with cases of power theft, etc. Action taken by KSEBL was, however, inadequate to supplement efforts under RAPDRP to bring down AT & C loss to 15 percent.

Fund Management

Non-opening of project-wise bank account and non-maintenance of project wise separate accounts led to diversion of funds and ineffective monitoring of the projects. KSEBL made irregular interest free advance payment of ₹14.50 crore to the turnkey contractor.

Implementation of the projects

Delay in appointment of IT implementing Agency, problems in implementation of Meter Data Acquisition System, slow progress of Geographic information System and partial accomplishment of Customer Care Service Centre led to time overrun for more than three years. Erroneous price loading resulted in extra expenditure in implementation of Part A Project to the extent of ₹27 crore.

Delay in submission of DPRs and financial tie-up, delay in completion of work due to non-procurement of material like ABC, UG cables, deviation from DPR, delay and extra expenditure incurred in awarding and implementation of turnkey contract, constituted time overrun for more than three years and cost overrun to the extent of ₹129 crore. None of the SCADA project could be completed due to delay in completion of Part B projects.

Undue delay in completion of RAPDRP projects led to non-realisation of envisaged benefit of ₹202.70 crore by way of reduction AT & C loss.

Introduction

2.3.1 Government of India (GoI), Ministry of Power (MoP) approved (September 2008) 'Restructured Accelerated Power Development and Reforms Programme' (RAPDRP) with the aim of restoring commercial viability of power distribution sector by putting in place appropriate mechanism so as to reduce Aggregate Technical and Commercial (AT&C) loss substantially. AT & C loss was planned to be reduced by plugging pilferage points, supply of quality power, faster identification of faults and early restoration of power, proper metering, strategic placement of capacitor banks and switches and proper planning and design of distribution network.

Coverage of area under RAPDRP was urban area-towns and cities with a population of more than 30,000. Projects under RAPDRP were to be taken up in

two parts, Part A and Part B. Under Part A, Supervisory Control and Data Acquisition (SCADA) or Distribution Management System (DMS) shall also be installed in eligible towns and cities with population of more than four lakh and annual input energy of 350 million units (MUs). The activities involved in Part A and Part B projects were as shown in Table below.

Table2.28: Activities under Part A and B projects

Activities under Part A project	
a	Implementation of Information Technology (IT) modules for collection of base line data to capture AT&C loss in a precise manner without manual intervention and also to plan and implement corrective measures in Part B.
b	Energy accounting and audit
c	Redressal of consumer grievances and establishment of IT enabled consumer service centres, etc.
d	Implementation of SCADA or DMS, GIS based Consumer Indexing and asset mapping, etc.
Activities under Part B project	
a	Renovation, modernisation and strengthening of 11 kV ¹ level substations, transformers/ transformer centres, re-conductoring of lines at 11 kV level and below, Load Bifurcation, Feeder segregation, Load Balancing, Aerial Bunched Conductoring in thickly populated areas, HVDS, installation of capacitor banks and mobile service centres, etc. In exceptional cases, where sub-transmission system is weak, strengthening at 33 kV or 66 kV levels may also be considered.

Execution of quadripartite agreement between power utility, GoI, PFC and State Government was a pre-requisite for release of funds under RAPDRP. Accordingly, a quadripartite agreement (MoA) was executed (August 2009) for implementation of RAPDRP in Kerala.

In Kerala, 43 towns were eligible for implementation of RAPDRP. All the 43 projects submitted by Kerala State Electricity Board Limited (KSEBL) under Part A were sanctioned (November 2009) by GoI and 43 projects under Part B were sanctioned on various dates between 2010 and 2012. Further, SCADA was sanctioned by GoI for three eligible towns (Thiruvananthapuram, Ernakulam and Kozhikode) under Part A.

The main objectives of RAPDRP were to :

- reduce AT &C loss to 15 percent
- bring about commercial viability in the power sector
- reduce outages and interruptions.
- Increase consumer satisfaction.

Scope of Audit

2.3.2 The Performance Audit was conducted with a view to assess the performance of KSEBL in conceptualisation and implementation of RAPDRP with reference to the objectives set for the programme covering all 43 part A projects, three SCADA projects and 25 Part B projects from 1st April 2009 to 31st March 2015 on the basis of the documents/information maintained by Government of Kerala (GoK) and KSEBL.

Audit Objectives

2.3.3 The Main audit objectives were to assess whether:

- policy initiative and planning required for implementation of the programme were appropriate and adequate; and
- the programme has been implemented in an efficient effective and economical manner.

Audit Criteria

2.3.4 The audit criteria has been taken from following sources:

- National Electricity Policy formulated under Electricity Act, 2003;

- Memorandum of Agreement /Quadripartite Agreement;
- Guidelines issues by PFC/MoP;
- General Financial Rules;
- Detailed Project Reports;
- Work Orders;
- Minutes of Steering Committee meetings: and
- Orders and circulars issues by KSEBL and the Government.

Audit Methodology

2.3.5 The methodology adopted for attaining the audit objectives with reference to audit criteria consisted of explaining the audit objectives to top management of the KSEBL and the Government, scrutiny of records of the audited entity, analysis of data with reference to criteria, issue of audit queries, and discussion of audit findings with Management and issue of Draft performance Audit Report. The audit objectives, audit criteria and scope of the performance audit were explained to the Management in an Entry Conference (23rd June 2015). Audit findings were also discussed in the Exit conference held on 3rd December 2015.

Views expressed by the Management and GoK have been duly considered while finalising the Performance Audit Report.

Audit Findings

2.3.6 Audit findings are discussed in the succeeding paragraphs.

Physical progress of projects

2.3.7 MoP sanctioned 43 projects each under Part A and Part B and three SCADA projects for implementation in the State. As per the original guidelines, Part A and Part B projects were to be completed within three years from the date of

sanction. Later, GoI extended the completion period to five years for both Part A (November 2014) and Part B (between June/December 2015). However, the project could not be completed within five years and was further extended by one more year.

Status of the projects as of September 2015 was as given below:

Table 2.29: Status of the projects as of September 2015

Items	Part A	SCADA	PartB
(1)	(2)	(3)	(4)
Projects sanctioned	43	3	43
Sanctioned projects cost (₹in crore)	214.38	83.15	1078.30
Date of approval by PFC	November 2009	February-June 2011	June 2010 - August 2012
Scheduled completion date ²	November 2014	November 2014	June 2015 (11 Nos.) August 2015 (21 Nos.) December 2015 (8Nos.) February 2016 (2 turnkey) March 2017 (1 turnkey)
Name of the contractor	Korea Electric Power Data Network Company Limited(KDN)	Schneider Electric India Private Limited	40 projects by KSEBL and three projects through turnkey contracts
Projects completed	31	Nil	Nil
Loan released by GoI up to 31-3-2015 (₹in crore)	64.31	24.95	161.74

² Scheduled completion date was five years from the date of sanction. All projects were further extended by one more year except one Part B project for which completion date is March 2017.

(1)	(2)	(3)	(4)
Counter part loan from REC up to 31-3-2015 (₹in crore)	N/A	N/A	205.81
Amount utilised up to 31-3-2015 (₹in crore)	59.00	4.94	377.81
Projects selected for audit (Number)	43	3	25

As evident from the *Table*, while only 31 projects had gone-live out of 43 Part A projects, none of the SCADA projects, and Part B projects could be completed as of September 2015.

The main reasons for delay in completion of the Part A and Part B projects were poor fund management, deficient implementation of the project and inadequate monitoring. Policy formulation and planning required for attainment of objectives of RAPDRP was also deficient. These are discussed in succeeding paragraphs.

Policy Formulation and Planning

2.3.8 Implementation of RAPDRP in the State was to be preceded by certain policy initiatives like preparation of DPR, putting in place necessary systems and undertaking measures for prevention of theft of power, constitution of Special Courts to deal with cases of power theft, etc. Compliance of KSEBL to these pre-requisites is discussed below.

Faulty preparation of DPR

2.3.9 Detailed Project Reports(DPRs) of 43 Part B projects of RAPDRP were approved by GoI on various dates between June 2010 and August 2012. Audit scrutiny of 25 town schemes revealed that there was faulty preparation of DPR as evident from a few instances cited in **Appendix 5**.

Measures for prevention of theft

2.3.10 The main objective RAPDRP was to bring down AT &C loss to 15 percent. Any illegal consumption of power, which is not correctly metered, billed and revenue collected, causes commercial loss to the utilities. As per Section 135 of Electricity Act, 2003, illegal consumption of energy shall be punishable with imprisonment for a term which may extend to three years or with fine or with both.

14 Anti Power Theft Squads (APTS) were constituted by KSEBL exclusively to detect cases of theft of energy. Besides, the division and section squad also conducted surprise inspections to detect theft of energy. During 2010-11 to 2014-15, APTS and division and section squads detected 2390 cases of theft of energy and ₹15.66 crore was realised as penalty as detailed in **Table 2.30**.

Table 2.30: Details of detection of theft of energy

Sl. No.	Particulars	2010-11	2011-12	2012-13	2013-14	2014-15	Total
1	Number of consumers (in crore)	1.01	1.05	1.08	1.10	1.10 ³	
2	Number of inspections conducted	23479	24090	21609	21758	31369	
3	Percentage of checking (2/1)*100	0.23	0.23	0.20	0.20	0.28	
4	Total irregularities detected in Sl.No.2	2980	3167	3036	3392	4446	17021
5	Number of theft cases in Sl.No.4	386	336	386	386	896	2390
6	Total amount realised (₹in crore)	2.53	2.16	2.58	2.78	5.61	15.66
7	Number of cases pending	3	4	4	9	33	53

3 As figures for 2014-15 were not available, figures of 2013-14 were adopted.

- No target was fixed by APTS to the units for conducting inspection of premises of consumers.
- The percentage of checking of consumers on an average was between 0.23 and 0.28 during 2010-11 to 2014-15.
- Theft cases were detected in large commercial and industrial consumers like restaurants and hotels, shopping malls, etc., on inspection by APTS. The percentage of checking by APTS wing was less than five percent in these cases also.
- Analysis of eight pending cases involving recovery of ₹21.82 lakh revealed that no follow up action was taken by KSEBL.
- The surge in detection of theft cases in 2014-15 when number of inspection increased points to the need for strengthening the APTS Wing further.

GoK replied (January 2016) that for increasing the percentage of inspection, huge manpower is required as consumer base in KSEBL is 1.16 crore. Standing instructions were, however, issued to conduct a minimum of 100 inspections in a month and the units were conducting 200 inspections in a month.

The reply was not acceptable since the inspection conducted was inadequate to supplement efforts under RAPDRP to bring down AT&C loss to 15 percent.

Non-constitution of Special Courts

2.3.11 The National Electricity Policy lays special emphasis on time bound reduction of transmission and distribution loss and speedy implementation of stringent measures against theft of energy. As per Section 153 of the Electricity Act, 2003, GoK was to constitute Special Courts for speedy trial of offences relating the theft of energy.

Instead of constituting Special Courts, GoK designated 43 existing District and Session Courts, Additional District Courts and Section Courts as Special Courts with the concurrence (July 2007) of the High Court of Kerala thereby defeating the objective of constituting Special Courts and denying speedy trial of offences relating to theft of energy. Due to non-setting up of Special Courts as envisaged in the National Electricity Policy, none of the 53 cases of theft of energy could be disposed.

The Government did not give any reply about formation of these Special Courts.

Recommendation No.1 : Inspection by APTS should be strengthened to bring down AT&C loss to 15 percent. GoK should form Special Courts to ensure disposal of theft cases.

Fund Management

Non-opening of project-wise bank account

2.3.12 As per Memorandum of Agreement (MoA), KSEBL was to open project-wise escrow bank account for Part A and Part B projects to ensure debt servicing of principal, interest and other charges during pendency of the loan to the satisfaction of the nodal agency. Funds provided shall not also be diverted for any other scheme or purpose.

KSEBL opened a separate bank account for the implementation of the 43 Part A and B projects and three SCADA projects. First instalment of loan amounting to ₹251 crore received during January 2010 to December 2012 for Part A and B projects and SCADA projects were deposited in the bank account. Violating the guidelines of RAPDRP, the amounts were transferred to routine account of KSEBL within five days of receipt.

Non-maintenance of project-wise accounts

2.3.13 As per MoA, KSEBL was also to open separate project-wise accounts and sub-accounts immediately, for separate accounting classification, both on the receipt and expenditure side for enabling proper audit certification.

CE (Corporate Planning) directed (December 2009) section offices, sub-division offices and division offices to maintain separate project-wise register. Expenditure was also to be booked under RAPDRP head and RAPDRP bills bound separately.

Audit examined all Part A and Part B projects and noticed that:

- No separate register and separate bank account was maintained for these projects. Due to this, payment to contractors was effected through the normal account of the circle/division of the project area.

- Eventhough there was a full fledged Finance and Accounts Wing under Director(Finance), there was ineffective monitoring on the maintenance of project-wise separate account.
- In respect of 40 Part B projects executed departmentally, there was no separate purchase of material. The material required for RAPDRP work was issued and accounted under normal Material at Site Account (MASA) of the Division or Section concerned and RAPDRP material was clubbed with normal work material as illustrated below:

Table 2.31: Details of RAPDRP and Non-RAPDRP material clubbed under MASA

Month	Electrical Section	Material Consumption Statement Number	Nature of work
July 2014	Kilikolloor	48/14-15	Normal Work
		49/14-15	RAPDRP work
		50/14-15	Normal work

Due to clubbing, availability of material or diversion of material held for RAPDRP work at any point of time could not be determined and RAPDRP work bills were bound along with normal work bills.

As no separate account was maintained for RAPDRP work, financial progress of Part B projects was arrived at by simply multiplying the executed quantity or physical progress in km/numbers with the cost estimate as provided in DPR and had no connection with the actual expenditure incurred.

GoK replied (January2016) that for administrative convenience, project-wise accounts were not opened. Material were procured centrally for funded schemes and normal work and during emergency or natural calamities, material were diverted to restore power supply.

The reply was not acceptable as non-maintenance of project-wise separate account was a clear violation of guidelines/MoA which resulted in non availability of proper records for audit certification and for calculating the actual expenditure incurred for the scheme.

Recommendation No.2: Separate project-wise accounts should be opened for having better control over expenditure and project monitoring.

Irregular payment of interest free advance

2.3.14 As per clause 14.1 of special conditions of contract for execution of Part A projects, release of payments was performance based, where payments would be made for measured deliverables and outputs. As per the payment schedule, payment of 5 percent (on approval of design), 25 percent (installation of hardware), 20 percent (installation of software), 30 percent (approval of user acceptance test) were permissible on completion of prescribed milestone. There was no provision for payment of advance on delivery of materials.

Violating the above clause, based on the recommendation of the Chairman and Managing Director, Board of Directors decided (August 2014) to pay interest free advance of ₹14.50 crore to KDN, being 60 percent of payment against the security of material delivered and corporate guarantee executed by KDN. Thus, payment of interest free advance of ₹14.50 crore was not only against scheme guidelines but it also amounted to undue favour to the contractor.

Implementation of projects

2.3.15 Implementation of Part A projects under RAPDRP was aimed at capturing accurate figures of AT&C loss through installation of IT module for data acquisition in the project area along with establishment of IT enabled customer services. Part B projects aimed at strengthening transmission and distribution networks to bring down AT&C loss to 15 percent.

Eventhough all 43 Part A projects were to be completed by November 2014 and 40 Part B projects between June 2015 and March 2017, only 31 Part A projects had, however, been completed as of September 2015.

Non-completion of projects was due to delay in installation of IT module for data acquisition and delay in completion of IT enabled customer care services

envisaged under Part A and delay in completion of distribution strengthening works under Part B. Non-completion of projects led to non-achievement of objectives of RAPDRP and cost escalation besides probable non-conversion of loan into grant as discussed in succeeding paragraphs.

Execution of Part A projects

2.3.16 IT modules for data acquisition included installation of Meter Data Acquisition System and Geographic Information System (GIS) solution in all 43 Part A projects. Out of 43 projects, seven projects were completed within the extended time of five years (November 2014), 24 projects after delays ranging from one to nine months, while balance 12 Part A projects remained to be completed as of September 2015.

Audit examined implementation of all 43 Part A projects and noticed that the reasons for non-completion of data acquisition module were delay in award of work, delay in commissioning of Data Recovery Centre and non-replacement of incompatible meters by KSEBL as discussed below.

Appointment of IT Implementing Agency (ITIA)

2.3.17 As per clause 21.7 of the terms and conditions of PFC for sanctioning loan, KSEBL was to award Part A projects to ITIA within three months from the date of sanction i.e. by 25th February 2010.

Scrutiny of records revealed that there was delay in tendering process for appointment of ITIA for the execution of Part A projects and the contract was awarded to KDN belatedly in September 2010. Thereafter, GoK directed (December 2010) KSEBL to cancel the contract awarded to KDN and to invite fresh tender because of allegations of corruption. The decision was challenged by KDN in the Hon'ble High Court of Kerala. Work was again awarded (September 2012) to KDN on the basis of the decision of the High Court for completion within 18 months i.e. March 2014. The work was in progress (November 2015). Installation of IT modules for collection of data and IT enabled customer care services envisaged under Part A of RAPDRP was pending. Thus, Audit observed that there was delay of two years in award of work due to intervention by the Government.

Implementation of Meter Data Acquisition System (MDAS)

2.3.18 Meter Data Acquisition System (MDAS), proposed under Part A projects, aimed to acquire meter data from system and selected High Tension (HT) consumer meters automatically avoiding any human intervention. It also aimed to monitor important distribution parameters for taking corrective action. All the feeder meters, DT meters and all HT consumers' meters in the entire utility area were to be covered in MDAS by installation of modem. The meter data from all DTs as well as HT consumers and data from feeder meters would be transmitted to central data centre server. As per the guidelines, meters were to be made DLMS⁴-compliant by KSEBL.

KDN was responsible to install 18526 modems in all border meters, feeder meters, DT meters and HT consumers' meters. The following works and issues were pending as of August 2015:

Table 2.32: Status of installation of MDAS

Item	Target	Installed/communicating	Reasons
	(In numbers)		
Installation of Modem	18,526	7,386	Replacement of DLMS non-compliant HT meters by KSEBL pending
Communicating with Central data server	7,386 installed	3,355 out of 7,386 modem	Compatibility issue as discussed below

Scrutiny of records in 43 Part A projects revealed that:

⁴ DLMS- Device Language Message Specification is an object model to view the functionality of meter. DLMS is a transporting method to carry the information between the metering equipment and data collection system.

- KDN could not install modems in 4400 HT meters as these meters were DLMS non-compliant but were not replaced by KSEBL to make them DLMS-compatible. The existing HT meters were purchased by consumers and when modems were installed, meters were stuck or gave abnormal figures, wrong reading, etc. KSEBL directed (October 2014) KDN to stop installing modem on HT consumers' meter till new ones were installed by KSEBL. Action for procurement of new HT meters was, however, not initiated so far (August 2015).
- Similarly, audit scrutiny in three Part A projects revealed that existing feeder meters, border meters and DT meters were either faulty or DLMS-non compliant but not replaced by KSEBL as shown in Table below:

Table 2.33: Details of faulty and DLMS-non compliant meters (In numbers)

Name of town	Feeder meters		Border meters		DTR meters	
	Total	Faulty/ DLMS- non- complaint	Total	Faulty/ DLMS- non- complaint	Total	Faulty/ DLMS- non- complaint
Kunnamkulam	11	0	15	14	316	0
Guruvayoor	11	0	16	15	535	33
Thrissur	37	24	25	20	1436	1336

Slow progress in completion of MDAS resulted in generation of inaccurate AT&C loss data from 31 towns declared go-live as discussed in *Paragraph 2.3.20*

GoK replied (January 2016) that during bid finalisation, it was assumed that, data could be retrieved from all these meters and sent to the server through modem. When modem was installed the meters were behaving abnormally. Since these meters belong to high value consumers of KSEBL, it was directed to stop the installation of modem.

The reply was not acceptable as improper field study conducted by CE (Corporate Planning) at DPR preparation stage was the reason for non-compatibility issue. No response was received in respect of DT meters.

Implementation of Geographic Information System (GIS)

2.3.19 Under Part A of RAPDRP, a Geographic Information System (GIS) solution consisting of a system for capturing, storing, checking, integrating, manipulating, analysing and displaying geo data related to positions on the earth's surface and data related to attributes of the entities or customers in a utility area was to be set up. Satellite images from National Remote Sensing Centre (NRSC) were obtained in respect of all 43 towns but GIS network survey and GIS consumer survey were yet to be completed due to inaction on the part of KDN. The GIS asset mapping included field visit to identify and locate the assets for mapping, painting each pole and numbering. KDN had not deputed adequate manpower for this work.

Timely completion of GIS based consumer indexing and asset mapping would have enabled KSEBL to locate a particular customer and the DT from which connection provided, location, etc., to identify the exact location of AT & C loss to take corrective measures. Due to delay in completion of GIS activity by KDN, the benefits envisaged under RAPDRP could not be availed as of September 2015.

GoK replied (January 2016) that the identified features reported as not having provided were already functional in GIS modules. Eventhough consumer survey was included in the implementation of Part A projects, during the pilot implementation in the initial town, it was revealed that no valuable additional information would be obtained from the survey other than the information already available with KSEBL in the billing database. Hence, KSEBL was actively considering exemption of consumer survey in the remaining towns. Consumer indexing data was already available with KSEBL. Indexing of the remaining towns will be completed during the stabilisation period.

