

**Report of the
Comptroller and Auditor General of India
on
Implementation of
Integrated Power Development Scheme
(IPDS)**

**Government of Karnataka
Report No. 9 of the year 2025
Performance Audit - Commercial**

Table of contents

Paragraph No.	Contents	Page Number
	Preface	v
	Overview	vii
Chapter – I		
Introduction		
1.1	Integrated Power Development Scheme (IPDS)	1
1.2	Funding for the scheme	2
1.3	Organisation setup	2
1.4	Audit objectives	3
1.5	Audit criteria	3
1.6	Audit scope and methodology	4
1.7	Audit findings	5
1.8	Acknowledgement	5
Chapter – II		
Financial Management		
2.1	Introduction	7
2.2	Financial break-up of the Scheme	7
2.3	Funding Pattern	8
2.4	Issues pertaining to loans	9
2.5	Issues pertaining to Grants	11
2.6	Delay in receipt of final tranche of grant	14
2.7	Additional Grant foregone	15
2.8	Issues relating to Financial Prudence	18
Chapter – III		
Planning and Implementation of the Scheme		
3.1	Introduction	21
3.2	Mode of Implementation of the Scheme	23
3.3	System Strengthening	23
3.4	Status of System Strengthening works under the Scheme	28
3.5	Award of contracts in violation of KTPP Act and Rules	31
3.6	Installation of GIS station	33

Paragraph No.	Contents		Page Number
3.7	Disconnected UG cables		34
3.8	Metering		34
3.9	Solar Component		36
3.10	IT applications and Enterprise Resource Planning under IPDS		41
3.11	IT Phase- II		43
3.12	Deficiencies in Quality Assurance Mechanism		49
Chapter – IV			
Monitoring			
4.1	Monitoring		51
4.2	Monitoring agencies at State level		51
4.3	Functioning of State Level Distribution Reforms Committee		52
4.4	Functioning of DISHA		53
4.5	Functioning of Project Management Agency		54
Appendices			
No.	Contents	Paragraph	Page Number
1	List of Divisions Selected for detailed Audit and physical verification of IPDS assets	1.6	57
2	Details of loan released, rate of interest and interest reset by REC (₹ in crore) Para No.	2.4.1	58
3	Details of ESCOM wise, component wise delay in Implementation	3.3.2 and 4.3	59
4	Details of tenders and DWAs issued by ESCOMs under IPDS	3.3.3	62
5	Details of work orders issued after the scheduled completion date i.e., 31 st March 2019	3.3.4	66
6	Statement showing percentage of achievement against sanctioned quantity in system strengthening works consolidated for ESCOMs	3.4 and 3.4.1	69
7	Instances of dropping of planned works	3.4.2 and 4.3	70
8	Details of tender premium paid on award of system strengthening works in ESCOMs	3.5.2	71

Paragraph No.	Contents		Page Number
No.	Contents	Paragraph	Page Number
9	Details of discrepancies noticed in GESCOM and HESCOM	3.9.4	74
10	Details of non-compliance of Standard Bid Documents parameters	3.9.5	75
11	Details of Scope of work and non-performance thereon by M/s. RECPDCL	4.5	77

Preface

1. This Report of the Comptroller and Auditor General of India has been prepared for submission to the Government for laying before the State Legislature of Karnataka under the provisions of Section 19A of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971.
2. The Report contains the results of Performance Audit on Implementation of Integrated Power Development Scheme (IPDS) in the State of Karnataka, covering the period 2014-15 to 2022-23.
3. The audit was conducted in conformity with the Auditing Standards issued by the Comptroller and Auditor General of India.

Overview

Overview

Why did we choose this topic?

Ministry of Power (MoP), Government of India (GoI) launched (December 2014) Integrated Power Development Scheme (IPDS) for strengthening of sub transmission and distribution networks in urban areas including provision of Solar panels, metering of distribution transformers/feeders/consumers in urban areas and IT enablement of distribution sector and strengthening of distribution network for completion of targets laid down under *erstwhile* Re-structured Accelerated Power Development and Reforms Programme (RAPDRP) by carrying forward the approved outlay for RAPDRP to IPDS.

The scope of work covered creation of new substations along with associated 66kV/33kV/11kV lines, augmentation of existing substations, erection of High-Tension lines including re-orientation/ re-alignment/ augmentation of existing lines, installation of new/ augmentation of existing transformers, Aerial Bunched Cable for high theft prone areas and installation of suitable static meters for distribution transformers and all types of consumers. The IT enablement component envisaged implementation of Enterprise Resource Planning (ERP) and allowed expenses for scaling up the IT resources of RAPDRP part-A towns to those newly added under IPDS. The Scheme envisaged Power Finance Corporation (PFC) as the Nodal Agency for its operationalisation. All the five ESCOMS in the State implemented the Scheme.

The IPDS scheme guidelines stipulated funding 60 *per cent* of DPR cost through capital grant from GoI, 30 *per cent* from loans from financial institutions and remaining 10 *per cent* from own funds. An additional grant of 50 *per cent* of loan (*i.e.* 15 *per cent* of DPR cost) was also receivable on achievement of prescribed milestones such as timely completion of the scheme, reduction in AT&C losses as per the trajectory fixed under the Scheme and upfront release of admissible revenue subsidy by State Government based on metered consumption. Further, ESCOMs were eligible for a grant of up to 0.50 *per cent* of approved project cost towards Project Management Agency (PMA) cost.

A Performance Audit was conducted to assess if the Components of the scheme were planned effectively as per the guidelines, Implementation and execution of works were economical, effective and timely. Also Audit assessed if the financial management of the scheme was done economically and if the scheme was monitored effectively, in order to achieve its objectives.

The Performance Audit was conducted in all the five ESCOMs of Karnataka, *viz.* Bangalore Electricity Supply Company Limited (BESCOM), Chamundeshwari Electricity Supply Corporation (CESC), Gulbarga Electricity Supply Company Limited (GESCOM), Hubli Electricity Supply Company Limited (HESCOM) and Mangalore Electricity Supply Company Limited (MESCOM), covering the transactions relating to IPDS from 2014-15 to 2022-23. The Government of Karnataka accepted all the Audit recommendations and assured that necessary action would be taken, wherever required.

What we found and recommend?**FINANCIAL MANAGEMENT**

Approved project cost (including PMA charges of ₹ 6.87 crore) of the IPDS was ₹ 1,378.44 crore and awarded cost was ₹ 1,721.19 crore. Against this, ESCOMs incurred actual expenditure of ₹ 1,489.33 crore (as on 31 March 2023), *i.e.* ESCOMs incurred excess expenditure of ₹ 110.89 crore than the sanctioned cost in implementing the Scheme. This includes additional expenditure to the extent of ₹ 38.52 crore due to non-procurement of materials at *Central Procurement Prices* discovered by MoP. Delay in submission of documents resulted in incurring additional interest burden on borrowed funds to the extent of ₹ 5.45 crore. Delay in finalising tender by KPTCL for feeder metering work, inability to tender and award the work of DTC metering and non-completion of Solar component in BESCOM resulted in foregoing of grant amounting to ₹ 12.80 crore by BESCOM and MESCOM. Besides, non-compliance to various requirements for securing additional grants resulted in loss of opportunity to receive additional grant of 15 *per cent* of project cost.