The reply was not acceptable as no proper study was conducted at the DPR stage to address this issue.

Declaration of towns as go-live

2.3.20 Although Part A projects were to be completed in all 43 towns by November 2015, 31 towns were declared ‘go-live’ as of September 2015 though modem installation was completed in three⁵ towns only. Due to declaration of towns as ‘go-live’ before completion of the entire Part A work, AT & C loss data gathered from nine towns displayed unrealistic figures, compared with base line data at the time of commencement of Part A projects, as shown below:

Table 2.34: Base line AT & C loss and current AT & C loss figures.

(Figures in percent)

Name of town	Base-line AT & C loss	AT & C loss for 2014-15	
		Third quarter	Fourth quarter
Chalakudy	23.77	55.33	56.47
Neyyattinkara	25.14	---	77.73
Ottappalam	28.01	64.55	61.00
Ponnani	22.25	56.03	39.80
Punalur	26.29	---	46.66
Shornur	25.36	48.60	32.89
Thiruvalla	27.86	42.41	38.58
Thodupuzha	27.47	41.13	51.54

Similarly, two internet connections were to be provided to DC in order to ensure uninterrupted network connectivity. BSNL network connectivity (primary)

5 Changanassery, Palakkad, Punalur.

was delivered in all the 228 sections while Airtel connectivity (secondary) could be established in 170 sections only (August 2015).

Since all 43 towns had to be declared go-live before the stipulated completion date of November 2015 in order to be eligible for conversion of loan into grant, CE (IT) who was responsible for the implementation of Part A projects, declared towns go-live even before completion of work, which was not in order.

Commissioning of Data Centre (DC) and Data Recovery Centre (DRC)

2.3.21 As per the Guideline, for storage of data to capture AT&C loss from 43 project areas, Part A projects should have one common Data Centre (DC) at a location identified by Power Companies with common Data Recovery Centre (DRC) on a different seismic zone other than in which the DC is located. The purpose of establishing DRC is that in case a disaster strikes at the primary DC, the DRC site will take over and start functioning as the primary site. As per guidelines, DRC was to be commissioned after successful completion of at least 70 percent of Part A projects.

The Board of Directors decided (August 2012) to establish DC and DRC in the same seismic zone (Zone-III). DC was established at Thiruvananthapuram and started functioning from 21st January 2014 while the DRC at Infopark building, Cherthala was yet to be commissioned even after 31 Part A projects (72 percent) having been completed (August 2015). Slow progress in completion of several processes like hardware installation test, inspection, DC-DRC point to point link for data replication, infrastructure high level design and low level design document review, etc., were the reasons for delay in commissioning of DRC. Thus, the DC commissioned in January 2014 was vulnerable to high risk and loss of valuable data in the absence of DRC, for which Board of Directors of KSEBL was responsible.

GoK replied (January 2016) that DRC at Cherthala was specifically designed to take care of seismic impact and there were practical difficulties and hardships in maintaining such a facility outside Kerala.

The reply was not acceptable as data stored in DC was vulnerable to high risk and loss of valuable data in the absence of DRC in a different seismic zone.

Recommendation No. 3: Preparation of DPRS should be realistic in order to guard against technology related compatibility issues at the implementation stage.

Non-completion of Customer Care Services under Part A project

2.3.22 As per RAPDRP guidelines, a Centralised Customer Care Service Centre (CCC) was to be set up as part of Part A projects to improve the customer service by processing and resolving customer requests, queries and complaints in minimum possible time by taking up it at appropriate place and level. KDN was to link all 228 Electrical Sections falling under 43 Part A projects with the CCC and to impart end user training to the officials of electrical sections.

Scrutiny of records revealed that:

- Although the CCC at Thiruvananthapuram was inaugurated on 12 November 2014, 60 Electrical Sections covered under RAPDRP could not be linked with CCC out of 228 Sections as end user training to the officials of KSEBL was not imparted by KDN. Thus, the facility of complaint redressal system was denied to the consumers of 60 Electrical Sections.

It was also noticed that even in CCC-linked Sections, integration of system with billing module and Consumer Indexing was pending (September 2015).

Gok replied (January 2016) that 192 Electrical Sections had now been Linked to CCC.

The reply was not acceptable since the customer care services envisaged under RAPDRP could not be provided to the customers even after six years of sanctioning of projects.

- Spot Billing System (SBS) was intended to carry out spot billing for LT consumers. The Spot Billing System consisted of a Hand Held Equipment (HHE) and a separate Portable Printer (PP). End user training was to be imparted by KDN to meter readers of the electrical section of the project area concerned for the operation of SBS.

Scrutiny revealed that KDN could not provide training to all the meter readers so far (September 2015). KSEBL, therefore, directed KDN to deliver SBS in phased manner so that SBS is delivered to trained meter readers only. Progress in installation of SBS is given in the following Table:

Table 2.35-Status of installation of SBS

Particulars	Sanctioned (Nos.)	Completed (Nos.)
Spot Billing Machine (SBM)	1335	430
SBM software	In all the 43 towns	20

GoK replied (January 2016) that KDN had deployed 520 machines in 32 towns. Since the SBMs were to be used for consumer billing, care was taken to implement the SBM in a phased manner after training the meter readers. The remaining SBMs would be implemented soon.

The reply was not acceptable as non-installation of SBM was due to delay on the part of KDN to impart training to the meter readers of KSEBL.

- As per G-3 of System Requirement Specification Document of Part A, Intelligent Display Management System (IDMS) was to be set up in six locations identified by KSEBL to provide comfort and easiness of operation to the customers. IDMS was to work as queue management system, making customer sit easily and comfortably instead of standing in a queue.

Due to non-finalisation of locations by KSEBL because of demand from all districts for these facilities, as of August 2015, one token dispenser machine, one touch screen kiosk and one cash collection kiosk could only be installed at Centralised Customer Care Center at Corporate Office of KSEBL, as shown in Table below :

Table 2.36 - Status of implementation of IDMS

Item	Approved	Status of Implementation
	(Number)	
Automatic token dispenser machine and IDMS at customer care centre	1	1
Touch Panel based kiosk for furnishing information on billing, payment, duplicate bills, etc., at customer care centres.	6	1
Cash/cheque collection kiosk for automatically accepting cash and cheque payments from customers	6	1

GoK replied (January 2016) that out of six touch panel based kiosk and cash/cheque collection kiosk, one each was installed and commissioned in CCC. The remaining five numbers would be installed in various locations identified by KSEBL, within a couple of weeks.

Thus, due to non-linking of all sections with CCC and non-installation of Spot Billing Machine and kiosk, the objective of consumer satisfaction envisaged under RAPDRP remained unachieved.

Extra expenditure in implementation of Part A projects

2.3.23 In the execution of Part A projects, KSEBL incurred extra expenditure of ₹27 crore as discussed below.

- As per the bid (March 2010) for appointment of ITIA, each bidder was to quote specifically the bandwidth connectivity charges for five years. As per clause 14.3 of instructions to bidders (ITB), if an item was not listed in the price schedule, price loading was to be made by taking highest of the prices quoted by other bidders for such missing item or component. If the price of item is available, then it shall be considered for price loading.
- L1 bidder (MIC Electronic Limited) quoted ₹195 crore including bandwidth connectivity charges of ₹26.54 crore for three years while L2

bidder (KDN) quoted ₹240 crore including bandwidth connectivity charges. KSEBL, instead of applying price loading proportionately for two more years (₹17.69 crore) on LI (MIC), applied clause 14.3 of ITB irregularly for price loading (₹47.46 crore) on L1 bidder (MIC) for two more years by taking the highest connectivity charges quoted by bidders. After price loading, L2 bidder (KDN) became LI bidder, leading to awarding contract at extra expenditure of ₹27 crore (₹240 crore - ₹213 crore).

- GoK replied (January 2016) that there is a specific method for arriving at LI in case the period quoted for bandwidth is less than five years and loading principle had to be applied only in respect of the vendor who quoted lowest price, but only for three years.

The reply was not acceptable due to the following reasons:

- As per clause 14.3 of Instruction to Bidders of RFP, clause 14.3 is applicable only if the price of an item is not available in the price schedule. Further PFC has clarified that if the price of an item is available, then it shall be considered for price loading. The bandwidth charges quoted by L1 for three years was ₹26.54 crore. Even if this was proportionately taken for five years, the connectivity charges quoted by L1 would be ₹44.23 crore and the rate quoted by L1 would be ₹27 crore⁶ less than L2.
- Feedback Ventures Private Limited was appointed as IT Consultant (ITC) of Part A projects for ₹35.74 lakh. Contract period was up to November 2013. As Part A projects were not completed within the stipulated time and extension was granted by PFC up to November 2015, ITC was retained at a monthly retainer fee of ₹1.5 lakh excluding taxes. The additional amount to be incurred up to the completion of Part A projects worked out to ₹36 lakh.

Execution of Part B projects

2.3.24 Work under Part B projects consisted of distribution strengthening process. On completion of Part B projects, AT&C loss was targeted to be brought down to 15 percent from the range of 19.78 percent to 29.17 percent existing at the time of approval of projects by MoP. Eventhough 32 Part B projects were due for completion as of August 2015, no project could be completed and PFC extended the completion period to six years.

6 ₹240 crore (L2)-₹213 crore (L1)

Audit scrutiny of 43 Part B projects revealed that delay in submission of DPRs and award of work, delay in tying up loans, etc., were the reasons for non-completion of projects within scheduled time. Delay has led to extra expenditure and non-achievement of benefit envisaged under RAPDRP as discussed below.

Delay in submission of DPRs and financial tie-up

2.3.25 As per the guidelines of RAPDRP (December 2008), the sanction process and other formalities for execution of Part A and Part B projects should be taken up simultaneously and ring fencing was to be completed within 16 weeks of the sanction of DPR. Similarly, tie-up with Financial Institutions for counter part funding was to be firmed up within two months of sanction of the project.

Scrutiny of records in 43 Part B projects revealed that:

- Sanction process and other formalities for the execution of Part A and Part B projects were not taken up simultaneously by KSEBL and Distribution Reforms Committee (DRC). While the DPRs for 43 Part A projects were approved by DRC (September 2009) and approved by the Steering Committee of Gol (November 2009), the process for the preparation of DPR of 43 Part B projects was taken up by KSEBL belatedly in December 2009. The delay in preparation of DPR of 43 Part B projects by KSEBL and approval by DRC ranged from five months to 28 months.
- As per guidelines, ring fencing of the town was to be done by the utility by installing the system meters (import/ export meters, feeder meters, DT meters, boundary meters, etc.) on its own and shall be taken up immediately on approval of DPR.

Ring fencing through metering of all import/export metering points and segregation of agriculture feeders was to be completed by KSEBL within 16 weeks of the sanction of DPR of Part A projects i.e. by March 2010. There was, however, delay ranging from two months to one year in completion of ring fencing. The delay in ring fencing was due to excessive time taken in replacement of existing faulty meters.

The delay in submission of DPR of Part B projects to PFC and delay in ring fencing resulted in non- commencement of Part B projects simultaneously with Part A projects and consequent delay in completion of Part B projects.

GoK replied (January 2016) that delay was due to resubmission of DPR in many cases on the basis of the corrections done by PFC.

The reply was not acceptable as corrections in DPR were warranted due to non-adherence to RAPDRP guidelines on submission of DPR.

- As per clause 5.3 of MoA, 75 percent of the project cost of Part B was to be availed as counter part loan from Rural Electrification Corporation (REC)/ Financial Institutions (FIs). Tie-up with FIs for counter part funding was to be firmed up within two months of sanction of the project.

In respect of 43 Part B projects sanctioned (June 2010 to August 2012) by PFC at a cost of 1078 crore, KSEBL decided (April 2012) to avail 75 percent project cost (₹801 crore) as counter part fund from REC. Agreement for counter part funding of all 43 Part B projects was executed with REC on 5th July 2014 and funds were released from October 2014 onwards. Thus, there was delay ranging from two to four years in availing counter part funding after sanction of projects. Inaction and inadequate monitoring on the part of CE (CAP-S) to arrange counter part fund resulted in tardy implementation of Part B projects.

GoK replied (January 2016) that the delay in tying-up with REC for availing counter part funding was due to slow progress of Part B projects and consequent non utilisation of 15 percent of Gol loan already received as first instalment. It was also stated that projects were not delayed due to scarcity of funds but due to diversion of material for urgent normal work.

The reply was not acceptable since as per guidelines of RAPDRP, tying up counter part fund did not have any relation with progress of work and was to be firmed up within two months from sanction of projects.

Extra expenditure in execution of Part B projects

2.3.26 Out of 43 Part B projects, KSEBL decided to execute three city schemes on turnkey basis and as per guidelines, the contract was to be awarded within three months from date of sanctioning of the project. Audit examined all three projects and noticed that:

- there was delay of 17 to 30 months in awarding contract as shown in Table below:

Table 2.37: Delay in awarding three turnkey contracts

SL. No.	Name of project	Date of Sanction by PFC	Invitation of tender	Date of opening price bid	Date of award of contract	Delay ⁷ from the date of sanction by PFC
1	Thiruvananthapuram	03.08.2012	27.03.2013	07.10.2013	03.04.2014	17 months
2	Ernakulam	22.02.2011	30.05.2012	29.01.2013	15.11.2013	30 months
3	Kozhikode	22.02.2011	10.05.2012	10.12.2012	24.07.2013	26 months

The delay in awarding the contract by Chief Engineer (Distribution) resulted in delay in execution of the projects and cost escalation of ₹126.49 crore as shown below:

Table 2.38: Details of cost escalation due to delay in awarding work

SL. No.	Name of Town/ Project	Sanctioned Project cost ⁸	Awarded project cost	Difference	Percentage change
1	Ernakulam	184.47	243.97 (NCC)	59.50	32.25
2	Kozhikode	158.81	198.74 (L&T)	39.93	25.14
3	Thiruvananthapuram	173.94	201.00 (Leena)	27.06	15.56
	Total	517.22	643.71	126.49	24.46

⁷ After three months

⁸ Excluding project cost of transmission items.

GoK replied (January 2016) that there was only procedural delay in awarding the work which did not affect completion of the scheme and it would be completed within the scheme period.

The reply was not acceptable as procedural delay ranging between 17 months to 30 months was extra ordinary and led to cost escalation of ₹126.49 crore.

- MoP approved (February 2011) Kozhikode Town Scheme under Part B at a total outlay of ₹160.78 crore (₹158.81 crore for distribution work and ₹1.97 crore for transmission work). KSEBL placed (July 2013) work order with Larsen & Toubro Limited (L&T) for execution of the above work at a total amount of ₹198.74 crore excluding the two items viz., work of supply and installation of 11 kV sectionalisers and the work of retrofitting of existing RMUs as the rate quoted were abnormally high. The project completion date was March 2015.
- In this connection, it was observed that while evaluating the rates offered by L&T, Chief Engineer (Distribution North) (CE, DN) had noticed (March 2013) that L&T had quoted abnormally higher rates for many items. However, only two of such items were excluded from the scope of the work of L&T. The major items of work retained in the scope of work with L&T for which exorbitant rates quoted were the following:
 - CCV type RMU - The quoted rate was ₹6.9 lakh as against the estimated rate of ₹4.2 lakh which was arrived at based on the market rate and the PFC approved cost data in the DPR. The excess expenditure was ₹11 crore for 400 RMU.
 - Replacement of single phase meter - Rate of ₹2124 per meter quoted by the contractor was 2.5 times the estimate rate prepared based on KSEBL approved cost data. Excess cost was ₹6.5 crore for the tendered quantity of 56023 items.
 - Supply of distribution transformers - The rate quoted by the contractor for distribution transformers (total value ₹5.93 crore) was double the KSEBL's standard rate.

Awarding the above items of work to the contractor at exorbitant rates resulted in commitment of extra expenditure to the tune of ₹20.36 crore. This excess cost would have to be met by KSEBL since funding by PFC would depend on approved project cost.

- Wastage of UG cable provided in estimate in excess of norms of five percent in Thiruvananthapuram and Kozhikode Town Part B projects amounted to ₹ 2.49 crore.

Delay in completion of work due to non-procurement of material

2.3.27 In respect of 40 Part B projects being executed departmentally, KSEBL did not procure material for the works in time leading to delay in completion of work and consequent cost overrun as discussed below.

- Approved 40 Part B projects included reconductoring 77.40 km of 11 kV overhead (OH) line with Aerial Bunched Cables (ABC) and 1346 km of new ABC line in dense, theft prone and congested areas with the objective to minimise snapping of lines due to touching of trees or branches, reduction of commercial loss and increase consumer satisfaction by minimising frequent outage/supply failure. KSEBL could, however, draw seven km of new ABC as of August 2015 due to non-procurement of material as shown in Table below:

Table 2.39: Details of non-procurement of ABC material

Work	Target as per DPR	Proposed as per annual plan 2011-12	Quantity as per annual plan 2012-13	Annual plan 2013-14 and 2014-15
LT ABC (km)	989	191	890	Nil
HT ABC (km)	357	89	370	Nil

Audit examined ABC work in 25 Part B projects and noticed that in 22 projects ABC work had not commenced. In three projects, there was delay ranging between four to five years in commencement of ABC work due to non-procurement of ABC.

Delay also resulted in cost escalation of ₹2.82 crore in respect of Kollam project while in respect of Kannur and Kanhangad projects, length of proposed ABC laying was curtailed to compensate the cost escalation as shown in Table below:

Table 2.40: Details of execution of ABC work

Name of the project	As per DPR	Revised Proposal
Kanhangad	31 km for ₹1.66 crore	Length reduced to 9.138 km
Kollam	44.40 km for ₹1.23 crore	Revised cost ₹ 4.05 crore
Kannur	126.90 km for 12.59 crore	Length reduced to 67.08 km for an estimate cost of ₹ 10.18 crore

GoK replied (January 2016) that KSEBL had no expertise in installation of ABC work and being a new technology they decided (February 2012) to execute the work on turnkey basis. However, participation by tenderers was very poor and the cost data of ABC was approved by KSERC only during July 2015.

The reply was not acceptable as installation of ABC work was proposed in the DPR by KSEBL itself.

- With the objective to minimise snapping of lines due to touching of trees, reduce commercial loss and to increase consumer satisfaction by minimising frequent outage and supply failure, laying of UG cable was approved under 40 Part B projects. Status of the work as of August 2015 was as given below:

Table 2.41: Status of work of UG cable (August 2015)

Item of work	Sanctioned	Completed
	(km)	
11 kV new UG cable	269	78
Replacing 11 kV line OH with UG cable	85	0
Replacing 11 kV UG with UG	5.30	4

Audit selected 25 Part B projects for analysing reasons for delay in completion of UG cabling work and noticed non-procurement of material and right of way issues as discussed below:

- Under Part B project of Kannur town, laying new UG cable (83.6 km) and reconductoring (84.43 km) were approved. Since the physical progress of laying new UG cable was only 25.41 km, KSEBL decided (April 2015) to complete the balance work on turnkey basis while the reconductoring work on 84.43 km was yet to commence due to non- procurement of UG cable.
- Part B project of Chokli-Peringathur town, included UG cable work for 2.02 km spread over Chokli Section and Kodyeri Section. 1.95 km of UG cable work was completed (May 2014) by Chokli Section and the balance railway crossing work of 0.07 km was yet to be completed by Kodyeri Section. The completed portion was yet to be energised.

GoK replied (January 2016) that fast progress could not be achieved for UG cable laying due to various issues outside the control of KSEBL like road cutting sanctions, road restoration charges, non-issue of permission for open trenching in BMBC roads/NHAI, etc. As the work has now been decided to be executed on turnkey basis, centralised purchase of UG cable was not relevant for the case.

The fact, however, remains that Part B projects were sanctioned from June 2010 onwards, and it took four years to decide on executing the work on turnkey basis.

- As per the guidelines. High Voltage Distribution System (HVDS) was to be implemented in theft prone areas by improving HT:LT ratio. The DPR of approved Part B project included HVDS work of laying eight km OH line, three km UG cable, one km PVC cable and installation of 51 transformers at sanctioned project cost of ₹2.50 crore.

HVDS work was yet to commence due to non-procurement of material. This resulted in non-achievement of objective of bringing down AT & C loss.

GoK replied (January 2016) that all the essential works under the HVDS category were expected to be completed well within the extended period of RAPDRP.

- In order to improve power factor and to strengthen distribution network, approved 43 Part B projects targeted to install the following

Table 2.42: Details of work proposed

Item	Approved quantity (Number)
Installation of capacitors bank	6293
Installation of remote communicable Fault Passage Indicator	274
Installation of remote switchable breakers	955
Installation of sectionalisers	471
RMU installation	2340
Providing AB switches	205

CE(SCM) responsible for procurement of above material did not procure the above material and as a result envisaged distribution strengthening work was yet to commence in all 43 projects.

Recommendation No.4: Funding arrangements should be firmed up upfront, as envisaged in scheme guidelines, in order to avoid delay in procurement and consequent delay in execution of work.

Deviation from approved DPR

2.3.28 DPRS of 43 Part B projects of RAPDRP were approved by Gol after taking into consideration Internal Rate of Return (IRR) of 10 percent and reduction of AT & C loss from above 20 percent to 15 percent.

Audit scrutiny of 25 Part B projects revealed that there was deviation from the approved DPR like change of location, quantity variation, inclusion of new location in bid document, etc., as evident from a few instances cited in **Appendix 6**.

Due to deviation from approved DPR, excess expenditure of ₹109.21 crore has to be borne by KSEBL if the revised DPR is not approved by PFC.

GoK replied (January 2016) that excess amount above the DPR would be borne by KSEBL.

The reply was not acceptable as deviation from the DPR resulted in loss of grant to the tune of 50 percent of excess expenditure.

Delay in completion of SCADA project

2.3.29 SCADA project was approved (February 2011 and June 2011) for three⁹ eligible towns in Kerala at project cost of ₹83.15 crore. SCADA project was to be completed within three years of sanction. Completion of SCADA project in these three towns was dependent on completion of Part B projects in the towns. Works like compatibility of circuit breaker and switches, remote operable motors for SCADA compatibility in existing Ring Main Units (RMUs), placement of RMUs and Fault Passage Indicator (FPIs), etc. under Part B were to be completed for the successful and timely completion of SCADA projects.

Non-commencement of SCADA compatible work under Part B had adversely affected the completion of SCADA project as discussed below:

- Works under SCADA were awarded (May 2013) to turnkey contractors with completion time of 18 months (November 2014), while Part B projects in these towns were awarded (July 2013-April 2014) on turnkey basis with completion time of 20 months. Scrutiny of records revealed that none of the SCADA project could be completed as of September 2015 due to delay in completion of Part B projects in these towns. As per the DPRS of

9 Thiruvananthapuram (₹29.76 crore), Ernakulam (₹24.40 crore) and Kozhikode (₹28.99 crore).

Thiruvananthapuram, Ernakulam and Kozhikode city Part B projects, RMUs to be made SCADA compatible were 329, 320 and 155 respectively. However, the work was yet (August 2015) to commence in these towns.

- No prioritisation was done to execute these city schemes in sync with the progress of SCADA project. DPR for Thiruvananthapuram city project was approved in August 2012 but there was delay of 20 months in award of Thiruvananthapuram city project work. In respect of Ernakulam and Kozhikode Part B projects also, delay in award of work after approval by PFC was 32 months and 29 months respectively.
- Kalki Communication Technologies Limited (Kalkitech), Bangalore was appointed as SCADA consultant (SDC) in the three cities of Thiruvananthapuram, Ernakulam and Kozhikode for a period of four years at a lump sum price of ₹49.95 lakh. The period of contract of the SDC expired in April 2014 but due to non-completion of SCADA Project, the contract of SDC was extended for one more year at an additional expenditure of ₹24 lakh per year.

The CEs (Distribution) of the project area concerned were responsible for awarding and execution of three turnkey Part B projects. Delay in completing SCADA project within the stipulated time would result in loss of grant of ₹52 crore (awarded cost), since PFC had not extended original completion time of three years.

GoK replied (January 2016) that the scheduled completion date of SCADA and Part B projects was June 2016 and February 2017 respectively.

The reply was not acceptable as extension of SCADA consultant was due to the extension of original contract.

Loss of envisaged benefit due to delay in completion

2.3.30 According to DPR of 43 Part B projects, energy saving in the range of 1.11 MUs to 80.92 MUs, totalling 506.74 MUs annually was envisaged on completion of these projects. Further, the conversion of loan ₹836.68 crore sanctioned by Gol into grant was contingent on timely completion of Part A and B projects. Therefore, proper monitoring of implementation of projects was of paramount importance.

As per the guidelines issued by Gol (MoP) and terms of MoA, a Distribution Reforms Committee (DRC) was to be constituted under RAPDRP at the State level under the Chairmanship of the Chief Secretary/Principal Secretary/Secretary Power/Energy. In the State, DRC constituted under APDRP scheme was allowed to continue to monitor the RAPDRP also. The DRC was to:

- a) recommend the Project proposals to the MoP after ensuring that all the required formalities have been complied with;
- b) monitor the compliance to conditionalities; and
- c) monitor the achievement of milestones and targets under the scheme.

DRC, mandated to monitor progress of implementation of RAPDRP, held three meetings after sanction of the RAPDRP projects but did not discuss progress of implementation of RAPDRP at all.

As a result, Part A and Part B projects which were originally scheduled for completion within three years could not be completed even within the extended time of five years. Delay in completion of projects led to annual loss of envisaged benefit of ₹202.70¹⁰ crore on 506.74 MUs of energy (**Appendix 7**) and probable non-conversion of loan of ₹836.68 crore into grant. Thus, DRC had failed in performing its duties.

KSEBL replied (November 2015) that the members of the DRC were high level officers in Government and availability of their time for close monitoring of the schemes was difficult. Monitoring by the CMD can be considered as Government level monitoring by virtue of his position as Secretary, Power Department.

The reply was not acceptable as the DRC consisted of representatives of PFC, MoP, CEA, ANERT and Energy Management Centre besides Power Secretary and four representatives from KSEBL.

¹⁰ Calculated at the average rate of ₹4 per unit.

Conclusion

The main objective of Restructured Accelerated Power Development and Reforms Programme was to bring down Aggregate Technical & Commercial loss to 15 percent. But there was no realistic approach in the preparation of Detailed Project Report to guard against technology related compatibility issues at the implementation stage. Action taken in the policy initiative like measures for prevention of theft of power, constitution of Special Courts to deal with cases of theft of power, etc., were inadequate. Delay in preparation of DPRs and arrangement of funds led to delay in procurement of material and awarding of contracts. This has also resulted in time overrun of more than three years and cost overrun, which contributed to the non-materialisation of envisaged benefit of reduction in Aggregate Technical & Commercial loss.

[Audit paragraph 2.3 contained in the Report of the C&AG on Public Sector Undertakings for the year ended 31st March 2015]

The notes furnished by the Government on the audit paragraph are given in Appendix II

Discussion and findings of the Committee

Para 2.3.7- Physical progress of projects

Regarding the audit reference that the projects under RAPDRP could not be completed within the stipulated time, the Committee noticed that the projects under RAPDRP (projects under Part A&B and SCADA projects) were sanctioned on various dates between 2009, 2010 and 2012 and were to be completed within 5 years from the date of sanction but was completed only in March 2018 and enquired about the present position of the projects.

The witness informed that the original project approval was for three years and it was extended by PFC for a further period of two years. He added that based on the requests from various states the PFC further extended the time line for the completion of project up to 2017-18 and all the projects were completed within the approved time period.

The Committee approved the reply of witness.

Para 2.3.9 – Faulty preparation of DPR

The Committee sought clarification about the audit observation that there was faulty preparation of DPR (Detailed Project Report). The witness admitted the audit observation and informed that the Ministry of Power scrutinized the DPR and approved different components of work for sanctioned amount. He added that back and forth activities are involved during the finalisation of DPR of projects where informatics are frequently used and this cannot be considered or treated as faulty DPR preparation.

The Committee approved the reply of witness.

Para 2.3.10- Measures for prevention of theft

The Committee enquired about the audit para that the measures taken by KSEB to prevent power theft was inadequate and in-effective since the main objectives of RAPDRP were to bring down AT&C (Aggregate Technical and Commercial) loss to 15 percent. The witness admitted the audit objection and clarified that the objections were related to the year 2015 and in subsequent years KSEBL achieved the target of lowering of AT & C loss. He also informed that the Anti Power Theft Squads (APTS) are now functioning effectively.

The Committee directed to furnish a detailed report regarding the present status of the functioning of Anti Power Theft Squad.

The Committee further enquired whether the APTS had been given any instructions to achieve the target of inspections. The witness replied that each APTS had been given special instructions to achieve the target. In spite of these, all the units were doing their best to conduct maximum number of inspections in a month. In order to increase the percentage of checking, additional monthly special drive inspections were also being carried out by all the units concentrating on large commercial and industrial consumers. He added that the present mode of comprehensive inspections conducted after detailed analysis is sufficient.

The Committee approved the reply of witness.

Para 2.3.11 – Non – constitution of Special Courts

The Committee enquired about non-constituting of Special Courts for speedy trial of offences relating to theft of energy. The Senior Deputy A.G. informed that instead of constituting Special Courts, Government of Kerala had designated 43 existing Courts as Special Courts with the concurrence of the High Court of Kerala thereby defeating the objective of constituting Special Courts and denying speedy trial of offences relating to theft of energy. The witness agreed to the Sr.DAG's comment that Government has designated 43 nos. of existing Courts as Special Courts for the speedy disposal of energy theft cases but stated that the total number of cases so far reported is only 53 and of the 53 nos. of pending cases reported, 15 nos. had already been disposed of and therefore there is no need to set up Special Courts in the present situation. Then the Sr.DAG stated that the reference of the need for Special Courts was made in accordance with the provisions of the Central Electricity Act, 2003.

The Committee opined that considering the total number of cases related to the power theft and the number of courts currently assigned to hear these cases, there was no need of constituting Special Courts and the present allotment of Courts to handle the cases was adequate.

The Committee approved the reply of witness.

Para 2.3.12 & 2.3.13 – Fund Management – Non opening of project-wise bank account & Non - maintenance of project – wise accounts

The Committee enquired about the audit objection relating to non-opening and non-maintenance of project wise bank account. The witness informed that KSEBL had opened separate bank account for receipt of the funds of RAPDRP (Restructured Accelerated Power Development and Reforms Programme) and for expenditure. For administrative convenience, project wise accounts had not been opened in the initial stages and the functioning agency was satisfied with the accounting system which existed in KSEBL during that period. He also added that project wise bank accounts were opened and strictly maintained after the introduction of PFMS portal and KSEBL was able to satisfy the funding agency's requirements with its project wise bank account. For separate accounting classification, designated bank account and strict reconciliation started for enabling proper audit certification.

The Committee approved the reply of witness.

Para 2.3.14 – Irregular payment of interest free advance

The Committee sought clarification of paying interest free advance of ₹14.5 crore to KDN, being 60 percent of payment against the security of material delivered and corporate guarantee executed by KDN was against scheme guidelines and was an act of undue favour to the contractor.

The witness informed that payment of ₹14.5 crore to the IT implementing agency was out of the overdue payment of ₹64 crore as per the schedule of payment. He added that on account of this over due in payment the project implementation was almost in stalemate. The severe cash flow issue faced by ITIA was discussed during the Southern Regional Power Secretaries meeting on 17-11-2014 held at Chennai under the Chairmanship of Secretary (Power), Government of India. Based on this, the details of payment made outside the milestone and circumstances necessitated such a payment was forwarded to the Power Finance Corporation (PFC). In reply to this, PFC intimated advisory issued during April 2014, which specifies that “Utility can utilize the provisions of the clause GCC14(9) available in the contract under REP Section – VIII, Special conditions of contract for making payment to ITIA for the project area / milestone where major portion of work has been completed and only minor portion of work or supply is pending / deficient and which does not affect the performance of the System”. The specific payment of ₹14.5 crore, outside the scope of the milestone based payment was released against the equipment delivered and was deducted at the rate of 18 percent from subsequent invoices. Hence, this payment was treated as an advance payment. Also, interest on this advance payment was not imposed as it was released against 60 percent of the value of the equipments which were already delivered and handed over to KSEBL. The ITIA was still continuing the work without cost overrun at their quoted price, which was quoted way back in April 2010. Hence, the payment made is totally justifiable for the progress of the project. Also, KSEBL Board of Directors had taken a policy decision sanctioning the specific payment of ₹14.5 crore. It is to be noted that precedence exists in General Contract Conditions for release of payment based on delivered material cost up to 70 percent. No undue favour was extended to ITIA and the contract with

the firm had only smoothened the implementation of the project. The payment was given only for the items delivered/work progressed and also as per the discussions/ approval of PFC.

The Committee approved the reply by the witness

Para 2.3.15 – Implementation of Projects

Regarding the Audit para, the witness replied that KSEBL had taken earnest attempts to complete the project within the time frame extended by PFC and added that as observed in the audit, the installation and data capturing could not be implemented wholly in 2015. But KSEBL streamlined the implementation and met all the objectives of the project within in the time limit.

The Committee approved the reply of witness.

Para 2.3.17-Appointment of IT Implementing Agency(ITIA)

The Committee enquired about the audit objection that installation of IT modules for collection of data and IT enabled customer care services envisaged under part A of RAPDRP was pending and there was a delay of two years in awarding work due to intervention by the Government. The witness informed that the work awarded to KDN had been cancelled as directed by the Government of Kerala and the company approached Hon'ble High Court against this. As the case was pending before Hon'ble High Court and work was awarded again after 18 months and hence there was delay in appointing IT Implementing Agency.

The Committee approved the reply of witness

Para 2.3.18 – Implementation of Meter Data Acquisition System (MDAS)

The Committee sought explanation on the audit reference that the implementation of Meter Data Acquisition System (MDAS) was defective due to the improper field study at DPR preparation stage. The witness admitted the audit observation and informed that this project, which uses informatics in distribution system was implemented all over India as a new project. Short falls identified were rectified later. In the implementation of this project, there was no option for cross verification. In spite of these problems KSEBL completed all the objectives within the time limit and is one among the states to complete this project early. He

also informed that the Meter Data Acquisition System (MDAS) had been fully implemented at present and the expenditure for implementation of RAPDRP was admitted by PFC and majority of loans sanctioned was converted as grant by PFC.

The Committee approved the reply of witness.

Para 2.3.19 – Implementation of Geographic Information System (GIS)

The Committee sought explanation regarding the audit reference that Geographic Information System Network Survey and Geographic Information System Consumer Survey were yet to be completed due to inaction on the part of KDN. The witness admitted the audit observation and clarified that the GIS network survey was completed in all 43 towns and that the network was available in GIS system and that GIS asset mapping and consumer indexing were completed. He added that the efficiency of GIS application would be improved and updated under the RDSS scheme announced by Central Government.

The Committee approved the reply of witness.

Para 2.3.21 – Commissioning of Data Centre (DC) and Data Recovery Centre (DRC)

The Committee sought clarification about the audit objection that KSEBL has not followed the guidelines for setting up of Data Centre (DC) and Data Recovery Centre (DRC) in different seismic zones. The witness informed that the entire state of Kerala is under a single earthquake zone. The DRC at Cherthala was specifically designed to take care of seismic impact. DC was established at Thiruvananthapuram. DC and DRC were to be set up in a building which was designed and built considering the seismic resistant parameters.

The Committee approved the reply of the witness.

Para 2.3.22 – Non-completion of Customer Care Services under Part A project

Regarding the audit para the witness replied that Centralised Customer Care Service Centres were fully functional at present and all the section offices were connected to it and at the time of audits 228 section offices were not connected

which was the reason for audit objection. Now that the customer care service centre is working 24x7 hours and upgradation is routinely done and the process can be monitored centrally, the customer care centres are effectively working.

The Committee approved the reply of the witness.

Paras 2.3.20, 2.3.23 to 2.3.30

The Committee approved the reply of the witness.

Recommendations/ Conclusions

1. The Committee observes that APTS was constituted in connection with RAPDRP to bring down AT&C loss to 15 percent. Besides APTS division, section squad also conducts surprise inspections to detect theft. But KSEBL is not enforcing measures in detected cases as per section 135 of Electricity Act 2003. The Committee suspect that KSEBL officials were colluding with high end consumers so that they become scott free. As the action of APTS was not making any significant changes in detection of theft cases, the Committee recommends that monthly inspections should be carried out by each division at the premises of high end consumers like restaurants, malls etc. and large industrial and commercial consumers in every month by engaging APTS, section squads etc. and the data collected should be recorded and monitored at State level. An action taken report in this regard should be furnished to the Committee without delay.

Thiruvananthapuram,
8th July, 2024.

E. CHANDRASEKHARAN,
Chairperson,
Committee on Public Undertakings.

APPENDIX-I
SUMMARY OF MAIN CONCLUSION/RECOMMENDATION

Sl No.	Para No.	Department Concerned	Conclusion/Recommendation
1	1	Power Department	<p>The Committee observes that APTS was constituted in connection with RAPDRP to bring down AT&C loss to 15 percent. Besides APTS division, section squad also conducts surprise inspections to detect theft. But KSEBL is not enforcing measures in detected cases as per section 135 of Electricity Act 2003. The Committee suspect that KSEBL officials were colluding with high end consumers so that they become scott free. As the action of APTS was not making any significant changes in detection of theft cases, the Committee recommends that monthly inspections should be carried out by each division at the premises of high end consumers like restaurants, malls etc. and large industrial and commercial consumers in every month by engaging APTS, section squads etc. and the data collected should be recorded and monitored at State level. An action taken report in this regard should be furnished to the Committee without delay.</p>

APPENDIX-II

GOVERNMENT OF KERALA POWER (C) DEPARTMENT

STATEMENT OF ACTION TAKEN REPORT BASED ON THE REPORT OF COMPTROLLER AND AUDITOR GENERAL OF INDIA FOR THE YEAR ENDED 31ST MARCH 2015 (PUBLIC SECTOR UNDER THE (KINGS)-PERFORMANCE AUDIT ON IMPLEMENTATION OF RAPDRP BY KSEBL

Para No.	RECOMMENDATION	ACTION TAKEN BY GOVERNMENT								
2.3.1	<p>Government of India (GoI), Ministry of Power (MoP) approved (September 2008) 'Restructured Accelerated Power Development and Reforms Programme' (RAPDRP) with the aim of restoring commercial viability of power distribution sector by putting in place appropriate mechanism so as to reduce Aggregate Technical and Commercial (AT&C) loss substantially. AT&C loss was planned to be reduced by plugging pilferage points, supply of quality power, faster identification of faults and early restoration of power, proper metering, strategic placement of capacitor banks and switches and proper planning and design of distribution network.</p> <p>Coverage of area under RAPDRP was urban area-towns and cities with a population of more than 30,000. Projects under RAPDRP were to be taken up in two parts, Part A and Part B. Under Part A, Supervisory Control and Data Acquisition (SCADA) or Distribution Management System (DMS) shall also be installed in eligible towns and cities with population of more than four lakh and annual input energy of 350 million units (MUs). The activities involved in Part A and Part B projects were as shown in Table below:</p> <p>Table 2.28: Activities under Part A and B projects</p> <table><tr><th colspan="2">Activities under Part A project</th></tr><tr><td>a</td><td>Implementation of Information Technology (IT) modules for collection of base line data to capture AT & C loss in a precise manner without manual intervention and also to plan and implement corrective measures in Part B.</td></tr><tr><td>b</td><td>Energy accounting and audit</td></tr><tr><td>c</td><td>Redressal of consumer grievances and establishment of IT enabled consumer service centres, etc.</td></tr></table>	Activities under Part A project		a	Implementation of Information Technology (IT) modules for collection of base line data to capture AT & C loss in a precise manner without manual intervention and also to plan and implement corrective measures in Part B.	b	Energy accounting and audit	c	Redressal of consumer grievances and establishment of IT enabled consumer service centres, etc.	
Activities under Part A project										
a	Implementation of Information Technology (IT) modules for collection of base line data to capture AT & C loss in a precise manner without manual intervention and also to plan and implement corrective measures in Part B.									
b	Energy accounting and audit									
c	Redressal of consumer grievances and establishment of IT enabled consumer service centres, etc.									