The audit acknowledges that the billing efficiency of ESCOMs - measured as the ratio of net energy sold to net input energy - generally improved during the scheme period, contributing to a reduction in billing losses. However, the reduction of AT&C losses did not meet the trajectory finalised by Ministry of Power. ***Audit recommends that Government of Karnataka may ensure that ESCOMs reduce AT&C losses as per the trajectory fixed by the MoP for IPDS. It may also ensure timely release of subsidy for irrigation pump sets as per metered consumption.***

(Chapter - II)

PLANNING AND IMPLEMENTATION OF THE SCHEME

The Scope of works under IPDS scheme included the following components: (i) strengthening of sub-transmission & distribution network, (ii) metering of feeders /distribution transformers/consumers, *etc.* (iii) IT enablement of distribution sector, (iv) provisioning of Solar panels on Government buildings with net-metering, *etc.*

In August 2015, in-principle approval to DPRs of all five ESCOMS, valued at ₹ 1,138.75 crore was accorded for implementation of IPDS in the State. Nodal agency, Power Finance Corporation (PFC) took seven months for communicating (March 2016) the approval. As per the Scheme guidelines, works were to be awarded within six months from the communication of approval, *i.e.* by September 2016 and were to be completed within 24 months from award, *i.e.* by September 2018. However, ESCOMs took 11 to 27 months to award works as against the stipulated six months. Thereby, the works which should have been completed by September 2018 were completed only in December 2019. The major reason for delay in awarding/ completion of the

work was, delay (12 months) in finalisation of mode of implementation of the project *i.e.*, partial turnkey/total turnkey by PFC.

Significant variations from planned works were observed in execution of system strengthening works. ESCOMs did not include certain quantities in the DPRs or included quantities which were not required therein, necessitating change in scope of works during execution. Fourteen work orders under system strengthening component in selected divisions of BESCOM (₹ 13.90 crore) and MESCOM (₹ 10.69 crore) were dropped after awarding, citing reasons such as non-receipt of essential permissions, right of way issues and coverage of works under other schemes.

Audit found that the percentage of execution against the sanctioned quantity in the components of system strengthening works ranged from zero *per cent* to 4,890 *per cent* (Ring Main Units -RMU). ESCOMs awarded contracts in violation of KTPP Act and Rules by providing less time for submission of tenders, ranging from 15 to 54 days against the stipulated minimum time of 60 days, and by awarding works at high tender premiums, exceeding the estimated cost by 5 to 34 *per cent*. There was delay in completion of the work and non-achievement of the objective as envisaged, even after more than three years of issue of Detailed Work Award. Non-completion of DC/DRC work within time resulted in additional expenditure on co-hosting charges and non-utilising of GIS data procured by ESCOMs. BESCOM was unable to achieve the implementation of an ERP system for its back-office operations for scalable and standardised business processes across the Company, despite spending ₹ 42.04 crore.

Automated Meter Reading was not completely done in five out of eight selected Divisions of BESCOM, even after installation of static meters and GPRS modems. ESCOMs issued DWAs without proper planning and identification of buildings for installation of Solar power plants resulting in delay in execution and non-fulfilment of objectives. ESCOMs did not prepare comprehensive Quality Assurance plan and could not ensure prescribed quality of materials. Non-conducting of mandatory inspections resulted in poor quality materials being used in Solar project of CESC and consequent low energy generation by the Solar panels. Non-maintenance of Solar panels also resulted in poor performance. ***Audit recommends that Government of Karnataka may ensure that ESCOMs may devise a suitable mechanism to issue tenders in time, to take up works without delay and to ensure completion of works in time to achieve envisaged objectives. Further, ESCOMs may follow time frames as per KTPP Act, 1999 and Rules, 2000 to ensure adequate competition and to allow market discovery for most economical rates. The ESCOMs may ensure that comprehensive feasibility surveys are conducted before project execution and may include conditions of standard bid documents in invitation to bids and ensure adherence to the same while executing works.***

(Chapter - III)

MONITORING

Works delayed on account of various bottlenecks were not brought to the notice of State Level Distribution Reforms Committee (SLDRC) for their early resolution. Even though guidelines for State Level District Development Coordination and Monitoring Committee (DISHA) were issued in June 2018, the Committee was constituted only in January 2020. As per the guidelines, DISHA was to meet every quarter at district level and at least once in six months at State level. IPDS was one of the schemes to be discussed in State level as well as District level DISHA committees. However, the first meeting was held only in August 2022, after completion and closure of IPDS Scheme. Thereby, formation of State level DISHA had no bearing on implementation of IPDS.