	<p>d Implementation of SCADA or DMS, GIS based Consumer Indexing and asset mapping, etc.</p> <p>Activities under Part B project</p> <p>a Renovation, modernisation and strengthening of 11 kV level substations, transformers / transformer centres, re-conductoring of lines at 11kV level and below, Load Bifurcation, Feeder segregation, Load Balancing, Aerial Bunched Conductoring in thickly populated areas, HVDS, installation of capacitor banks and mobile service centres, etc. In exceptional cases, where sub-transmission system is weak, strengthening at 33 kV or 66 kV levels may also be considered.</p>	
	<p>Execution of quadripartite agreement between power utility, GoI, PFC and State Government was a pre-requisite for release of funds under RAPDRP. Accordingly, a quadripartite agreement (MoA) was executed (August 2009) for implementation of RAPDRP in Kerala.</p> <p>In Kerala, 43 towns were eligible for implementation of RAPDRP. All the 43 projects submitted by Kerala State Electricity Board Limited (KSEBL) under Part A were sanctioned (November 2009) by GoI and 43 projects under Part B were sanctioned on various dates between 2010 and 2012. Further, SCADA was sanctioned by GoI for three eligible towns (Thiruvananthapuram, Ernakulam and Kozhikode) under Part A.</p> <p>The main objectives of RAPDRP were to:</p> <ul style="list-style-type: none"> ➤ reduce AT&C loss to 15 per cent. ➤ bring about commercial viability in the power sector. ➤ reduce outages and interruptions. ➤ increase consumer satisfaction. 	
2.3.2	<p>Scope of Audit</p> <p>The Performance Audit was conducted with a view to assess the performance of KSEBL in conceptualisation and implementation of RAPDRP with reference to the objectives set for the programme covering all 43 Part A projects, three SCADA projects and 25 Part B projects from 1 April 2009 to 31 March 2015 on the basis of the documents/ information</p>	

2.3.3	<p>maintained by Government of Kerala (GoK) and KSEBL.</p> <p>Audit Objectives The main audit objectives were to assess whether:</p> <ul style="list-style-type: none"> ➤ policy Initiative and planning required for implementation of the programme were appropriate and adequate; and ➤ the programme has been implemented in an efficient, effective and economical manner. <p>Audit Criteria The audit criteria has been taken from following sources:</p> <ul style="list-style-type: none"> • National Electricity Policy formulated under Electricity Act, 2003; • Memorandum of Agreement/Quadripartite Agreement; • Guidelines issued by PFC/ MoP; • General Financial Rules; • Detailed Project Reports; • Work Orders; • Minutes of Steering Committee meetings; and • Orders and circulars issued by KSEBL and the Government. 							
2.3.4								
2.3.5	<p>Audit Methodology The methodology adopted for attaining the audit objectives with reference to audit criteria consisted of explaining the audit objectives to top management of the KSEBL and the Government, scrutiny of records of the audited entity, analysis of data with reference to criteria, issue of audit queries, and discussion of audit findings with Management and issue of Draft Performance Audit Report. The audit objectives, audit criteria and scope of the performance audit were explained to the Management in an Entry Conference (23 June 2015). Audit findings were also discussed in the Exit Conference held on 3 December 2015. Views expressed by the Management and GoK have been duly considered while finalising the Performance Audit Report.</p>							
2.3.6	<p>Audit Findings Audit findings are discussed in the succeeding paragraphs.</p>							
2.3.7	<p>Physical progress of projects 2.3.7 MoP sanctioned 43 projects each under Part A and Part B and three SCADA projects for implementation in the State. As per the original guidelines, Part A and Part B projects were to be completed within three years from the date of sanction. Later, GoI extended the completion period to five years for</p>	<p>Status of Part-A (IT) and SCADA Project as on 20th July 2015</p> <table border="1"> <thead> <tr> <th>Items</th><th>Part - A (IT)</th><th>SCADA</th></tr> </thead> <tbody> <tr> <td>Projects sanctioned</td><td>43</td><td>3</td></tr> </tbody> </table>	Items	Part - A (IT)	SCADA	Projects sanctioned	43	3
Items	Part - A (IT)	SCADA						
Projects sanctioned	43	3						

both Part A (November 2014) and Part B (between June/December 2015). However, the project could not be completed within five years and was further extended by one more year. Status of the projects as of September 2015 was as given below:

Table 2.29: Status of the projects as of September 2015

Items	Part A	SCADA	Part B
Projects sanctioned	43	3	43
Sanctioned project cost (₹ in crore)	214.38	83.15	1078.30
Date of approval by PFC	November 2009	February-June 2011	June 2010 - August 2012
Scheduled completion date	November 2014	November 2014	Jun : 2015 (11 Nos.) date 2014 August 2015 (21 Nos.) December 2015 (8 Nos.) February 2016 (2 turnkey) March 2017 (1 turnkey)
Name of the contractor	Korea Electric Power Data Network Company Limited (KDN)	Schneider Electric India Private Limited	43 projects by K.S.E.B Limited and three projects through turnkey contracts
Projects completed	31	Nil	Nil
Loan released by GoI up to 31/03/2015 (in	64.31	24.95	161.74

Sanctioned project cost (₹ In crore)	214.38	83.15
Date of approval by PFC	November 2009	February - June 2011
Scheduled completion	PFC granted time extension up to 30 th Sept. 2017.	TVM - 30 th Nov. 2017 EKM & KZD - 30 th Sept. 2017.
Name of contractor	Korea Electric Power Data Network Company (KEPCO KDN)	Schneider Electric India Pvt. Ltd.
Projects completed	43	Nil
Loan released by GoI (in ₹ Crore)	141.23	24.95
Counterpart loan from REC	Nil	Nil
Amount utilized (in ₹ Crore)	115.53	9.5
Projects selected for audit	43	3

The Initial period of completion was 3 years from the date of sanction, which was 26.11.2012. It was extended by PFC for a further period of 2 years. Based on the requests from several states, the PFC further extended time line for completion of the project. In the case of Kerala the date of completion for Part-A IT project was upto September 2016. Later, based on further requests, the time limit for the completion of IT Projects under Part - A of RAPDRP was extended upto September 2017. In the meantime, PFC released the 1st tranche of ₹40.26 Crore, and 2nd tranche of ₹36.63 crore making the total released loan amount to ₹141.23 Crore for PART-A IT Projects.

Hence, the audit observation is not correct as the project will be completed within the stipulated time. Apart from this, there is also no chance of loss of grant.

Part-B

Works under all the 43 schemes are successfully completed and closure proposal has been submitted to PFC.

	crore)			Type T	Total project cost sanctioned - ₹ 1,078.305 Total executed cost as per closure proposal - ₹ 1,115.182 Total loan amount sanctioned by PFC (25%) - ₹ 269.581 Cr Amount received from PFC - ₹ 161.744 Cr Counterpart loan sanctioned by REC (65.25%) - ₹ 697.63 Counterpart loan received from REC - ₹ 642.96 Cr
	Counter part loan from REC up to 31/03/2015 (₹ in crore)	NIA	NIA	205.81	
	Amount utilised up to 31/03/2015 (₹ in crore)	59.00	4.94	377.81	
	Projects selected for audit (Number)	43	3	25	
	<p>As evident from the Table, while only 31 projects had gone live out of 43 Part A projects, none of the SCADA projects and Part B projects could be completed as of September 2015.</p> <p>The main reasons for delay in completion of the Part A and Part B projects were poor fund management, deficient implementation of the project and inadequate monitoring. Policy formulation and planning required for attainment of objectives of RAPDRP was also deficient. These are discussed in succeeding paragraphs.</p>				
2.3.8	Policy Formulation and Planning Implementation of RAPDRP in the State was to be preceded by certain policy initiatives like preparation of DPR, putting in place necessary systems and undertaking measures for prevention of theft of power, constitution of Special Courts to deal with cases of power theft, etc. Compliance of KSEBL to these pre-requisites is discussed below.				
2.3.9	Faulty preparation of DPR Detailed Project Reports (DPRs) of 43 Part B projects of RAPDRP were approved by GoI on various dates between June 2010 and August 2012. Audit scrutiny of 25 town schemes revealed that there was faulty preparation of DPR as evident from a few instances cited in Appendix - 5 .				
	MoP initially intimates only nationwide target of the project not to state share. After getting preliminary requirement from all the states MoP allocates total amount among various states considering various factors. MoP scrutinizes the DPR and approves different components of work for sanctioned amount which will be less than initial DI amount. So always the DPRs are finalised in trial and error method. This trial and error method of DPR change cannot be considered treated as faulty DPR preparation. RAPDRP project was approved by MoP in September 2008. DPRs were approved from 2010 June to 2012 August. MoP took nearly two years to approve first lot sanction.				

		<p>Electrical Power System is dynamic in nature and changing according to the growth. Due to this, during the period between DPR submissions to approval some of the items are departmentally executed completely or partly due to exigency. Some of the items proposed may not be required while implementation. For example up gradation of an existing 110/11kV transformer may eliminate the requirement of a 33/11kV transformer proposed in DPR.</p> <p>In order to utilize the fund, certain inevitable changes were made in item, location, quantity, etc. during execution of RAPDRP as indicated in Annexure-5. Difficulty in obtaining road cutting clearances, public protest, railway clearance, severe weather conditions and labour issues were also affected the execution of project. Considering all these difficulties MoP extended period of completion to March 2018 and permitted the BoQ variation.</p>																																																																													
2.3.10	<p>Measures for prevention of theft</p> <p>The main objective of RAPDRP was to bring down AT & C loss to 15 per cent. Any illegal consumption of power, which is not correctly metered, billed and revenue collected, causes commercial loss to the utilities. As per Section 135 of Electricity Act, 2003, illegal consumption of energy shall be punishable with imprisonment for a term which may extend to three years or with fine or with both.</p> <p>14 Anti Power Theft Squads (APTS) were constituted by KSEBL exclusively to detect cases of theft of energy. Besides, the division and section squad also conducted surprise inspections to detect theft of energy. During 2010-11 to 2014-15, APTS and division and section squads detected 2390 cases of theft of energy and ₹15.66 crore was realised as penalty as detailed in Table 2.30:</p> <p>Table 2.30: Details of detection of theft of energy</p> <table><tr><th>Sl. No</th><th>Particulars</th><th>2010-11</th><th>2011-12</th><th>2012-13</th><th>2013-14</th><th>2014-15</th><th>Total</th></tr><tr><td>1</td><td>Number of consumers (in crore)</td><td>1.01</td><td>1.05</td><td>1.08</td><td>1.10</td><td>1.1</td><td></td></tr><tr><td>2</td><td>Number of inspections conducted</td><td>23479</td><td>24090</td><td>21609</td><td>21758</td><td>31369</td><td></td></tr><tr><td>3</td><td>Percentage of checking (2/1)*100</td><td>0.23</td><td>0.23</td><td>0.20</td><td>0.20</td><td>0.28</td><td></td></tr></table>	Sl. No	Particulars	2010-11	2011-12	2012-13	2013-14	2014-15	Total	1	Number of consumers (in crore)	1.01	1.05	1.08	1.10	1.1		2	Number of inspections conducted	23479	24090	21609	21758	31369		3	Percentage of checking (2/1)*100	0.23	0.23	0.20	0.20	0.28		<p>Anti Power Theft (APT) Squads are functioning under the overall control of Chief Vigilance Officer. At present 14 units (1 unit for each district) are functioning all over the state exclusively to detect pilferage/misuse of energy. Earlier each unit was given a target of 100 inspections per month. Since the target was found inadequate, after analyzing the district-wise consumer strength minimum no. of inspections, to be conducted by each unit has been refixed as shown below.</p> <table><tr><th>Sl. No.</th><th>Name of Unit</th><th>Monthly target</th></tr><tr><td>1</td><td>Thiruvananthapuram</td><td>200</td></tr><tr><td>2</td><td>Kollam</td><td>200</td></tr><tr><td>3</td><td>Pathanamthitta</td><td>175</td></tr><tr><td>4</td><td>Alappuzha</td><td>175</td></tr><tr><td>5</td><td>Kottayam</td><td>200</td></tr><tr><td>6</td><td>Ernakulam</td><td>160</td></tr><tr><td>7</td><td>Thrissur</td><td>210</td></tr><tr><td>8</td><td>Idukki</td><td>160</td></tr><tr><td>9</td><td>Palakkad</td><td>160</td></tr><tr><td>10</td><td>Malappuram</td><td>210</td></tr><tr><td>11</td><td>Kozhikode</td><td>210</td></tr><tr><td>12</td><td>Kannur</td><td>210</td></tr><tr><td>13</td><td>Wayanad</td><td>250</td></tr><tr><td>14</td><td>Kasargod</td><td>120</td></tr></table>	Sl. No.	Name of Unit	Monthly target	1	Thiruvananthapuram	200	2	Kollam	200	3	Pathanamthitta	175	4	Alappuzha	175	5	Kottayam	200	6	Ernakulam	160	7	Thrissur	210	8	Idukki	160	9	Palakkad	160	10	Malappuram	210	11	Kozhikode	210	12	Kannur	210	13	Wayanad	250	14	Kasargod	120
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10	Malappuram	210																																																																													
11	Kozhikode	210																																																																													
12	Kannur	210																																																																													
13	Wayanad	250																																																																													
14	Kasargod	120																																																																													

4	Total Irregularities detected in Sl.No.2	2980	3167	3036	3392	4446	17021
5	Number of theft cases in Sl.No.4	386	336	386	386	896	2390
6	Total amount realised (₹ in crore)	2.53	2.16	2.58	2.78	5.61	15.66
7	Number of cases pending	3	4	4	9	33	53

- No target was fixed by APTS to the units for conducting inspection of premises of consumers.
- The percentage of checking of consumers on an average was between 0.23 and 0.28 during 2010-11 to 2014-15.
- Theft cases were detected in large commercial and industrial consumers like restaurants and hotels, shopping malls, etc., on inspection by APTS. The percentage of checking by APTS wing was less than five per cent in these cases also.
- Analysis of eight pending cases involving recovery of ₹21.82 lakh revealed that no follow up action was taken by K.S.E.B L
- The surge in detection of theft cases in 2014-15 when number of inspection increased points to the need for strengthening the APTS Wing further.

GoK replied (January 2016) that for increasing the percentage of inspection, huge manpower is required as consumer base in KSEBL is ₹1.16 crore. Standing instructions were, however, issued to conduct a minimum of 100 inspections in a month and the units were conducting 200 inspections in a month. The reply was not acceptable since the inspection conducted was inadequate to supplement efforts under RAPDRP to bring down AT&C loss to 15 percent.

Even though the target has been refixed, all the units are doing their best to conduct maximum number of inspections in a month. In order to increase the percentage of checking, additional monthly special drive inspections are also being carried out by all the unit concentrating large commercial and industrial consumers. APTS units are authorized to access the ORUMA NET Data base to view and analyze the anomalies of consumers. Hence, these real time monitoring works carried by the APTS units are also to be considered as part of inspection.

In KSEB Ltd., out of ₹1.18 crore consumers 92 lakh consumer are domestic. The APTS units are mainly targeting the balance 2 lakh of consumers which include categories like industrial commercial, agricultural etc. Hence the present mode of comprehensive inspection conducted after detailed analysis is sufficient.

2.3.11	<p>Non-constitution of Special Courts</p> <p>The National Electricity Policy lays special emphasis on time bound reduction of transmission and distribution loss and speedy implementation of stringent measures against theft of energy. As per Section 153 of the Electricity Act, 2003, GoK was to constitute Special Courts for speedy trial of offences relating to theft of energy.</p> <p>Instead of constituting Special Courts, GoK designated 43 existing District and Session Courts, Additional District Courts and Session Courts as Special Courts with the concurrence (July 2007) of the High Court of Kerala thereby defeating the objective of constituting Special Courts and denying speedy trial of offences relating to theft of energy. Due to non-setting up of Special Courts as envisaged in the National Electricity Policy, none of the 53 cases of theft of energy could be disposed.</p> <p>The Government did not give any reply about formation of these Special Courts.</p> <p><i>Recommendation No.1: Inspection by APTS should be strengthened to bring down AT&C loss to 15 per cent. GoK should form Special Courts to ensure disposal of theft cases.</i></p>	<p>Govt. has designated 43 Nos of existing courts, as special courts for the speedy disposal of energy theft cases. Out of the 53 nos. of pending cases reported, 15 nos. have already been disposed of. The pendency of the energy theft cases are not because of the non-setting up of special Courts, but due to the reluctance on the part of the SHO of the Police Station concerned to charge sheet the case. Moreover, most of the energy theft cases are challenged by the consumers by filing petitions before various legal forums like CGRF, Appellate Authority, CDRF etc which do not have jurisdiction to entertain the matter.</p> <p>Action Taken : For new Centrally Aided Projects DDUGJY & IPDS separate dedicated accounts are opened. All project related payments to the contractors (and others) are being made directly from these dedicated bank accounts. Nodal agencies have the view right of these accounts.</p>
2.3.12	<p>Fund Management</p> <p>Non-opening of project-wise bank account</p> <p>As per Memorandum of Agreement (MoA), KSEBL was to open project wise escrow bank account for Part A and Part B projects to ensure debt servicing on principal, interest and other charges during pendency of the loan to the satisfaction of the nodal agency. Funds provided shall not also be diverted for any other scheme or purpose.</p> <p>KSEBL opened a separate bank account for the implementation of the 43 Part A and B projects and three SCADA projects. First instalment of loan amounting to ₹251 crore received during January 2010 to December 2012 for Part A and B projects and SCADA projects were deposited in the bank account. Violating the guidelines of RAPDRP, the amounts were transferred to routine account of KSEBL within five days of receipt.</p>	<p>2.3.12 & 2.3.13</p> <p>KSEBL had opened a separate Bank Account for receipt of the fund of R-APDRP and for expenditure. For administrative convenience project-wise accounts have not been opened. For Part B Scheme of RAPDRP, only 15% of the project cost was received from PFC initially. In certain cases, the expenditure incurred has already been met from KSEBL's own resources. The works of the R-APDRP are being executed at Circle level/Division level and separate account heads are provided for booking the expenditure related to R-APDRP works. The accounts of offices concerned would reveal the utilization of R-APDRP funds. It may be noted that in KSEBL the servicing of loan is done at the Head Office level and hence separate account was not opened. It is also ensured that KSEBL would be servicing the loans (ie. repayment of principal amount & its interest) through the designated bank account maintained for R-APDRP. For separate accounting classification, designated bank account and strict reconciliation started for enabling proper audit certification. Project-wise accounts are also exists in KSEBL.</p>
2.3.13	<p>Non-maintenance of project-wise accounts</p> <p>As per MoA, KSEBL was also to open separate project-wise accounts and sub-accounts immediately, for separate accounting classification, both on the receipt and expenditure side for enabling proper audit certification.</p> <p>CE (Corporate Planning) directed (December 2009) section offices, subdivision offices and division offices to maintain separate project-wise register. Expenditure was also to be</p>	

booked under RAPDRP head and RAPDRP bills bound separately.

Audit examined all Part A and Part B projects and noticed that:

- No separate register and separate bank account was maintained for these projects. Due to this, payment to contractors was effected through the normal account of the circle/division of the project area.
- Even though there was a full fledged Finance and Accounts Wing under Director (Finance), there was ineffective monitoring on the maintenance of project-wise separate account.
- In respect of 40 Part B projects executed departmentally, there was no separate purchase of material. The material required for RAPDRP work was issued and accounted under normal Material at Site Account (MASA) of the Division or Section concerned and RAPDRP material was clubbed with normal work material as illustrated below:

Table 2.31: Details of RAPDRP and Non-RAPDRP material clubbed under MASA

Month	Electrical Section	Material Consumption Statement number	Nature of work
July	Kililikkolloor	48/14-15	Normal work
		49/14-15	RAPDRP work
		50/14-15	Normal work

Due to clubbing, availability of material or diversion of material held for RAPDRP work at any point of time could not be determined and RAPDRP work bills were bound along with normal work bills.

As no separate account was maintained for RAPDRP work, financial progress of Part B project was arrived at by simply multiplying the executed quantity or physical progress in km/numbers with the cost estimate as provided in DPR and had no connection with the actual expenditure incurred.

GoK replied (January 2016) that for administrative convenience, project-wise accounts were not opened. Material were procured centrally for funded schemes and normal work and during emergency or natural calamities, material were diverted to restore power supply.

The reply was not acceptable as non-maintenance of project-wise separate account was a clear violation of guidelines/MoA

	<p>which resulted in non availability of proper records for audit certification and for calculating the actual expenditure incurred for the scheme.</p> <p><i>Recommendation No. 2: Separate project-wise accounts should be opened for having better control over expenditure and project monitoring.</i></p>	<p><i>Action taken: For new Centrally aided Projects DDUGJY & IPDS separate dedicated accounts are opened. All project related payments to the contractors (and others) are being made directly from these dedicated bank accounts. Nodal agencies have the view right of these accounts.</i></p>
2.3.14	<p>Irregular payment of interest free advance</p> <p>As per clause 14.1 of special conditions of contract for execution of Part A projects, release of payments was performance based, where payments would be made for measured deliverables and outputs. As per the payment schedule, payment of 5 per cent (on approval of design), 25 per cent (Installation of hardware), 20 per cent (Installation of software), 30 per cent (approval of user acceptance test) were permissible on completion of prescribed milestone. There was no provision for payment of advance on delivery of material. Violating the above clause, based on the recommendation of the Chairman and Managing Director, Board of Directors decided (August 2014) to pay interest free advance of ₹14.50 crore to KDN, being 60 per cent of payment against the security of material delivered and corporate guarantee executed by KDN. Thus, payment of interest free advance of ₹14.50 crore was not only against scheme guidelines but it also amounted to undue favour to the contractor.</p>	<p>Based on the payment conditions specified in the Special Conditions of Contract clause GCC 14.1, payments are to be released to IT Implementation Agency (contractor), M/s. KEPCO KDN on completion of milestones.</p> <p>During the execution of project, the IT Implementation Agency (ITIA) intimated the details of severe cash flow issues faced by them (as they claim to have already delivered project deliverables costing more than ₹122 crore, but received only ₹64.31 crore), which is leading to hamper the progress of project.</p> <p>The 16th meeting of the Board of Directors of KSEBL held on 16.08.2014 resolved to release 60% of the payment against the equipment delivered, since KSEBL would forfeit the opportunity to convert the loan to grant if the project is not completed within a reasonable time. For timely completion, ITIA need to be ensured regular flow of funds. The equipments (hardware, software, networking equipments etc.) procured by ITIA for Data Centre (DC), Disaster Recovery Centre (DRC), Customer Care Centre (CCC) and 43 towns is with KSEBL. The payment thus released is to be adjusted in the milestones payments subsequent to the satisfactory completion of the respective payment milestone. Since the ITIA, M/s. KEPCO KDN being Government Company based in Korea, an appropriate corporate guarantee of the company has been obtained towards the release of the payment.</p> <p>The severe cash flow issue faced by ITIA was discussed during the Southern Regional Power Secretaries meeting of 17.11.2014 held at Chennai under the chairmanship of Secretary (Power), Govt. of India. Based on this, the details of the payment made outside the milestone and the circumstances necessitated such a payment was forwarded to the Power Finance Corporation (PFC). In reply to this, PFC intimated to note the para 5 of the Advisory issued during April 2014, which specifies that "Utility can utilize the provisions of the clause GCC14.1(9) available in the contract under RFP Section-VIII,</p>

		<p>Special Conditions of contract for making payment to ITIA for the project area/milestones, where major portion of work has been completed and only minor portion of work or supply is pending/deficient and which does not affect the performance of the system".</p> <p>The specific payment of ₹14.5 crore, outside the scope of the milestone based payment was released against the equipment delivered and also being deducted at the rate of 18% from subsequent invoices. Hence, this payment was treated as an Advance Payment. Also, interest on this advance payment was not imposed as it was released against 60% of the value of the equipments which are already delivered and handed over to KSEBL. The ITIA is still continuing the work without cost overrun at the quoted price, which was quoted way back in April 2010. Hence, the payment made is totally justifiable for the progress of the project. KSEBL Board of directors has taken a policy decision in sanctioning the specific payment of ₹14.5 Crore. It is to be noted that precedence exists in general contract conditions for release of payment based on delivered material cost of up to 70%. No undue favour was extended to ITIA and the contract with the firm has not smoothened the implementation of the project. The payment was given only for the items delivered / work progressed and also as per the discussions / approval of PFC.</p>
2.3.15	<p>Implementation of projects</p> <p>Implementation of Part A projects under RAPDRP was aimed at capturing accurate figures of AT & C loss through installation of IT module for data acquisition in the project area along with establishment of IT enabled customer services. Part B projects aimed at strengthening transmission and distribution networks to bring down AT&C loss to 15 per cent.</p> <p>Even though all 43 Part A projects were to be completed by November 2014 and 40 Part B projects between June 2015 and March 2017, only 31 Part A projects had, however, been completed as of September 2015.</p> <p>Non-completion of projects was due to delay in installation of IT module for data acquisition and delay in completion of IT enabled customer care services envisaged under Part A and delay in completion of distribution strengthening works under Part B. Non-completion of projects led to non-achievement of objectives of RAPDRP and cost escalation besides probable non-conversion of loan into grant as discussed in succeeding paragraphs.</p>	<p>Even though the Implementation of Part-A (IT) projects was initiated on 27.03.2010 with the release of Request For Proposal (RFP) document, the initiation of the project got delayed due to litigation. Based on the judgment by the Hon'ble High Court of Kerala on the Writ Petition (W.P. No.311/2011) filed by KDN, the Amendment - to the original LoA was issued on 07.11.2012 to initiate the project. The contract agreement was subsequently executed on 21.11.2012. The completion period was extended by PFC up to end of November 2015 and again extended up to the end of September 2016. Later the time limit for the completion of IT Projects was extended up to 31st March, 2017. KSEBL has taken earnest attempts to complete the project within the time frame extended by PFC and the following has been achieved:</p> <ol style="list-style-type: none"> 1. All 43 towns have been declared Go-live as on 30 November, 2015. 2. GIS network survey/approval- completed for 43 towns as on date. 3. Setting up of Data Centre, Disaster Recovery Centre and Customer Care Centre have been completed and all of them are functional. 4. All software applications (WSS, CCC, CCDB, GIS, N/

		<p>MDAS, EA, AM, MM, PMS etc.) are deployed in towns.</p> <ol style="list-style-type: none"> Connectivity established in all towns and field office network Installation has been completed in all 228 Section offices under the 43 towns. AT&C loss report generation has started for almost all towns. <p>The initial Go-Live towns are completely stable now and AT&C loss reports are being generated for these towns. Other towns are undergoing the process of stabilization necessitated due to the replacement of faulty border and feeder meters which got damaged due to prolonged delay in the initiation of the project (which were installed during 2009-10). Also, heavy monsoon attributed to the failure of border, feeder and DTR meters requiring replacement and installation of lightning protection equipments. Once Go-Live had been declared, the town requires a stabilization period. The AT&C loss calculation needs fine tuning which is carried out within the three months period.</p> <p>All the intended consumer services are implemented in all 43 towns. The centralized Customer Care Centre (CCC) is also functioning at Thiruvananthapuram. In addition to this, all Section offices under RAPDRP scheme have exclusive Public Relations Assistants to cater to the requirement of consumers through IT enabled systems. Complaints / customer services relating to billing, metering, new connection, disconnection, attribute change, enhancing customer convenience, change of contract load etc. are also implemented in all Electrical Sections.</p> <p>As the Part-A project is being completed within the allowed time, the audit observation that non-completion of projects led to non-achievement of objectives of RAPDRP and cost escalation and non-conversion of loan into grant is not correct.</p>
2.3.16	<p>Execution of Part A projects</p> <p>IT modules for data acquisition included installation of Meter Data Acquisition System and Geographic Information System (GIS) solution in all 43 Part A projects. Out of 43 projects, seven projects were completed within the extended time of five years (November 2014), 24 projects after delays ranging from one to nine months, while balance 12 Part A projects remained to be completed as of September 2015.</p> <p>Audit examined implementation of all 43 Part A projects and noticed that the reasons for non-completion of data acquisition module were delay in award of work, delay in commissioning of Data Recovery Centre and non-replacement of incompatible meters by KSEBL as discussed below.</p>	<p>As part of the implementation, Automatic Meter Reading (AMR) of Distribution Transformers, Feeders, Boundary meters etc. is to be carried out. For this, the ITIA, M/s. KEPCO KDN is to install GPRS Modems for energy meters to transfer meter data to Meter Data Acquisition System. The ITIA initiated installation of GPRS Modems in feeders, border and DTR meters.</p> <p>Completed modem installation in 41 towns. The work is progressing in the remaining two towns and the same will be completed within the project timeline. As IT Implementing Agency (ITIA) has completed the modem installation quantity as specified in the Letter of Award (LoA), KSEBL is procuring additional modems required for these two towns. The installation of these modems will be carried out by KSEBL.</p> <p>The main objective of Meter Data Acquisition System is to</p>

acquire meter data automatically from remote by avoiding any human intervention, monitor important distribution parameters, use meter data for accurate billing purposes and generate exceptions and MIS reports for proper planning, monitoring, decision support and taking corrective actions on the business activities. This is achieved by providing an Automatic Meter Reading (AMR) based Data Logging System by installing GPRS enabled modems along with Border Meters, Feeder Meters and Distribution Transformer Meters. As per the Request For Proposal (RFP), the functioning of Data Acquisition System mainly includes data collection, data processing, data transfer, messaging etc. and these processes are in no way related or affected by the delay in commissioning of Data Recovery Centre.

The HT meters belong to high value consumers of KSEBL. During bid finalization, it was assumed that, data can be retrieved from all these meters and it can be sent to the server through modem. When installation of modems had initiated for these meters, compatibility issues came into sight, which were affecting the performance of the meters, even though modems were sending data. Hence, the ITIA was directed to stop AMR modem installation for HT/EHT consumers till new meters are installed. The AMR implementation for meters is envisaged under RAPDRP scheme for the purpose of energy auditing. For HT consumers, this can be achieved without the implementation of AMR meters, as the data required for energy auditing can be obtained from HT Billing application, Enrgise. Further KSEBL is replacing all HT consumer meters by procuring AMR compatible meters.

It may be noted that the modems, meters, CT/PTs etc. installed in transformers and border locations are exposed to the natural environment and had challenges of climate and natural calamities. The frequent failures due to lightning, rain etc. for components in the field have given certain challenges, which were addressed through multiple rectification process and site visits. Also, the expansion of the network has created requirements for additional locations to be brought to monitoring which necessitated variation in quantity of equipments along with its associated procurement process.

As of now, all of the 43 towns are generating AT&C loss reports. In view of the above, it is to be noted that the audit finding in the delay in award of work, delay in commissioning of Disaster Recovery Centre and non-replacement of incompatible meters are in no way related or have affected the completion of data acquisition module. The audit observation is not correct since the functioning of data acquisition module mainly includes data collection, data processing, data transfer, messaging etc. as per the RFP.

2.3.17	<p>Appointment of IT Implementing Agency (ITIA)</p> <p>As per clause 21.7 of the terms and conditions of PFC for sanctioning loan, KSEBL was to award Part-A projects to ITIA within three months from the date of sanction i.e. by 25 February 2010.</p> <p>Scrutiny of records revealed that there was delay in tendering process for appointment of ITIA for the execution of Part A projects and the contract was awarded to KDN belatedly in September 2010. Thereafter, GoK directed (December 2010) KSEBL to cancel the contract awarded to KDN and to invite fresh tender because of allegations of corruption. The decision was challenged by KDN in the Hon'ble High Court of Kerala. Work was again awarded (September 2012) to KDN on the basis of the decision of the High Court for completion within 18 months i.e. March 2014. The work was in progress (November 2015). Installation of IT modules for collection of data and IT enabled customer care services envisaged under Part A of RAPDRP was pending. Thus, Audit observed that there was delay of two years in award of work due to intervention by the Government.</p>	<p>The Steering Committee meeting for RAPDRP Part-A (IT) held on 26.11.2009 approved the DPR and sanctioned ₹214.39 Crore as loan to KSEB. On 04.01.2010, ₹64.34 Crore (being 30%) was released as the first instalment. The implementation of the projects was initiated with the issue of Letter of Award (LoA) to the ITIA, M/s. KEPCO KDN.</p> <p>The Hon'ble Chief Minister and the Hon'ble Opposition Leader of Kerala raised reservations over the tender process. Based on their letters, G.O. (Rt) No.281/2010/PD dated 27.12.2010 was issued cancelling the G.O. which accorded sanction to KSEB to entrust the implementation of the IT systems under Part A of the RAPDRP scheme to M/s. KDN. KSEB was also ordered to take necessary steps for re-tendering the project for the implementation of Part-A of RAPDRP scheme.</p> <p>The Hon'ble High Court of Kerala delivered the judgment on 08.05.2012 on the Writ Petition filed by M/s. KDN quashing the G.O. (Rt) No.281/2010/PD dated 27.12.2010 and accorded sanction to KSEB to entrust the implementation of the IT systems under Part A of the RAPDRP to M/s. KDN Ltd.</p> <p>It is to be noted that the Government Order was based on allegations. To protect public interest, Government decided to cancel the award of work. Under Clause 6.4 of the quadripartite agreement, role of Government of Kerala is that of a Guarantor. Even though, the funding agency is PFC, as KSEB is a fully owned utility under Government of Kerala, the decisions of the Government are directly applicable to KSEBL.</p>
2.3.18	<p>Implementation of Meter Data Acquisition System (MDAS)</p> <p>Meter Data Acquisition System (MDAS), proposed under Part A projects, aimed to acquire meter data from system and selected High Tension (HT) consumer meters automatically avoiding any human intervention. It also aimed to monitor important distribution parameters for taking corrective action. All the feeder meters, DT meters and all HT consumers' meters in the entire utility area were to be covered in MDAS by installation of modem. The meter data from all DTs as well as HT consumers and data from feeder meters would be transmitted to central data centre server. As per the guidelines, meters were to be made DLMS96-compliant by KSEBL.</p> <p>KDN was responsible to install 18526 modems in all border meters, feeder meters, DT meters and HT consumers' meters. The following works and issues were pending as of August 2015:</p> <p>Table 2.32: Status of Installation of MDAS</p>	<p>As part of the implementation, Automatic Meter Reading (AMR) of HT Consumers, Distribution Transformers, Feeders and Boundary meters is to be carried out. For this, the ITIA, M/s. KEPCO KDN is to install GPRS Modems along with energy meters to transfer meter data to applications. The ITIA initiated installation of GPRS Modems in the meters of HT consumers in co-ordination with TMR Division of KSEBL along with feeders, border and DTR meters.</p> <p>It was also observed that the meters (feeder, DTR etc.) installed in the project towns were not DLMS compatible. For AMR implementation, these meters are to be replaced with new meters, which are compatible for data transfer. As part of town stabilization process, replacement of non-compatible/faulty border, feeder and DTR meters along with installation of modems and SIM configuration are being carried out in a progressive manner, which is almost complete.</p> <p>Based on the contract conditions, the ITIA is responsible for the installation of 18526 modems in the meters of border, feeder, DTR and HT consumers, which is almost complete except installation of modems for HT consumers.</p>

Item	Target	Installed/ communicati ng	Reasons
(In numbers)			
Installation of Modern	18,526	7,386	Replacement of DLMS non- compliant HT meters by KSEBL pending
Communicati ng with Central data server	7,386 installed	3,355 out of 7,386 modem	Compatibility issue as discussed below

Scrutiny of records in 43 Part A projects revealed that:

- KDN could not install modems in 4400 HT meters as these meters were DLMS non-compliant but were not replaced by KSEBL to make them DLMS-compatible. The existing HT meters were purchased by consumers and when modems were installed, meters were stuck or gave abnormal figures, wrong reading, etc. KSEBL directed (October 2014) KDN to stop installing modem on HT consumers' meter till new ones were installed by KSEBL. Action for procurement of new HT meters was, however, not initiated so far (August 2015).
- Similarly, audit scrutiny in three Part A projects revealed that existing feeder meters, border meters and DT meters were either faulty or DLMS-non compliant but not replaced by KSEBL as shown in Table below:

Table 2.33: Details of faulty and DLMS-non compliant meters
(In numbers)

Name of town	Feeder meters		Border meters		DTR meters	
	Total	Faulty/ DLMS- non- compli ant	Total	Faulty/ DLMS- non compli ant	Total	Faulty/ DLMS- Non- Compli ant

As pointed out in audit, there are around 4400 HT meters, where modems are to be installed. These meters belong to high value consumers of KSEBL. They are spread across Kerala. During bid finalization, it was assumed that, data can be retrieved from all these meters and it can be sent to the server through modem. Since the meters are spread across Kerala, evaluation of all these meters is not possible. Now, when modem installation has started in these meters, even though it was sending data, the meters were behaving abnormally. Since these meters belong to high value consumers of KSEBL, which directly affects the revenues, the ITIA was also directed to stop AMR modem installation for HT/EHT consumer meter till new meters are installed. Board has now decided to replace these meters so as to complete the installation of modems for high value consumers. The AMR implementation for meters is envisaged under RAPDRP scheme for the purpose of energy auditing. For HT consumers, this can be achieved without the implementation of AMR meters, as the data required for energy auditing can be obtained from HT Billing application, Enrgise. Hence, this will not affect the RAPDRP IT implementation in KSEBL towards the objective of completion by the end of the stipulated time line. Further KSEBL is replacing all HT consumer meters by procuring AMR compatible meters. The tendering process is in progress and the supply & installation of meters is expected to be initiated during October 2017.

It may be noted that the modems, meters, CT/PTs etc. installed in transformers and border locations are exposed to the natural environment and had challenges of climate and natural calamities. The frequent failures due to lightning, rain etc. for components in the field have given certain challenges, which were addressed through multiple rectification process and site visits. Also, the expansion of the network has created requirements for additional locations to be brought to monitoring which necessitated variation in quantity of equipments along with its associated procurement process.

Similarly, all faulty and non DLMS compliant feeder meters, border meters and DT meters were replaced by KSEBL. The meter readiness status of all these meters was conveyed to ITIA by respective nodal officers. All the feeder meters and border meters are functional now and data is being sent to server through modem. The implementation of modems for DT meters is completed in 41 towns and it is expected to be completed in remaining 2 towns shortly with the modems procured by KSEBL.

As DPRs were compiled in 2008-09 from 203 Section offices covering around 50,000 Kms of network, some compatibility issues had crept

	<table border="1"> <tr> <td>Kunnamkulam</td><td>11</td><td>0</td><td>15</td><td>14</td><td>316</td><td>0</td></tr> <tr> <td>Guruvayoor</td><td>11</td><td>0</td><td>16</td><td>15</td><td>535</td><td>33</td></tr> <tr> <td>Thrissur</td><td>37</td><td>24</td><td>25</td><td>20</td><td>1436</td><td>1336</td></tr> </table> <p>Slow progress in completion of MDAS resulted in generation of inaccurate AT & C loss data from 31 towns declared go-live as discussed in Paragraph 2.3.20.</p> <p>GoK replied (January 2016) that during bid finalisation, it was assumed that, data could be retrieved from all these meters and sent to the server through modem. When modem was installed the meters were behaving abnormally. Since these meters belong to high value consumers of KSEBL, it was directed to stop the installation of modem.</p> <p>The reply was not acceptable as improper field study conducted by Chief Engineer (Corporate Planning) at DPR preparation stage was the reason for non-compatibility issue. No response was received in respect of DT meters.</p>	Kunnamkulam	11	0	15	14	316	0	Guruvayoor	11	0	16	15	535	33	Thrissur	37	24	25	20	1436	1336	<p>into the DPRs due to its complexities. Since, KSEBL has not executed any similar projects earlier, no historic data was available. Also, the concept of adoption of communicable (DLMS compliant) meters was in its nascent stage in KSEBL. Owing to the unique nature of the project, there was no option for any cross verification. However, for all future proposals, more diligence will be applied to ensure recurrence of such mistakes.</p>
Kunnamkulam	11	0	15	14	316	0																	
Guruvayoor	11	0	16	15	535	33																	
Thrissur	37	24	25	20	1436	1336																	
2.3.19	<p>Implementation of Geographic Information System (GIS)</p> <p>Under Part A of RAPDRP, a Geographic Information System (GIS) solution consisting of a system for capturing, storing, checking, integrating, manipulating, analysing and displaying geo data related to positions on the earth's surface and data related to attributes of the entities or customers in a utility area was to be set up. Satellite Images from National Remote Sensing Centre (NRSC) were obtained in respect of all 43 towns but GIS network survey and GIS consumer survey were yet to be completed due to inaction on the part of KDN. The GIS asset mapping included field visit to identify and locate the assets for mapping, painting each pole and numbering. KDN had not deputed adequate manpower for this work.</p> <p>Timely completion of GIS based consumer indexing and asset mapping would have enabled KSEBL to locate a particular customer and the DT from which connection provided, location, etc., to identify the exact location of AT & C loss to take corrective measures. Due to delay in completion of GIS activity by KDN, the benefits envisaged under RAPDRP could not be availed as of September 2015.</p> <p>GoK replied (January 2016) that the identified features reported as not having provided were already functional in GIS</p>	<p>The observation of audit that GIS network survey is not completed is not correct. The GIS network survey is completed in all 43 towns and the network is available in GIS system. In the case of GIS asset mapping, the work is also completed in majority of the towns. The works of numbering and painting of poles are remaining in a few towns and the work is progressing. It is expected that the work will be completed within the time limit extended by PFC.</p> <p>AT&C loss reports are generated from all 43 towns. For generating AT&C loss reports, GIS system is mandatory. In these towns also, GIS system is used for identifying and locating assets. The observation of the audit that the benefits envisaged under RAPDRP could not be availed is not correct. It may also be noted that the pending work in all the remaining towns is also in progress and is expected to be completed within the time limit extended by PFC.</p> <p>Even though consumer survey was included in the implementation of Part-A IT projects, during the pilot implementation in the initial town, it was revealed that no valuable additional information will be obtained from the survey other than the information already available with KSEBL in the billing database. Hence, KSEBL is actively considering exemption of consumer survey in the remaining towns. It may also be noted that the Consumer survey does not affect the generation of required online reports.</p>																					

	<p>modules. Even though consumer survey was included in the implementation of Part A projects, during the pilot implementation in the initial town, it was revealed that no valuable additional information would be obtained from the survey other than the information already available with KSEBL in the billing database. Hence, KSEBL was actively considering exemption of consumer survey in the remaining towns. Consumer indexing data was already available with KSEBL. Indexing of the remaining towns will be completed during the stabilisation period.</p> <p>The reply was not acceptable as no proper study was conducted at the DPR stage to address this issue.</p>	<p>As the Detailed Project Reports (DPRs) were compiled in 2008-09 from 203 Section offices covering around 50,000 Kms of network, some compatibility issues had crept into the DPRs due to its complexities. Since, KSEBL has not executed any similar projects earlier, involving consumer indexing, no previous data were available. Because of the unique nature of the project, there was no option for any cross verification. However, for all future projects, more diligence will be applied to prevent the recurrence of such mistakes.</p>																																						
2.3.20	<p>Declaration of towns as go-live</p> <p>Although Part A projects were to be completed in all 43 towns by November 2015, 31 towns were declared 'go-live' as of September 2015 though modem installation was completed in three towns only. Due to declaration of towns as 'go-live' before completion of the entire Part A work, AT & C loss data gathered from nine towns displayed unrealistic figures, compared with base line data at the time of commencement of Part A projects, as shown below:</p> <p>Table 2.34: Base line AT & C loss and current AT & C loss figures. (Figures in per cent)</p> <table><tr><th rowspan="2">Name of town</th><th rowspan="2">Base-line AT & C loss</th><th colspan="2">AT & C loss for 2014-15</th></tr><tr><th>Third quarter</th><th>Fourth quarter</th></tr><tr><td>Chalakudy</td><td>23.77</td><td>55.33</td><td>56.47</td></tr><tr><td>Neyyattinkara</td><td>25.14</td><td>...</td><td>77.73</td></tr><tr><td>Ottappalam</td><td>28.01</td><td>64.55</td><td>61.00</td></tr><tr><td>Ponnani</td><td>22.25</td><td>56.03</td><td>39.80</td></tr><tr><td>Punalur</td><td>26.29</td><td>...</td><td>46.66</td></tr><tr><td>Shomur</td><td>25.36</td><td>48.60</td><td>32.89</td></tr><tr><td>Thiruvalla</td><td>27.86</td><td>42.41</td><td>38.58</td></tr><tr><td>Thodupuzha</td><td>27.47</td><td>41.13</td><td>51.54</td></tr></table> <p>Similarly, two internet connections were to be provided to DC in order to ensure uninterrupted network connectivity. BSNL network connectivity (primary) was delivered in all the 228 sections while Airtel connectivity (secondary) could be</p>	Name of town	Base-line AT & C loss	AT & C loss for 2014-15		Third quarter	Fourth quarter	Chalakudy	23.77	55.33	56.47	Neyyattinkara	25.14	...	77.73	Ottappalam	28.01	64.55	61.00	Ponnani	22.25	56.03	39.80	Punalur	26.29	...	46.66	Shomur	25.36	48.60	32.89	Thiruvalla	27.86	42.41	38.58	Thodupuzha	27.47	41.13	51.54	<p>KSEBL has declared Go-Live of all the 43 project towns by 30.11.2015 and AT&C loss reports are being generated for all these towns.</p> <p>The AT&C loss report of September 2015 covers the first quarter of financial year 2015-16. It can be noticed that the AT&C loss values of the R-APDRP priority towns namely, Shornur, Changanassery and Ponnani have come down to realistic range, i.e. 19.77, 19.2 and 23.7 respectively. In the remaining towns, the inadequacies leading to non-reliable data for computing AT&C loss were addressed and stabilized data is being generated.</p> <p>As pointed out in audit, considerable variation is noticed in the initial AT&C loss figures of other towns. This is as expected. The loss figures may vary considerably, if there are network changes in the field during the energy audit period. Network changes may happen due to switching operations in the field. This need to be analyzed by the field officers and the reasons for such variation are to be fixed.</p> <p>Two bandwidth service providers were envisaged in which the secondary link acts as a backup in case of failure of primary link. The absence of one link shall not affect the basic functionality of the field office. As on date, BSNL has completed all 228 links and Airtel has completed establishment of 226 links.</p> <p>On the basis of the above, it can be concluded that, Go-Live of town is done after completion of majority of required Part-A works. The process of generation of accurate AT&C loss reports requires trial and error and stabilization time.</p> <p>Consumer indexing is completed for entire towns.</p> <p>We have evolved a clear cut plan to stabilize all the towns by validating the AT&C figures through replacement of faulty meters/correction of GIS data.</p> <p>Hence, it is to be noted that, the towns were declared Go-Live after completion of work, which does not envisage generation of AT&C reports. The completion of activities of a town creates a platform for AT&C reports generation, which requires subsequent</p>
Name of town	Base-line AT & C loss			AT & C loss for 2014-15																																				
		Third quarter	Fourth quarter																																					
Chalakudy	23.77	55.33	56.47																																					
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Thodupuzha	27.47	41.13	51.54																																					