(Chapter-IV)

Chapter I

Introduction

Chapter I

Introduction

1.1 Integrated Power Development Scheme (IPDS)

Ministry of Power (MoP), Government of India (GoI) launched (December 2014) Integrated Power Development Scheme (IPDS) for strengthening of sub transmission and distribution networks in urban areas including provision of Solar panels, metering of distribution transformers/feeders/consumers in urban areas¹ and IT enablement of distribution sector and strengthening of distribution network for completion of targets laid down under *erstwhile* Re-structured Accelerated Power Development and Reforms Programme (RAPDRP) by carrying forward the approved outlay for RAPDRP to IPDS.

The scope of work covered creation of new substations along with associated 66kV/33kV/11kV lines, augmentation of existing substations, erection of High-Tension lines including re-orientation/ re-alignment/ augmentation of existing lines, installation of new/ augmentation of existing transformers, drawing Aerial Bunched Cable for high theft prone areas and installation of suitable static meters for distribution transformers and all types of consumers. The IT enablement component envisaged implementation of Enterprise Resource Planning (ERP) and allowed expenses for scaling up the IT resources of RAPDRP part A towns to those newly added under IPDS. The Scheme envisaged Power Finance Corporation (PFC) as the Nodal Agency for operationalisation. All the five ESCOMS² in the State of Karnataka implemented the Scheme.

The Scheme guidelines prescribed implementation of the Scheme under total turnkey basis and allowed partial turnkey/departmental implementation in exceptional circumstances, with the approval of the Monitoring Committee.

The Scheme envisaged constitution of a Monitoring Committee under the chairmanship of Secretary (Power), GoI with representatives from Ministry of Power, Ministry of Finance, Ministry of Urban Development, Ministry of Housing and Urban Poverty Alleviation, Ministry of New and Renewable Energy, Central Electricity Authority and Planning Commission. This Committee was empowered to approve the operational guidelines prepared by the Nodal Agency and monitor the implementation of the Scheme. Tripartite agreements for implementation of the scheme were executed between

¹ Towns with population from 15,000 to 5,000 as per census 2011.

² Bengaluru Electricity Supply Company Limited (BESCOM), Chamundeshwari Electricity Supply Corporation Limited (CESC), Mangalore Electricity Supply Company Limited (MESCOM), Gulbarga Electricity Supply Company Limited (GESCOM) and Hubli Electricity Supply Company Limited (HESCOM).

Government of Karnataka (GoK), PFC (on behalf of GoI) and ESCOMs between October 2015 and February 2016³. The Scheme was closed in 2019⁴.

1.2 Funding for the scheme:

The IPDS scheme guidelines stipulated funding 60 *per cent* of DPR cost through capital grant from GoI, 30 *per cent* from loans from financial institutions and remaining 10 *per cent* from own funds. An additional grant of 50 *per cent* of loan (*i.e.* 15 *per cent* of DPR cost) was also receivable on achievement of prescribed milestones such as timely completion of the scheme, reduction in AT&C losses as per the trajectory and upfront release of admissible revenue subsidy by State Government based on metered consumption. Further, ESCOMs were eligible for a grant of up to 0.50 *per cent* of approved project cost towards Project Management Agency (PMA) cost.

The ESCOM-wise project cost, grant received, loan obtained and own fund spent towards implementation of IPDS is tabulated below:

Table No. 1.1: Statement showing ESCOM wise project cost, grant received, loan obtained and implementation cost

(₹ in crore)						
Sl. No.	ESCOM	Sanctioned Project cost	Implemented cost of project	Grant received	Loan obtained	Own fund spent
1	BESCOM	544.85	591.39	303.25	209.29	78.85
2	CESC	190.24	188.47	112.49	61.39	14.59
3	MESCOM	212.89	242.50	126.74	63.12	52.64
4	GESCOM	190.63	196.74	113.23	73.37	10.14
5	HESCOM	239.83	270.11	141.54	50.50	78.07
	Total	1,378.44	1,489.21	797.25	457.67	234.29