	<p>established in 170 sections only (August 2015). Since all 43 towns had to be declared go-live before the stipulated completion date of November 2015 in order to be eligible for conversion of loan into grant, CE (IT) who was responsible for the implementation of Part A projects, declared towns go-live even before completion of work, which was not in order.</p>	<p>data sanitization and stabilization activities. Now, AT&C reports are being generated for 43 towns after stabilization. The data sanitization activities are still progressing in some of the towns.</p>
2.3.21	<p>Commissioning of Data Centre (DC) and Data Recovery Centre (DRC)</p> <p>As per the Guideline, for storage of data to capture AT & C loss from 43 project areas, Part A projects should have one common Data Centre (DC) at a location identified by Power Companies with common Data Recovery Centre (DRC) on a different seismic zone other than in which the DC is located. The purpose of establishing DRC is that in case a disaster strikes at the primary DC, the DRC site will take over and start functioning as the primary site. As per guidelines, DRC was to be commissioned after successful completion of at least 70 per cent of Part A projects.</p> <p>The Board of Directors decided (August 2012) to establish DC and DRC in the same seismic zone (Zone-III). DC was established at Thiruvananthapuram and started functioning from 21 January 2014 while the DRC at Infopark building, Cherthala was yet to be commissioned even after 31 Part A projects (72 per cent) having been completed (August 2015). Slow progress in completion of several processes like hardware installation test, inspection, DC-DRC point to point link for data replication, infrastructure high level design and low level design document review, etc., were the reasons for delay in commissioning of DRC. Thus, the DC commissioned in January 2014 was vulnerable to high risk and loss of valuable data in the absence of DRC, for which Board of Directors of KSEBL was responsible.</p> <p>GoK replied (January 2016) that DRC at Cherthala was specifically designed to take care of seismic impact and there were practical difficulties and hardships in maintaining such a facility outside Kerala.</p> <p>The reply was not acceptable as data stored in DC was vulnerable to high risk and loss of valuable data in the absence of DRC in a different seismic zone.</p> <p><i>Recommendation No. 3: Preparation of DPRs should be realistic in order to guard against technology related compatibility issues at the implementation stage.</i></p>	<p>The guidelines for setting up of Data Centre (DC) and Data Recovery Centre (DRC) suggests that the DC and DRC has to be set up in two different earthquake zones. Entire state of Kerala is under a single earthquake zone. The building at Cherthala is specifically designed to take care of seismic impact. Hence, either DC or DRC is to be set up in a building which was designed and built considering the seismic resistant parameters. Otherwise the DRC should be located outside Kerala State. There will be practical difficulties and hardships in maintaining such a facility. Thiruvananthapuram falls in a region of lower seismic hazard compared to other major cities of Kerala. Since Vayrithi Bhavanam, Thiruvananthapuram is not a seismic resistant building, the DRC need to be setup in a building with seismic resistant capability. Several recently constructed buildings were surveyed and a suitable location was identified at Infopark, Cherthala, as the location meets the basic requirements for setting up a DRC.</p> <p>The DRC Hardware Installation Test was completed on 23rd March 2015. Now configuration of entire setup in DRC is completed and data replication is happening at DRC.</p> <p>Since DRC is established at a faraway place from DC and in an earthquake resistant building, the observation of the audit that the data stored in DC is vulnerable to high risk and loss of valuable data in the absence of DRC in a different seismic zone is factually incorrect.</p> <p>In view of the above, it is to be noted that, even though the guidelines for setting up of DC and DRC suggests that the DC and DRC has to be set up in two different earthquake zones, due to be peculiar situation of Kerala State, which is under a single earthquake zone, the building with seismic resistant parameters was identified for setting up the DRC. This is as equivalent as setting up DRC in different seismic zone.</p> <p>As DPRs were compiled in 2008-09 from 203 Section offices covering around 50,000 Kms of network, some compatibility issues had crept into the DPRs due to its complexities. Since, KSEBL has not executed any similar projects earlier, no historic data was available. Also, the concept of adoption of communicable (DLMS compliant) meters, activities involving consumer indexing etc. were in the nascent stage in KSEBL. Due to unique nature of the project, there</p>

		was no option for any cross verification. However, for all future proposals, more diligence will be applied to prevent recurrence of such mistakes.
2.3.22	<p>Non-completion of Customer Care Services under Part A project</p> <p>As per RAPDRP guidelines, a Centralised Customer Care Service Centre (CCC) was to be set up as part of Part A projects to improve the customer service by processing and resolving customer requests, queries and complaints in minimum possible time by taking up it at appropriate place and level. KDN was to link all 228 Electrical Sections falling under 43 Part A projects with the CCC and to impart end user training to the officials of electrical sections.</p> <p>Scrutiny of records revealed that, although the CCC at Thiruvananthapuram was inaugurated on 12 November 2014, 60 Electrical Sections covered under RAPDRP could not be linked with CCC out of 228 Sections as end user training to the officials of KSEBL was not imparted by KDN. Thus, the facility of complaint redressal system was denied to the consumers of 60 Electrical Sections.</p> <p>It was also noticed that even in CCC-linked Sections, integration of system with billing module and Consumer Indexing was pending (September 2015). GoK replied (January 2016) that 192 Electrical Sections had now been linked to CCC.</p> <p>The reply was not acceptable since the customer care services envisaged under RAPDRP could not be provided to the customers even after six years of sanctioning of projects.</p> <p>Spot Billing System (SBS) was intended to carry out spot billing for LT consumers. The Spot Billing System consisted of a Hand Held Equipment (HHE) and a separate Portable Printer (PP). End user training was to be imparted by KDN to meter readers of the electrical section of the project area concerned for the operation of SBS.</p> <p>Scrutiny revealed that KDN could not provide training to all the meter readers so far (September 2015). KSEBL, therefore, directed KDN to deliver SBS in phased manner so that SBS is delivered to trained meter readers only. Progress in installation of SBS is given in the following Table:</p>	<p>All customer care services envisaged in the project are implemented across 43 towns. All these services are also available over internet for these 43 towns. The centralized Customer Care Centre (CCC) also functioning at Thiruvananthapuram. All Electrical Sections under RAPDRP are linked to CCC.</p> <p>Even though the implementation of IT projects under Part-A RAPDRP was sanctioned during November 2009, the contract was executed only in November 2012. The Customer Care Centre started functioning from 20th February 2014 and was officially inaugurated on 12th November 2014. The facility started functioning within 1 year and 3 months from the initiation of the project. The Section offices under RAPDRP were progressively linked to CCC. The linking of billing module with consumer indexing can be done only after stabilization of all the applications.</p> <p>Hence, the audit observation that the customer care services envisaged under RAPDRP could not be provided to the customers even after six years of sanctioning of projects is not true, as benefits were made available within 1 year and 3 months from initiation.</p> <p>ITIA has completed the delivery of all Spot Billing Machines (SBMs) as per BoQ in the contract across all towns and the roll out is completed. Since the SBM are used for consumer billing, care has been taken to implement the SBM in a phased manner by imparting necessary training to the meter readers.</p> <p>The implementation of SBM is a new technology for meter reading which required pilot implementation before large scale roll out as it is directly connected with meter reading and billing considering the system change and revenue impact. All due care has been taken to see that customer satisfaction is ensured. Hence, the delay in the roll out of SBMs was not attributable to the training imparted to meter readers and they were sufficiently and properly trained to handle the SBMs.</p> <p>Out of the 6 Intelligent Display Management System (IDMS) touch panel based kiosk and cash/cheque collection kiosk, one is functional in CCC. The remaining five numbers have been installed in various locations across Kerala, identified by KSEBL, as below:</p> <ul style="list-style-type: none"> - Electrical Section Fort, Thiruvananthapuram - Electrical Section Cantonment, Kollam - Electrical Section Central, Ernakulam

Table 2.35 -Status of installation of SBS

Particulars	Sanctioned (Nos.)	Completed (Nos.)
Spot Billing Machine (SBM)	1335	430
SBM software	In all the 32 towns	20

GoK replied (January 2016) that KDN had deployed 520 machines in 32 towns. Since the SBMs were to be used for consumer billing, care was taken to implement the SBM in a phased manner after training the meter readers. The remaining SBMs would be implemented soon. The reply was not acceptable as non-installation of SBM was due to delay on the part of KDN to impart training to the meter readers of KSEBL.

As per G-3 of System Requirement Specification Document of Part A, Intelligent Display Management System (IDMS) was to be set up in six locations identified by KSEBL to provide comfort and easiness of operation to the customers. IDMS was to work as queue management system, making customer sit easily and comfortably instead of standing in a queue.

Due to non-finalisation of locations by KSEBL because of demand from all districts for these facilities, as of August 2015, one token dispenser machine, one touch screen kiosk and one cash collection kiosk could only be installed at Centralised Customer Care Center at Corporate Office of KSEBL as shown in Table below:

Table 2.36 -Status of implementation of IDMS

Item	Approved	Status of implementation
(Number)		
Automatic token dispenser machine and IDMS at customer care centre	1	1
Touch Panel based kiosk for furnishing information on billing, payment, duplicate bills, etc., at customer care centres.	6	1
Cash/cheque collection kiosk for automatically accepting cash and cheque payments from customers	6	1

GoK replied (January 2016) that out of six touch panel based

- Electrical Section v.v.v.v. Thrissur

- Electrical Section Kozhikode

Hence, it may be noted that all the Section offices under 43 RAPDRP towns has been linked to CCC along with completion of delivery of Spot Billing Machines as per BoQ in the contract to all RAPDRP towns and completion of installation of IDMS & kiosks.

	<p>kiosk and cash/cheque collection kiosk one each was installed and commissioned in CCC. The remaining five numbers would be installed in various locations identified by KSEBL, within a couple of weeks.</p> <p><i>Thus, due to non-linking of all sections with CCC and non-installation of Spot Billing Machine and kiosk, the objective of consumer satisfaction envisaged under RAPDRP remained unachieved.</i></p>	
2.3.23	<p>Extra expenditure in implementation of Part A projects</p> <p>In the execution of Part A projects, KSEBL incurred extra expenditure of ₹27 crore as discussed below.</p> <p>As per the bid (March 2010) for appointment of ITIA, each bidder was to quote specifically the bandwidth connectivity charges for five years. As per clause 14.3 of instructions to bidders (ITB), if an item was not listed in the price schedule, price loading was to be made by taking highest of the prices quoted by other bidders for such missing item or component. If the price of item is available, then it shall be considered for price loading.</p> <p>LI bidder (MIC Electronic Limited) quoted ₹195 crore including bandwidth connectivity charges of ₹26.54 crore for three years while L2 bidder (KDN) quoted ₹240 crore including bandwidth connectivity charges. KSEBL, instead of applying price loading proportionately for two more years (₹17.69 crore) on LI (MIC), applied clause 14.3 of ITB irregularly for price loading (₹47.46 crore) on LI bidder (MIC) for two more years by taking the highest connectivity charges quoted by bidders. After price loading, L2 bidder (KDN) became LI bidder, leading to awarding contract at extra expenditure of ₹27 crore (₹240 crore - ₹213 crore).</p> <p>GoK replied (January 2016) that there is a specific method for arriving at LI in case the period quoted for bandwidth is less than five years and loading principle had to be applied only in respect of the vendor who quoted lowest price, but only for three years. The reply was not acceptable due to the following reasons: As per clause 14.3 of Instruction to Bidders of RFP, clause 14.3 is applicable only if the price of an item is not available in the price schedule. Further PFC has clarified that if the price of an item is available, then it shall be considered for price loading. The bandwidth charges quoted by LI for three years was ₹26.54 crore. Even if this was proportionately taken for five years, the connectivity charges quoted by LI would be ₹44.23 crore and the rate quoted by LI would be ₹27 crore less than L2.</p> <p>Feedback Ventures Private Limited was appointed as IT</p>	<p>The implementation of the IT projects was initiated on 27.03.201 with the release of RFP document. As per the RFP clause (Corrigendum-I), bandwidth connectivity charges are to be quoted for five years by the bidders. The ITIA is to recommend the Bandwidth requirements as per their proposed solution and negotiate with the respective NSP/ISP on behalf of KSEBL and include the pricing for five years along with bid document, which shall be included for evaluation.</p> <p>The bandwidth connectivity clause under Corrigendum 1 is clear in specifying the requirement of KSEBL to bidders as "bandwidth connectivity for 5 years". Hence, anything other than this is to be considered as not in conformity with the requirement. Also, since the RFP is clear in specifying the duration (as five years), the bandwidth connectivity of those bidders who had not specified any duration to be considered as five years.</p> <p>The bid submitted by M/s. MIC Electronics contained connectivity charges only for 3 years for all types of connectivity requirement and also they have not quoted for GPRS connectivity requirement AMR of HT/EHT consumers under Part-II (non-RAPDRP). As per clause 14.2 of the Instruction to Bidders of the RFP, all items Appendix L must be listed and priced separately in the Price Schedules. If an item listed in Price Schedule is not priced, the prices shall be assumed to be included by the bidder in the prices of other items. M/s MIC Electronics has quoted bandwidth connectivity for 3 years, which was not in conformity with the RFP requirement. Since, this item is priced in the price bid, its price cannot be assumed to be included in the prices of other items.</p> <p>The RFP clause 14.3 of the Instruction to Bidders specifies methodology to be adopted in case of omissions and non-conformity in the price bid. "If an item is not listed in the Price Schedule, it shall be assumed not to be included in the Bid. In such event, if the bidder is otherwise substantially responsive, Bid Price shall be adjusted during evaluation of Price Proposals, for comparison purposes only, to reflect the price of the missing or nonconforming item or component. The price of the missing or non-conforming item or component for purpose shall be the highest of the prices quoted by the other bidder for such missing item or component".</p>

Consultant (ITC) of Part A projects for ₹35.74 lakh. Contract period was up to November 2013. As Part A projects were not completed within the stipulated time and extension was granted by PFC up to November 2015, ITC was retained at a monthly retainer fee of ₹1.5 lakh excluding taxes. The additional amount to be incurred up to the completion of Part A projects worked out to ₹36 lakh.

The clause 14.3 was applied for the nonconforming item or component and based on this, the bandwidth charges of M/s MIC Electronics has been adjusted by loading the same for two years more taking the highest bandwidth charges for the respective connectivity quoted from amongst the bidders. The amount arrived is added to the bid price of M/s MIC as per Clause 14.3. Accordingly for evaluation purposes, the bid prices quoted was loaded to reflect the price of non-material omissions and non-conformities. The highest connectivity charges quoted for a single link was ascertained. The same was also discussed in the Bid evaluation committee meeting convened on 18.6.2010. The bandwidth charges of M/s MIC Electronics has been adjusted by loading the same for two years more taking the highest bandwidth charges for the respective connectivity quoted from amongst the bidders. The amount arrived is added to the bid price of M/s MIC by applying RFP clause 14.3 of the Instruction to Bidders. The charges for GPRS connectivity for five years for non-RAPDRP areas are similarly loaded onto the bid price of M/s MIC. The loaded bid prices are evaluated as per the evaluation methodology mentioned in the RFP and the commercial scores are added onto the technical scores previously awarded during the technical evaluation of the bids. The Board meeting held on 25.6.2010 selected M/s. Korea Electric Power Data Company Ltd. (KDN Ltd.) as the ITIA for KSEB for implementing Part A of RAPDRP scheme.

As per the above explanation, it can be seen that:

The price loading done is fully as per the RFP guidelines.

The complete details of the evaluation process carried out were forwarded to PFC for their verification. PFC has confirmed that the Bid evaluation procedure KSEB had followed adheres to the provisions of RFP and RAPDRP guide lines mandated by PFC/MoP vide their letter no. 02:10:R-APDRP:II:2008:ITIA dated 30.07.2010.

The Hon'ble High Court of Kerala have also examined the procedures and found in accordance with RFP guidelines.

Hence, the finding in audit is factually incorrect.

As per PFC guidelines, The ITC contract was awarded to M/s. Feedback to facilitate and support KSEBL to handhold from concept to commissioning of Part-A of RAPDRP project till evaluation by TPIEA. Since the original contract was extended, the ITC contract has also to be extended till such period so as to satisfy the requirements of PFC guidelines. The additional expenditure in this regard is minimum and unavoidable. Also, while awarding original contract to ITC, in clause no. 4 of the Work Order it is specified that the period of engagement is for a maximum period of 4 years from the date of appointment and in case there is spill over of work beyond 4 years, KSEBL can continue to avail services of IT

		consultant. The extension of contract period was expected while awarding the work order itself. Hence, the extension of ITC contract and payment is inevitable. So, this can't be treated as additional expenditure.
2.3.24.	<p>Execution of Part B projects</p> <p>Work under Part B projects consisted of distribution strengthening process. On completion of Part B projects, AT&C loss was targeted to be brought down to 15 per cent from the range of 19.78 per cent to 29.17 per cent existing at the time of approval of projects by MoP. Even though 32 Part B projects were due for completion as of August 2015, no project could be completed and PFC extended the completion period to six years.</p> <p>Audit scrutiny of 43 Part B projects revealed that delay in submission of DPRs and award of work, delay in tying up loans, etc., were the reasons for non-completion of projects within scheduled time. Delay has led to extra expenditure and non achievement of benefit envisaged under RAPDRP as discussed below.</p>	<p>Since the reason for non-completion of projects within the schedule time is discussed in coming paras explanations are given under those paras.</p>
2.3.25	<p>Delay in submission of DPRs and financial tie-up</p> <p>As per the guidelines of RAPDRP (December 2008), the sanction process and other formalities for execution of Part A and Part B projects should be taken up simultaneously and ring fencing was to be completed within 16 weeks of the sanction of DPR. Similarly, tie-up with financial Institutions for counter part funding was to be firmed up within two months of sanction of the project.</p> <p>Scrutiny of records in 43 Part B projects revealed that:</p> <p>Sanction process and other formalities for the execution of Part A and Part B projects were not taken up simultaneously by KSEBL and Distribution Reforms Committee (DRC). While the DPRs for 43 Part A projects were approved by DRC (September 2009) and approved by the Steering Committee of GoI (November 2009), the process for the preparation of DPR of 43 Part B projects was taken up by K.S.E.B Limited belatedly in December 2009. The delay in preparation of DPR of 43 Part B projects by KSEBL and approval by DRC ranged from five months to 28 months.</p> <p>As per guidelines, ring fencing of the town was to be done by the utility by installing the system meters (import/ export meters, feeder meters, DT meters, boundary meters, etc.) on its own and shall be taken up immediately on approval of DPR.</p> <p>Ring fencing through metering of all import/export metering points and segregation of agriculture feeders was to be completed by K.S.E.B Limited within 16 weeks of the sanction</p>	<p>Part-A DPRs were prepared by the consultant selected from Government of India (GoI) empanelled vendors. The nature of work is more or less same in almost all utilities. Hence the preparation of part A DPR was completed. Field survey required was very small for quickly the preparation of Part-A DPR. In the case of Part-B the infrastructure requirement was to be collected from various field offices after laborious field survey of so many distribution components viz LT line, HT line, DTR, etc., and Transmission components viz new 33kV substations, 66kV substations, additional transformers, additional feeder and transformer bays in existing substations, additional 11kV circuit breakers etc which was a tedious and time-consuming work. Despite all these difficulties the submission of Part-B DPRs of 42 towns were completed during the period from 15-2-2010 to 12-10-2010 (maximum time taken from the sanction of Part-A DPR was only 12 months not 28 months as mentioned in the report). Only in the case of Thiruvananthapuram the time taken was 28 months. KSEBL submitted DPR of three SCADA towns on 15-10-2010 and the nodal agency approved Koc and Kozhikode towns on 22-2-2011. Sanction for Trivandrum scheme was received only on 3-8-2012.</p> <p>Even though KSEBL started the process of ring fencing of the project area immediately after the signing of quadripartite agreement, MoP through D.O. Letter No.6/8/2008 -EC/APDRP dated 4-9-2009 from Sri. Kapil Mohan IAS, Director (Distribution) GoI directed to use meter conforming to the new specification for ring fencing the scheme area. Nodal agency forwarded a draft India</p>

of DPR of Part A projects i.e. by March 2010. There was, however, delay ranging from two months to one year in completion of ring fencing. The delay in ring fencing was due to excessive time taken in replacement of existing faulty meters.