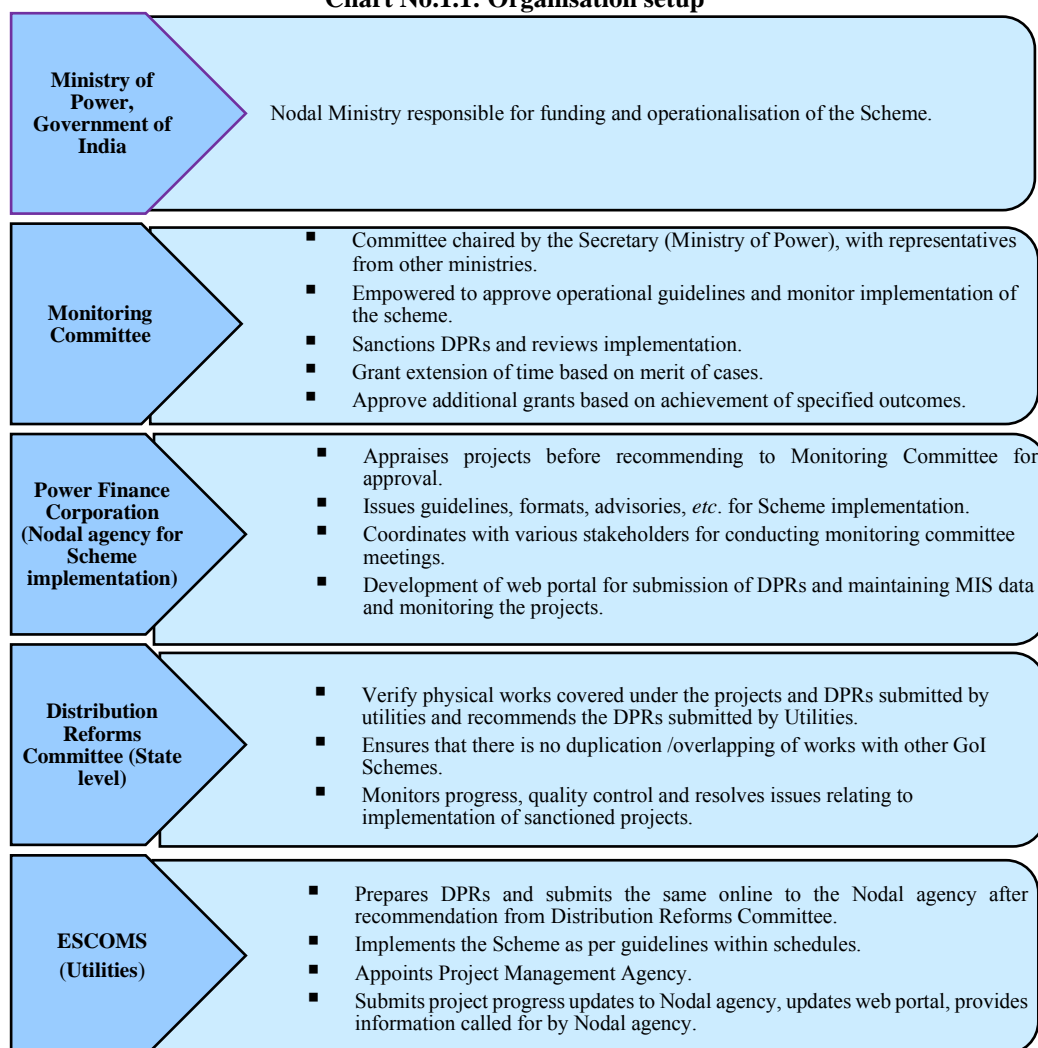
Source: Data furnished by ESCOMs.

1.3 Organisation set up

The Organisation set up for implementation and operationalisation of the Scheme is depicted in the chart below:

³ October 2015 by BESCOM, CESC & MESCOM; November 2015 by GESCOM, and February 2016 by HESCOM.

⁴ BESCOM -March 2019, MESCOM – June 2019 and CESC, HESCOM and GESCOM - December 2019.

Chart No.1.1: Organisation setup

1.4 Audit objectives

The Performance Audit was undertaken to ascertain whether:

- i. ESCOMs were able to adhere to the funding pattern of the Scheme and manage funds in a cost-effective manner;
- ii. Components of the Scheme were planned as per field requirements and in compliance with Scheme guidelines;
- iii. Works were executed in a timely manner to achieve scheme objectives and were carried out with due diligence;
- iv. Scheme was monitored regularly in order to achieve its objectives.

1.5 Audit criteria

The main sources of audit criteria for the Performance Audit were:

- Scheme guidelines issued by the MoP, GoI and PFC;

- Approved Need Assessment Document (NAD) and Detailed Project Reports (DPRs);
- Tripartite agreement with PFC, State Government and ESCOMs;
- Instructions/circulars/orders/manuals/guidelines issued by MoP, PFC, GoK and ESCOMs regarding the Scheme, decision of Technical Committee and Board/Sub-Committee Meetings of ESCOMs;
- General Financial Rules; Contract Agreements, Standard Bid Documents, and Sanction orders and
- Karnataka Transparency in Public Procurement (KTPP) Act 1999 and KTPP Rules 2000.

1.6 Audit scope and methodology

The Performance Audit was conducted in all the five ESCOMs covering the transactions under IPDS from 2014-15 to 2022-23. Audit drew a sample of 25 *per cent* using Probability Proportional to Size with Replacement Sampling (PPSWOR) method through IDEA software. The details of selected sample are given in **Appendix - 1**. The following table depicts the sampling methodology:

Table No 1.2: Details of sample selected

Sl. No.	ESCOM	Category	Sample size ⁵
1	BESCOM	Division/ Town	Selected 8 divisions out of 30 covering 10 towns
2	CESC		Selected 5 divisions out of 18 covering 13 towns
3	MESCOM		Selected 3 divisions out of 13 covering 6 towns
4	GESCOM		Selected 4 divisions out of 16 covering 10 towns
5	HESCOM		Selected 7 divisions out of 25 covering 22 towns

Audit scrutinised records maintained at Energy Department, Corporate Offices and at selected Divisional/Sub-divisional offices of ESCOMs and Corporate Office of Karnataka Power Transmission Corporation Limited (KPTCL). The methodology also involved collection of information through audit requisitions and audit queries. Assets created under the scheme were physically verified on a sample basis at the selected Divisions along with the staff of the ESCOMS. Services of a Technical Consultant were availed for aiding Audit in physical verification of assets and for detailed verification of AT&C losses.

The records of PFC relating to sanction and release of grants to ESCOMS in Karnataka were also reviewed.

An Entry Conference was held on 22 July 2023 wherein Audit objectives, criteria, scope and sample were discussed with GoK. The Draft Performance Audit Report was issued to the Government/ Department in August 2024 and Government endorsed the responses of the ESCOMS to the Audit report in October 2024. The replies have been suitably incorporated in the Report,

⁵ As the works were awarded Circle-wise and individual work orders were issued from Divisions, Divisions were the main units considered for sampling.

wherever necessary. The Exit Conference was held on 4 November 2024 wherein the report was discussed. The Government had accepted all the audit recommendations.

1.7 Audit findings

Audit Findings are organised in the following chapters, viz.

- **Chapter II:** Financial Management.
- **Chapter III:** Planning and Implementation of Projects under the Scheme.
- **Chapter IV:** Monitoring

1.8 Acknowledgement

Audit acknowledges the co-operation and assistance extended by the Energy Department of GoK, Management of ESCOMs and KPTCL in facilitating the conduct of Performance Audit.