The delay in submission of DPR of Part B projects to PFC and delay in ring fencing resulted in non-commencement of Part B projects simultaneously with Part A projects and consequent delay in completion of Part B projects.

GoK replied (January 2016) that delay was due to resubmission of DPR in many cases on the basis of the corrections done by PFC.

The reply was not acceptable as corrections in DPR were warranted due to non-adherence to RAPDRP guidelines on submission of DPR.

As per clause 5.3 of MoA, 75 per cent of the project cost of Part B was to be availed as counter part loan from Rural Electrification Corporation (REC)/ Financial Institutions (FIs). Tie-up with FIs for counter part funding was to be firmed up within two months of sanction of the project.

In respect of 43 Part B projects sanctioned (June 2010 to August 2012) by PFC at a cost of ₹1078 crore, KSEBL decided (April 2012) to avail 75 per cent project cost (₹801 crore) as counter part fund from REC. Agreement for counter part funding of all 43 Part B projects was executed with REC on 5 July 2014 and funds were released from October 2014 onwards. Thus, there was delay ranging from two to four years in availing counter part funding after sanction of projects. Inaction and inadequate monitoring on the part of CE (CAP-S) to arrange counter part fund resulted in tardy implementation of Part B projects.

GoK replied (January 2016) that the delay in tying-up with REC for availing counter part funding was due to slow progress of Part B projects and consequent non utilisation of 15 per cent of GoI loan already received as first instalment. It was also stated that projects were not delayed due to scarcity of funds but due to diversion of material for urgent normal work. The reply was not acceptable since as per guidelines of RAPDRP, tying up counter part fund did not have any relation with progress of work and was to be firmed up within two months from sanction of projects.

Companion Standard (equivalent to IEC 62056) stating that it will be approved soon. Later the Central Electricity Authority vide letter no 502/6/2010- DP&D 120-60 dated 25-1-2010 informed to follow the draft standard since the approval of draft specification would be delayed. This issue delayed the purchase of the meters required for ring fencing. Further, the type testing of the meter was also delayed due to non-availability of test facility of new meter at CPRI test laboratory. Owing to the above reasons, KSEB could procure meters only by December 2010 and hence the ring fencing was delayed.

As per the guideline, establishment of base line data and its approval by Third Party Independent Agency (TPIA) appointed by nodal agency was a pre-requisite for the starting of part-B work. Hence Part-B work could not be started along with Part-A work. The base line data was established and approved by TPIA after ring-fencing the towns with feeder and border meters and taking three billing cycle data. The TPIA approved baseline data has been forwarded to PFC and they permitted to start the work. Execution of part -B works in 40 towns was started by June 2011. DPRs of all these towns were approved before 8-12-2010. So the statement that "the delay in submission of DPR of Part B projects to PFC and delay in ring fencing resulted in non-commencement of Part B projects simultaneously with Part A projects and consequent delay in completion of Part B projects" is not correct.

As per the RAPDRP guidelines 25% of the fund was to be taken as loan from Govt. of India and balance was to be raised from Financial Institutions (FIs), or own fund. Tie-up with FIs for counterpart funding was to be firmed up within two months of sanction of the project.

Board has decided to take the counterpart loan from REC, but agreement was executed only on 05.07.2015. Govt. of India has made upfront release of 15% to KSEBL as loan. Reasonable fund flow was ensured and bills were never kept pending for want of fund. Even though there was delay in tying up with REC for counterpart loan, this has only benefited KSEBL in terms of interest to be paid to REC for the loan for the period. This delay in availing counterpart loan has not affected the progress of the work. The Audit contention of inaction and inadequate monitoring on the part of Chief Engineer (CAPs) to arrange counterpart fund resulted in tardy implementation of Part B projects is factually incorrect.

2.3.26 **Extra expenditure in execution of Part B projects**

Out of 43 Part B projects, KSEBL decided to execute three city schemes on turnkey basis and as per guidelines, the contract was to be awarded within three months from date of sanctioning of the project. Audit examined all three projects and noticed that there was delay of 17 to 30 months in awarding contract as shown in Table below:

Table 2.37: Delay in awarding three turnkey contracts

SI No	Name of Project	Date of sanction by PFC	Date of invitation of tender	Date of opening of bids	Date of award of contract	Delay from the date of sanction of PFC
1	Thiruvananthapuram	03/08/12	27/03/13	07/10/13	03/04/14	17 months
2	Ernakulam	22/02/11	30/05/12	29/01/13	15/11/13	30 months
3	Kozhikode	22/02/11	10/05/12	10/12/12	24/07/13	26 months

The delay in awarding the contract by Chief Engineer (Distribution) resulted in delay in execution of the projects and cost escalation of ₹126.49 crore as shown below:

Table 2.38: Details of cost escalation due to delay in awarding work (₹ in crore)

SI. No.	Name of Town/project	Sanctioned Project Cost	Awarded project cost	Difference	Percentage change
	Ernakulam	184.47	243.97 (NCC)	59.50	32.25
	Kozhikode	158.81	198.74 (L & T)	39.93	25.14
	Thiruvananthapuram	173.94	201.00 (Leena)	27.06	15.56

GoK replied (January 2016) that there was only procedural delay in awarding the work which did not affect completion of

As these 3 city schemes include huge quantum of work and need close verification of specification of each item, a committee was constituted with Officers from the Distribution wing of South, Central and North along with Officers from the Legal wing and the Office of the Financial Advisor to frame and finalise the modifications required in technical specifications, terms and conditions of contract and other such matters in connection with tendering of the schemes.

Project cost being an estimate was only an approximation. Hence changes in cost/quantity were unavoidable during execution and the same (BoQ variation) was permitted by PFC. Distribution system being dynamic in nature and due to varying circumstances during the execution/implementation of the project, revision in BoQ/DPRs on account of network changes went beyond the sanctioned DPR cost. As per the Guideline for RAPDRP by Govt. of India, KSEBL has prepared the DPR based on 2009 Schedule of Rates (SOR). In the case of Kochi and Kozhikode schemes sanction was obtained only on 22.02.2011 and for Thiruvananthapuram on 03.08.2012. Considering the huge quantum of work involved in the three cities of Thiruvananthapuram, Kochi and Kozhikode, KSEBL decided to execute the work on turnkey basis. For tendering of the schemes Probable Amount of Contract was calculated using DPR rates. The bidders quoted higher rate (more than 40% of the estimated cost). After negotiation with the turnkey tenderers the work was awarded for an amount 15.1% above the estimated amount for Kochi and Kozhikode and 20.8% above for Thiruvananthapuram scheme. As the re-tendering at that stage might have delayed the project, the work was awarded at rates finalised after negotiation. Out of 40 town schemes, 32 schemes have been completed within the time limit allotted by the Ministry of Power. For the remaining 8 schemes, time extension has been given upto March, 2018 by the Monitoring Committee in its meeting conducted on 13.06.2017. Out of 32 town schemes, 27 towns achieved 100% or more financial progress, 5 towns were short closed since further progress was not possible due to issue beyond control of KSEBL. Closure proposals of 30 towns have been forwarded to PFC. Remaining 2 closure proposals will be forwarded to PFC by August 2017. 100% financial progress has already been achieved for 3 city schemes. Time extension for financial closure is obtained from Monitoring committee up to March 2018. Out of the total project cost of ₹1078.3 Crore, financial progress achieved is ₹1066.76 Crore. Counterpart loan of ₹542.45 have already been availed against the sanctioned loan ₹697.63 Crore. Balance Counterpart claim is pending because of the variation in BoQ. BoQ variation is already approved by PFC based on recommendation of DRC. Substantial portion of unclaimed

the scheme and it would be completed within the scheme period.

The reply was not acceptable as procedural delay ranging between 17 months to 30 months was extra ordinary and led to cost escalation of ₹126.49 crore.

MoP approved (February 2011) Kozhikode Town Scheme under Part B at a total outlay of ₹160.78 crore (₹158.81 crore for distribution work and ₹1.97 crore for transmission work). KSEBL placed (July 2013) work order with Larsen & Toubro Limited (L&T) for execution of the above work at a total amount of ₹198.74 crore excluding the two items viz., work of supply and installation of 11 kV sectionalisers and the work of retrofitting of existing RMUs as the rate quoted were abnormally high. The project completion date was March 2015.

In this connection, it was observed that while evaluating the rates offered by L&T, Chief Engineer (Distribution North) (CE, DN) had noticed (March 2013); that L&T had quoted abnormally higher rates for many items. However, only two of such items were excluded from the scope of the work of L&T. The major items of work retained in the scope of work with L&T for which exorbitant rates quoted were the following:

- *CCV type RMU - The quoted rate was ₹6.9 lakh as against the estimated rate of 4.2 lakh which was arrived at based on the market rate and the PFC approved cost data in the DPR. The excess expenditure was ₹11 crore for 400 RMU.*
- *Replacement of single phase meter - Rate of ₹2124 per meter quoted by the contractor was 2.5 times the estimate rate prepared based on KSEBL approved cost data. Excess cost was ₹6.5 crore for the tendered quantity of 56023 items.*
- *Supply of distribution transformers-The rate quoted by the contractor for distribution transformers (total value ₹5.93 crore) was double the KSEBL's standard rate.*

Awarding the above items of work to the contractor at exorbitant rates resulted in commitment of extra expenditure to the tune of ₹20.36 crore. This excess cost would have to be met by KSEBL since funding by PFC would depend on approved project cost.

wastage of UG cable provided in estimate in excess of norms of five per cent in Thiruvananthapuram and Kozhikode Town Part B projects amounted to ₹2.49 crore.

counterpart loan can be realised before 31st August 2017, after getting the approval for closure pending with the PFC.

Total convertible loan pending from PFC is 10% (107 Crore). Request has been forwarded to PFC to release this against 32 town schemes for which closure proposals have been forwarded to PFC.

CCV type RMU:

Open tenders were invited for the work and awarded to the lowest bidder. Only overall cost in the bid was considered and item wise cost was not taken into account. Costs of some items were above the SoR rate whereas below for some other items.

Regarding the high rate of RMU quoted by the Contractor, it may be noted that the specification of CCV type RMU considered was substantially different from standard RMU. Some of the additional features considered were;

1. SCADA compatibility, separate metering class current transformer for incomer load break switch, bus PT for measuring bus voltage, separate auxiliary transformer with appropriate ratings for the external modem and the battery charger.
2. Special Poly urethane powder coated painting suitable for seashore atmospheric condition.
3. Fault passage Indicator on all ring cables (the standard RMU has it on the incoming cable only).

Hence the price of SCADA compatible RMU (RAPDRP Project) cannot be compared with the standard RMU rate approved by the KSERC.

Replacement of Single Phase meters:

Though the rate quoted by the bidder for the replacement of the Single phase meter was exorbitant, it can be justified due to the following reasons.

1. Replacement of the old mechanical meters were envisaged with latest tamper-proof static meter cost of which is higher compared to the electro-mechanical meter. Work was undertaken under the RAPDRP project since there was a provision of 50% grant. Over and above, KSEBL was benefited due to energy saving by undertaking the work.

2. As per the RAPDRP Part B guidelines issued by the GoI, 50% of the fund could be converted to grant only if the loss is below 15% on a sustainable basis for five years. Hence replacement of old/mechanical meters and faulty meters with tamper proof static energy meter for loss reduction was undertaken on priority.

3. The rate quoted is inclusive of the transportation, inventory cost and labour charge for the replacement of the meter at consumer site and other subsidiary works like meter sealing, preparing the sealing certificate, returning of old meter to the KSEBL

		<p>Section office in proper packed condition, providing report on the reading of old meter and new meter and also the warranty management of the meter for five years.</p> <p><u>Supply of Distribution transformer</u></p> <p>1. As per RAPDRP Part B tender conditions, the specification of the transformer offered shall conform to IS 1180, IS 2026, IS 3347, IS 7421, IS 2099, IS 335 as amended from time to time. Based on REC specifications and CEA guidelines for 100 KVA and 160 KVA transformer with 3 star rating was considered.</p> <p>2. The high price of transformer against the estimate rate has been evaluated during the pre-bid stage and the following facts may be reported.</p> <p>a. The original estimate was prepared based on the 2009 SoR. Compared to SoR 2012, the quoted price is reasonable.</p> <p>b. As the price of transformer is covered under the scheme, there is eligibility for grant.</p> <p>KSEBL has implemented all these works with the intention of achieving the objective of the scheme and has decided that, the expenditure incurred over and above the cost approved by PFC during submission of closure would be borne by KSEBL.</p> <p>Provision for wastage was not provided in the estimate. In the contract executed for Trivandrum and Kozhikode also, it was not considered.</p>
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2.3.27 Delay in completion of work due to non-procurement of material

In respect of 40 Part B projects being executed departmentally, KSEBL did not procure material for the works in time leading to delay in completion of work and consequent cost overrun as discussed below.

Approved 40 Part B projects included reconductoring 77.40 km of 11 kV overhead (OH) line with Aerial Bunched Cables (ABC) and 1346 km of new ABC line in dense, theft prone and congested areas with the objective to minimize snapping of lines due to touching of trees or branches, reduction of commercial loss and increase consumer satisfaction by minimizing frequent outage/supply failure. K.S.E.B Limited could, however, draw seven km of new ABC as of August 2015 due to non-procurement of material as shown in Table below:

Table 2.39: Details of non-procurement of ABC material

Work	Target as per DPR	Proposed as per annual plan 2011-12	Quantity as per annual plan 2012-13
LT ABC (km)	989	191	890
HT ABC (km)	357	89	370

Audit examined ABC work in 25 Part B projects and noticed that in 22 projects ABC work had not commenced. In three projects, there was delay ranging between four to five years in commencement of ABC work due to non-procurement of ABC.

Delay also resulted in cost escalation of ₹2.82 crore in respect of Kollam project while in respect of Kannur and Kanhangad projects, length of proposed ABC laying was curtailed to compensate the cost escalation as shown in Table below:

Name of the project	As per DPR	Revised proposal
Kanhangad	31 km for ₹ 1.66 crore	Length reduced to 9.135 km
Kollam	44.40 km for ₹ 1.23 crore	Revised cost ₹ 4.05 crore
Kannur	126.90 km for ₹ 12.59 crore	Length reduced to 67.08 km for an estimate cost of ₹ 10.18 crore

Table 2.40: Details of execution of ABC work

GoK replied (January 2016) that KSEBL had no expertise in

Aerial Bunched Cable (ABC) Work:

Since competent labour for execution of ABC work was not available, it was decided to execute the work on turn-key basis. But participation of tenderers was very poor. In order to complete the work within the time allowed by Power Finance Corporation (PFC), at some places ABC work were replaced with overhead lines without compromising the objective of the project. PFC has extended the scheme period several times and hence ABC work executed in some other towns. Total ABC work executed as on date is LT ABC: 322 km and HT ABC: 77 km. ABC work at Attingal, Cherthala, Kayamkulam, Alappuzha, Aroor, Ponnani, Tirur and Pathanamthitta are completed.

In the case of Kollam, Kannur and Kanhangad projects ABC work was curtailed not due to cost escalation. For Kollam Town scheme, LT ABC work was replaced with LT reconductoring work. For Kanhangad Town scheme, HT ABC work was replaced with UG Cable laying. In Kannur execution is in progress. Extension is obtained upto 3/2018 for Kannur. As on date progress is 20km HT ABC. Execution of 50km HT ABC and 20 km LT ABC is in progress.

Board has taken maximum effort to complete the work within the sanctioned period and to execute the sufficient work for achieving the objective of the scheme.

In most of the cases contractors quoted above the estimate or single tender is received for ABC work. Approval from higher authority was required for awarding the work. This contributed to the delay in execution of project. For ABC, DPR rate was much below the rate approved by KSERC during July 2015 when most of the ABC work executed. Total quantity of 420 Km LT ABC have been completed till June 2017.

Under Ground Cable Laying:

Fast progress could not be achieved for UG Cable laying due to various reasons beyond the control of KSEBL like sanction for road cutting, road restoration charges, non-issue of permission for open trenching in BMBC roads/NHAI etc by road authorities. In the meeting convened by the Hon'ble Minister for Electricity on 11.10.2014, it was decided to execute the UG cable laying work on turnkey basis. Hence tenders were invited and now the work is in progress. Since it was decided to execute the work on total turn-key basis, centralized purchase of UG cable was not necessary relevant in the case. UG Cable laying work for 155 km was completed on 28.02.2017 and around 215 km is expected to be completed within the sanctioned period.

For Kannur town scheme, laying of new UG cable (83.6 km) will be completed within the sanctioned period. In the case of

Installation of ABC work and being a new technology they decided (February 2012) to execute the work on turnkey basis. However, participation by tenderers was very poor and the cost data of ABC was approved by KSERC only during July 2015.

The reply was not acceptable as Installation of ABC work was proposed in the DPR by KSEBL itself.

With the objective to minimize snapping of lines due to touching of trees, reduce commercial loss and to increase consumer satisfaction by minimizing frequent outage and supply failure, laying of UG cable was approved under 40 Part B projects. Status of the work as of August 2015 was as given below:

Table 2.41: Status of work of UG cable (August 2015)

Item of work	Sanctioned (km)	Completed (km)
11 kV new UG cable	269	78
Replacing 11 kV line OH with UG cable	85	0
Replacing 11 kV UG with UG	5.20	4

Audit selected 25 Part B projects for analysing reasons for delay in completion of UG cabling work and noticed non-procurement of material and right of way issues as discussed below:

> Under Part B project of Kannur town, laying new UG cable (83.6 km) and reconductoring (84.43 km) were approved. Since the physical progress of laying new UG cable was only 25.41 km, KSEBL decided (April 2015) to complete the balance work on turnkey basis while the reconductoring work on 84.43 km was yet to commence due to non-procurement of UG cable.

> Part B project of Chokli-Peringathur town, included UG cable work for 2.02 km spread over Chokli Section and Kodiyeri Section. 1.95 km of UG cable work was completed (May 2014) by Chokli Section and the balance railway crossing work of 0.07 km was yet to be completed by Kodiyeri Section. The completed portion was yet to be energised.

GoK replied (January 2016) that fast progress could not be achieved for UG cable laying due to various issues outside the control of KSEBL like road cutting sanctions, road restoration charges, non-issue of permission for open trenching in BMBC

replacement of OH with UG Cable (84.43 km), cable laying work for 45 Km remains and the same will be completed within the stipulated time. The delay in commencement of work is due to issues with road authorities and delay in awarding of work.

For Chokli-Peringathur town, out of 2.02 km UG Cable sanctioned, 1.95 km work is completed. The Cable laying work in respect of the remaining stretch could not be started due to the delay in getting sanction from the railway authorities in the matter of line crossing.

780Km 11kV UG cable work has been completed out of 850km targeted.

The works for High Voltage Distribution System (HVDS) works were proposed only in Kannur and Thaliparamba schemes for drawing UG Cable/ABC conductor and installing Distribution Transformers in industrial areas. But at the time of execution of the scheme it was found that transformers were installed for the consumers on OYEC/MG basis due to urgency. Hence no further scope for HVDS system was there and alternative loss reduction works were executed to achieve the target.

Table 2.42

Item	Approved quantity	Executed Quantity
Capacitor Bank	6293	1184
Remote Communicable Fault Passage Indicator	274	0
Remote switchable breakers	955	411
Sectionalisers	471	25
RMU	2340	1403
AB Switch	205	231

The required quantities of the above items were installed for achieving the objective of the scheme and the alternative works were executed to achieve the target.

roads/NHAI, etc. As the work has now been decided to be executed on turnkey basis, centralised purchase of UG cable was not relevant for the case.

The fact, however, remains that Part B projects were sanctioned from June 2010 onwards, and it took four years to decide on executing the work on turnkey basis.

As per the guidelines, High Voltage Distribution System (HVDS) was to be implemented in theft prone areas by improving HT:LT ratio. The DPR of approved Part B project included HVDS work of laying eight km OH line, three km UG cable, one km PVC cable and installation of 51 transformers at sanctioned project cost of ₹2.50 crore.

HVDS work was yet to commence due to non-procurement of material. This resulted in non-achievement of objective of bringing down AT & Closs.

GoK replied (January 2016) that all the essential works under the HVDS category were expected to be completed well within the extended period of RAPDRP.

In order to improve power factor and to strengthen distribution network, approved 43 Part B projects targeted to install the following:

Table 2.42: Details of work proposed

Item	Approved quantity (Number)
Installation of capacitors bank	6293
Installation of remote communicable Fault Passage Indicator	274
Installation of remote switchable breakers	955
Installation of sectionalisers	471
RMU installation	2340
Providing AB switches	205

CE (SCM) responsible for procurement of above material did not procure the above material and as a result envisaged distribution strengthening work was yet to commence in all 43 projects.

Recommendation No.4: Funding arrangements should be

Action taken : For new Centrally Aided Projects DDUGJY & IPDS, 10 % of the total fund is Discom contribution and 30 % is loan component from financial institution and 60 % is grant from Govt. Additional Grant from Government of India on achievement of prescribed milestones is 15 % of total fund. So Maximum Grant by Government of India (including additional grant on achievement of prescribed milestones) is 75 % of total fund. KSEBL has already

<p>firming up upfront, as envisaged in scheme guidelines, in order to avoid delay in procurement and consequent delay in execution of work. Deviation from approved DPR</p>	<p>started preliminary arrangements to seek loan to complete the project in time.</p>
<p>2.3.28 DPRs of 43 Part B projects of RAPDRP were approved by GoI after taking into consideration Internal Rate of Return (IRR) of 10 per cent and reduction of AT & C loss from above 20 per cent to 15 per cent.</p> <p>Audit scrutiny of 25 Part B projects revealed that there was deviation from the approved DPR like change of location, quantity variation, inclusion of new location in bid document, etc., as evident from a few instances cited in Appendix 6. Due to deviation from approved DPR, excess expenditure of ₹109.21 crore has to be borne by KSEBI. If the revised DPR is not approved by PFC, GoK replied (January 2016) that excess amount above the DPR would be borne by KSEBL. The reply was not acceptable as deviation from the DPR resulted in loss of grant to the tune of 50 per cent of excess expenditure.</p>	<p>Distribution network is dynamic in nature, certain variations in scope and quantity is inevitable during award and implementation stages due to site condition, load growth, court case, public opposition, right of way, land availability issues, time lag between sanction and actual execution at site etc. Utilities requested to permit changes in BoQ due to the above reasons and monitoring committee in its 7th meeting held on 28 April 2016. Monitoring committee also permitted the increase in unit price of awarded item over DPR rate, provided it is certified by the Head of Utility that the price has been determined in a transparent manner as per prevailing practice of Utility.</p> <p>In Varkala town, 11kV reconductoring for 5 Km was targeted and 9.2 km was achieved, 46 km for new 11 kV line was targeted and 33km was achieved. 10km LT reconductoring was targeted and 10km achieved. In Attingal town 49.58 11kV new feeder was targeted and 53.8 achieved. In Neyyattinkara town 24 km of 11kV reconductoring was achieved out of 24km planned.</p> <p>Appendix-6</p> <ol style="list-style-type: none"> 1. Thiruvananthapuram City Scheme: Road restoration charges to be remitted depend on the road Authority concerned. During the formulation of the scheme, based on the then prevailing rate a provision was made for road restoration charges. Also the cable route change was necessitated at some locations at the time of execution according to the site requirements. Similarly the technology could also be changed based on the site condition during execution period. 2. Kozhikode City Scheme: As explained above, Road restoration charges depend on the road Authority concerned. Only anticipated provision was made for Road Restoration, PTCC and Tree cutting during project formulation. There were many other works to be proposed for achieving the target. <p>The schemes were prepared based on IRR. Hence for limiting the cost according to IRR, 33 kV cable laying work from Ramanattukara to new 33/11 kV substations at Feroke was not included in the scheme. Now the substation and 33 kV feeders are completed and charged.</p> <ol style="list-style-type: none"> 3. Kochi city scheme: As explained above Road restoration charges depend on the road Authority concerned. Only anticipated provision was made for Road Restoration, PTCC Tree cutting during project

		<p>formulation. There were many other works to be proposed for achieving the target.</p> <p>4. Malappuram Town Scheme</p> <p>As per the Guidelines of the scheme, installation of RMUs are permitted only in SCADA Towns. Even though KSEBL had proposed RMU installation in Malappuram Town scheme, PFC did not sanction it. RMU installation work was executed for 11 KV UG Cable laid under APDRP. Since sanction for the work was not obtained, it was dropped. But all the works required for loss reduction was executed.</p> <p>For RAPDRP, Government of India approved BOQ variation for all States including Kerala. Time extension is approved with extension in sunset time up to 2022. So there is no question of grant loss.</p>
2.3.29	<p>Delay in completion of SCADA project</p> <p>SCADA project was approved (February 2011 and June 2011) for three eligible towns in Kerala at project cost of ₹83.15 crore. SCADA project was to be completed within three years of sanction. Completion of SCADA project in these three towns was dependent on completion of Part B projects in the towns. Works like compatibility of circuit breaker and switches, remote operable motors for SCADA compatibility in existing Ring Main Units (RMUs), placement of RMUs and Fault Passage Indicator (FPIs), etc., under Part B were to be completed for the successful and timely completion of SCADA projects. Non-commencement of SCADA compatible work under Part B had adversely affected the completion of SCADA project as discussed below:</p> <ul style="list-style-type: none"> • Works under SCADA were awarded (May 2013) to turnkey contractors with completion time of 18 months (November 2014), while Part B projects in these towns were awarded (July 2013-April 2014) on turnkey basis with completion time of 20 months. Scrutiny of records revealed that none of the SCADA project could be completed as of September 2015 due to delay in completion of Part B projects in these towns. As per the DPRs of Thiruvananthapuram, Emakulam and Kozhikode city Part B projects, RMUs to be made SCADA compatible were 329, 320 and 155 respectively. However, the work was yet (August 2015) to commence in these towns. • No prioritisation was done to execute these city schemes in sync with the progress of SCADA project. DPR for Thiruvananthapuram city project was approved in August 2012 but there was delay of 20 months in award of Thiruvananthapuram city project 	<p>PFC has extended the date of completion of Part B projects upto 31 March 2018. Now Part B Works are completed. The reason for delay in awarding the work under Part (B) City scheme is already explained.</p> <p>All these extensions are given by Ministry of Power by considering the constraints in the field and problems faced during execution of the work.</p> <p>The overall time of completion of the SCADA/DMS project granted by PFC was 5 years from the date of approval of DPR.</p> <p>It is also pertinent to note that the time line for completion of the projects under Part -B was also extended by the PFC for the reasons mentioned above and those specifically related to the part-B projects.</p> <p>During the course of the SCADA/DMS project, the above hurdles were able to overcome with proper co ordination and the project has achieved major milestones as shown below.</p> <ul style="list-style-type: none"> • All three control-centres up and Running. • More than 90% RTU stations are up. • Design of all Sub Systems are complete. • Factory Acceptance Test (FAT) for all the Sub Systems was successfully completed. • As all the networks linking the Field devices are scheduled to be established within a span of 2 months, as per the revised schedule of the SCADA/DMS project, the control rooms in all the three cities shall be made operational within the time line allotted by the PFC. • The implementation activities in the field, which depend on the Part B progress also, could be carried out to complete the project as envisaged in the RFP within the time line allotted (As the part B works are also scheduled to be

	<p>work. In respect of Emakulam and Kozhikode Part B projects also, delay in award of work after approval by PFC was 32 months and 29 months respectively.</p> <ul style="list-style-type: none"> Kalki Communication Technologies Limited (Kalkitech), Bangalore was appointed as SCADA consultant (SDC) in the three cities of Thiruvananthapuram, Emakulam and Kozhikode for a period of four years at a lump sum price of ₹49.95 lakh. The period of contract of the SDC expired in April 2014 but due to non-completion of SCADA project, the contract of SDC was extended for one more year at an additional expenditure of ₹24 lakh per year. <p>The CEs (Distribution) of the project area concerned were responsible for awarding and execution of three turnkey Part B projects. Delay in completing SCADA project within the stipulated time would result in loss of grant of ₹52 crore (awarded cost), since PFC had not extended original completion time of three years.</p> <p>GoK replied (January 2016) that the scheduled completion date of SCADA and Part B projects was June 2016 and February 2017 respectively.</p> <p>The reply was not acceptable as extension of SCADA consultant was due to the extension of original contract.</p>	<p>completed within the timelines</p> <ul style="list-style-type: none"> It is presumed that the entire SCADA/DMS system shall be made operational within the time line allotted by the PFC, The R-APDRP SCADA/DMS project from concept to commission was conceived by the PFC with the help of a PFC empanelled Consultant (M/s. Kalki communications Pvt. Ltd. as SDC in our project). As per the RFP for the project, the SDC has to hand hold with utility till completion of the project including Third Party Independent Evaluation(TPIEA) and handing over in order to ensure the completion of the project, meeting the objectives as envisaged in the RFP. Since the services of SDC being essential and the project has already been extended with the approval of PFC, the expenditure incurred on account of maintaining their services can only be considered as genuine. In this context, it was made clear by the PFC that charges towards consultant for the extended period will have to be borne by the utilities concerned. As the PFC has extended the time line for completion of the project the project is expected to be completed with the present schedule & progress within the timeline allotted by the PFC, there is no room for concern regarding the loss of amount of grant given by the PFC as of today.
2.3.30	<p>Loss of envisaged benefit due to delay in completion</p> <p>According to DPR of 43 Part B projects, energy saving in the range of 1.11 MUs to 80.92 MUs, totalling 506.74 MUs annually was envisaged on completion of these projects. Further, the conversion of loan ₹836.68 crore sanctioned by GoI into grant was contingent on timely completion of Part A and B projects. Therefore, proper monitoring of implementation of projects was of paramount importance.</p> <p>As per the guidelines issued by GoI (MoP) and terms of MoA, a Distribution Reforms Committee (DRC) was to be constituted under RAPDRP at the State level under the Chairmanship of the Chief Secretary /Principal Secretary/ Secretary Power/Energy. In the State, DRC constituted under APDRP scheme was allowed to continue to monitor the RAPDRP also. The DRC was to: a) recommend the Project proposals to the MoP after ensuring that all the required formalities have been complied with;</p> <p>b) monitor the compliance to conditionalities; and</p> <p>c) monitor the achievement of milestones and targets under</p>	<p>DRC meeting were convened frequently for taking decision on completion of the schemes and sanction was granted for the submission of closure proposal. KSEBL has completed the RAPDRP within the time frame set by the Monitoring Committee of GOI for the said scheme.</p> <p>The scope of the DRC set up for implementing the APDRP schemes was extended to include RAPDRP scheme also. One of the pre-requisites for sanctioning the scheme under RAPDRP was the recommendation/ approval from the DRC. All the schemes were recommended by the DRC. Monitoring by the CMD could be considered as Govt level monitoring by virtue of his position as Secretary, Power, Government of Kerala. Accordingly, issues were reported to PFC and proper directions were obtained. Also the monitoring of the schemes were done at various levels ie. by the CMD, KSEBL, Director (Distribution & Safety), Chief Engineers and Deputy Chief Engineers in addition to the monthly review meeting (RPM) by the MoP. Also a wing was formed for monitoring the progress of RAPDRP scheme headed by Chief Engineer (Centrally</p>

<p>the scheme.</p> <p>DRC, mandated to monitor progress of implementation of RAPDRP, held three meetings after sanction of the RAPDRP projects but did not discuss progress of implementation of RAPDRP at all.</p> <p>As a result, Part A and Part B projects which were originally scheduled for completion within three years could not be completed even within the extended time of five years. Delay in completion of projects led to annual loss of envisaged benefit of ₹202.70102 crore on 506.74 MUs of energy (Appendix 7) and probable non-conversion of loan of ₹836.68 crore into grant. Thus, DRC had failed in performing its duties. KSEBL replied (November 2015) that the members of the DRC were high level officers in Government and availability of their time for close monitoring of the schemes was difficult. Monitoring by the CMD can be considered as Government level monitoring by virtue of his position as Secretary, Power Department.</p> <p>The reply was not acceptable as the DRC consisted of representatives of PFC, MoP, CEA, ANERT and Energy Management Centre besides Power Secretary and four representatives from KSEBL.</p> <p>Conclusion</p> <p>The main objective of Restructured Accelerated Power Development and Reforms Programme was to bring down Aggregate Technical & Commercial loss to 15 per cent. But there was no realistic approach in the preparation of Detailed Project Report to guard against technology related compatibility issues at the implementation stage. Action taken in the policy initiative like measures for prevention of theft of power, constitution of Special Courts to deal with cases of theft of power, etc., were inadequate. Delay in preparation of DPRs and arrangement of funds led to delay in procurement of material and awarding of contracts. This has also resulted in time overrun of more than three years and cost overrun, which contributed to the non-materialisation of envisaged benefit of reduction in Aggregate Technical & Commercial loss.</p>	<p>Aided Projects). All the schemes are almost complete and no laxity is there on the part of KSEBL or Govt in execution of the project. The figures given in Appendix 7 are only assumptions and calculations based on it. Such calculations cannot be considered while executing large projects like this.</p>
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Appendix 5
Statement showing faulty preparation of DPR

(Referred to in Paragraph 2.3.9)

Name of Project	Item of work as per DPR	Remarks
Varkala town scheme	DPR proposed 5 km HT line and 10 km LT line reconductoring under Varkala Section	On implementation these were fragmented among three sections of Varkala, Edava and Kedamkulam on the direction of Executive Engineer
	HT line - 1.5 km in Edava and 2.40 km in Kedamkulam	Actual - HT line - 1.2 km in Edava and 2.00 km in Kedamkulam. Change was made at the behest of Executive Engineer.
Attingal town scheme	11 kV New feeder from CM 22 to CM not included in DPR	11 KV New feeder from CM 22 to CM 55- 1 km was carried out as this was omitted from DPR due to improper field study by Executive Engineer.
	11 kV New feeder from C 53 to C 53/12 (Vilayil moola)	These were not required on actual execution. Inclusion in DPR was improper field survey carried out by Executive Engineer
	11 kV new feeder from Palam konam palli(KDR 64)-KDR 64/ branch	
	11 kV Line : Reconductoring/Augmentation- Kallambalam 11kV feeder (ATL section) -2.5 km	4 km reconductoring was done as required on actual execution of the work. The change from DPR was due to improper field survey at the time of preparation of DPR.
Neyyattinkara town scheme	11 kV Line reconductoring not included in DPR	1 km 11 kV Line reconductoring was executed as demanded by site conditions. Deviation from DPR was due to improper field survey at the time of preparation of DPR
	11 kV Line : Reconductoring not included in DPR	11 kV Line : Reconductoring/ OH with OH - Marayamuttom ES- 4 km
Thaliparamba town scheme	Construction of 8 kms 11 kV UG cable work	The route was deviated due to objection from PWD and also OH interlinking line drawn in the proposed area, hence the length has been reduced to 5.448 km
	HT reconductoring work- target as per DPR was 23 km	HT reconductoring work for 23 km in the DPR included 14 kms of line where reconductoring was already done. Hence, reconductoring was reduced to 9 km from 23 km envisaged in the DPR.
	Conversion single phase to three phase- target as per DPR was 78.24 km but revised to 36 km.	Conversion was originally proposed for the whole area of the section, now the target area revised with proposals within the scheme area.
	HVDS- target as per DPR was 14 km but revised to 0 km.	No specific reasons given by Executive Engineer (EE) / Assistant Engineer (AE) of the project area concerned.

Appendix 6

Statement showing deviation from approved DPR

(Referred to in Paragraph 2.3.28)

Name of Project	Item of work as per DPR	Remarks
Thiruvananthapuram city scheme	Road restoration charge of ₹6 crore only	Road restoration charge revised to ₹32.96 crore due to adoption of technology. Deputy CE suggested the revision.
Kozhikode city scheme	Provision for Road cutting, PTCC, tree cutting and railway crossing of ₹6.13 crore only	The anticipated expenditure is ₹10.06 crore. Defective planning of expenditure in the DPR stage resulted in less provision in the DPR to be met out of own resources.
	The construction cost of 33/11 kV substation was only included in the DPR and the feeding arrangement to the proposed Substation was completely omitted -	Feeding arrangement at a cost of ₹4.11 crore was not included in the approved DPR
Ernakulam-Kochi city scheme	Provision for Road cutting, PTCC, tree cutting and railway crossing of ₹11.76 crore only	The amount of expenditure anticipated is ₹85.50 crore. Less provision was due to lack of planning in the DPR stage. CE suggested for revision and decided to met the excess expenditure from own budget.
Manjeri town scheme	Installation of 10 RMUs was taken up which was not included in the sanctioned DPR	Estimate sanction accorded by the EE during March 2015 for ₹0.47crore. The work now included for effective utilization of UG cable work.

Appendix 7

Statement showing envisaged benefit on completion of the project

(Referred to in Paragraph 2-3-30)

Sl. No.	Name of Town/project	Date of Sanction	Date of completion (5 years from date of sanction)	Extension granted by PFC beyond 5 years	Envisaged annual benefit on completion of the project within 3 years (MU)	Month beyond 5 years up to September 2015	Envisaged loss beyond 5 years in MU
1	Alappuzha	02/06/2010	01/06/2015	30/06/2016	19.33	4	6.44
2	Aroor	02/06/2010	01/06/2015	30/06/2016	12.74	4	4.25
3	Attingal	16/08/2010	15/08/2015	31/08/2016	5.05	1.5	0.63
4	Chalakyudy	16/08/2010	15/08/2015	31/08/2016	3.43	1.5	0.43
5	Changanacherry	16/08/2010	15/08/2015	31/08/2016	4.65	1.5	0.58
6	Cherthala	16/08/2010	15/08/2015	31/08/2016	19.39	1.5	2.42
7	Chitnur	02/06/2010	01/06/2015	30/06/2016	5.73	4	1.91
8	Chokli-Peringathur	02/06/2010	01/06/2015	31/12/2016	5.72	4	1.91
9	Guruvayur	16/08/2010	15/08/2015	31/08/2016	4.22	1.5	0.53
10	Kanhangad	16/08/2010	15/08/2015	31/08/2016	5.83	1.5	0.73
11	Kannur	16/08/2010	15/08/2015	31/08/2016	31.82	1.5	3.98
12	Kasaragod	16/08/2010	15/08/2015	31/08/2016	6.51	1.5	0.81
13	Kayamkulam	02/06/2010	01/06/2015	30/06/2016	4.45	4	1.49
14	Kodungallur	08/12/2010	07/12/2015	31/12/2016	7.67	0	0.00
15	Kollam	16/08/2010	15/08/2015	31/08/2016	15.98	1.5	2.00
16	Kotharakulam	16/08/2010	15/08/2015	31/08/2016	5.16	1.5	0.65
17	Kottayam	08/12/2010	07/12/2015	31/12/2016	20.11	0	0.00
18	Koyilandy	16/08/2010	15/08/2015	31/08/2016	5.75	1.5	0.72
19	Kunnamkulam	02/06/2010	01/06/2015	30/06/2016	4.70	4	1.57
20	Malappuram	02/06/2010	01/06/2015	30/06/2016	3.16	4	1.05
21	Mattannur	16/08/2010	15/08/2015	31/08/2016	4.89	1.5	0.61
22	Nedumangad	16/08/2010	15/08/2015	31/08/2016	3.06	1.5	0.38
23	Neyyattinkara	02/06/2010	01/06/2015	30/06/2016	2.79	4	0.93
24	Ottappalam	08/12/2010	07/12/2015	31/12/2016	1.98	0	0.00
25	Palakkad	08/12/2010	07/12/2015	31/12/2016	20.10	0	0.00
26	Pappinissery	16/08/2010	15/08/2015	31/08/2016	2.34	1.5	0.29
27	Paravur	16/08/2010	15/08/2015	31/08/2016	3.04	1.5	0.38
28	Pathanamthitta	16/08/2010	15/08/2015	31/08/2016	1.11	1.5	0.14
29	Payyanur	02/06/2010	01/06/2015	30/06/2016	3.89	4	1.30
30	Perinthalmanna	16/08/2010	15/08/2015	31/08/2016	2.10	1.5	0.27
31	Ponnani	16/08/2010	15/08/2015	31/08/2016	2.12	1.5	0.27
32	Punalur	02/06/2010	1/06/2015	30/06/2016	2.85	4	0.95
33	Shornur	08/12/2010	07/12/2015	31/12/2016	2.76	0	0.00

Sl. No.	Name of Town/project	Date of Sanction	Date of completion (5 years from date of sanction)	Extension granted by PFC beyond 5 years	Envisaged annual benefit on completion of the project within 3 years (MU)	Month beyond 5 years up to September 2015	Envisaged loss beyond 5 years in MU
34	Thaliparamba	03/12/2010	07/12/2015	31/12/2016	4.24	0	0.00
35	Thiruvalla	16/08/2010	15/08/2015	31/08/2016	8.71	1.5	1.09
36	Thodupuzha	16/08/2010	15/08/2015	31/08/2016	4.96	1.5	0.62
37	Thrissur	03/12/2010	07/12/2015	31/12/2016	16.53	0	0.00
38	Tirur	02/06/2010	01/06/2015	30/06/2016	5.41	4	1.81
39	Vadakara	03/12/2010	07/12/2015	31/12/2016	7.60	0	0.00
40	Varkala	15/08/2010	15/08/2015	31/08/2016	1.54	1.5	0.19
A				Total	293.51	75.5	41.31
41	Ernakulam-Kochi	22/02/2011	21/02/2016	28/02/2017	80.92	0	
42	Kozhikode	22/02/2011	21/02/2016	28/02/2017	67.86	0	
43	Thiruvananthapuram	03/08/2012	31/03/2017	Nil	64.45	0	
B				Total	213.23	0	
Grand Total: (A+B)					506.74		

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