Chapter II

Financial Management

Chapter-II

Financial Management

Audit observed that ESCOMs incurred extra expenditure, borrowed funds at higher rates of interest and could not entirely avail all grants offered by Government of India. Audit found that ESCOMs incurred an excess expenditure of ₹ 110.89 crore above the sanctioned cost in implementation of the Scheme, of which ₹ 38.52 crore was due to procurement of materials above guidance rates (Central Procurement Prices provided by MoP). Further, delay in submission of documents for claiming last tranche of grant resulted in additional interest burden on borrowed funds to the extent of ₹ 5.45 crore. Grants to the tune of ₹ 12.80 crore were foregone by BESCO and MESCOM due to delay in finalising tender for feeder metering (by KPTCL), inability to tender and award the work of DTC metering, and non-completion of solar component. Audit found that the billing efficiency (ratio of net energy sold to net input energy) of the ESCOMs generally improved during the scheme period leading to reduction in billing losses, i.e. unbilled energy input was reducing.

2.1 Introduction

The envisaged funding pattern of IPDS included (i) capital grant of 60 per cent of approved DPR cost from Government of India (GoI) (ii) 30 per cent through loans from financial institutions/banks and (iii) the remaining 10 per cent from ESCOMs' own funds. ESCOMs were also eligible for an additional grant of 50 per cent of loan (i.e. 15 per cent of approved DPR cost), receivable on achievement of prescribed milestones. Further, ESCOMs were eligible for a grant of up to 0.5 per cent of approved project cost towards Project Management Agency (PMA) cost.

The Scheme guidelines also stipulated that, 'any cost overrun after approval of the project due to any reason whatsoever shall not be eligible for any grant and shall be borne by the utility/respective State Governments'.

2.2 Financial break-up of the Scheme

ESCOM-wise details of sanctioned cost and actual expenditure incurred under the various components of the Scheme are tabulated below.

Table No. 2.1: ESCOM-wise details of approved project cost and expenditure incurred
(₹ in crore)

Sl. No.	Name of ESCOM	Approved project cost (including PMA charges)	DWA Cost (including PMA)	Actual Expenditure (as on 31.03.2023)	Excess (-) /Reduction	Percentage of increase (-)/ decrease of implementation cost over approved project cost
	BESCO					
1	System strengthening	459.45	509.03	488.86	-29.41	-8.54
2	IT phase-II	85.4	257.53	102.53	-17.13	
3	Total	544.85	766.56	591.39	-46.54	

Sl. No.	Name of ESCOM	Approved project cost (including PMA charges)	DWA Cost (including PMA)	Actual Expenditure (as on 31.03.2023)	Excess (-) /Reduction	Percentage of increase (-)/ decrease of implementation cost over approved project cost
	CESC					
4	System strengthening	179.06	193.4	179.08	-0.02	0.93
5	IT phase-II	11.18	13.53	9.39	1.79	
6	Total	190.24	206.93	188.47	1.77	
	GESCOM					
7	System strengthening	184.33	200.43	194.3	-9.97	-3.21
8	IT phase-II	6.3	4.21	2.44	3.86	
9	Total	190.63	204.64	196.74	-6.11	
	HESCOM					
10	System strengthening	229.56	257.39	260.83	-31.27	-12.64
11	IT phase-II	10.27	7.88	9.31	0.96	
12	Total	239.83	265.27	270.14	-30.31	
	MESCOM					
13	System strengthening	208.11	272.39	239.21	-31.1	-13.95
14	IT phase-II	4.78	5.4	3.38	1.4	
15	Total	212.89	277.79	242.59	-29.7	
16	GRAND TOTAL	1,378.44	1,721.19	1,489.33	-110.89	

Source: Data furnished by ESCOMs

ESCOMs incurred an additional expenditure of ₹ 110.89 crore over and above the project cost approved by the nodal agency (PFC). Decrease in project cost was noticed only in CESC (0.93 per cent) and increase in project cost ranged from 3.21 per cent in GESCOM to 13.95 per cent in other ESCOMs.

The increase in project cost was, inter alia, due to;

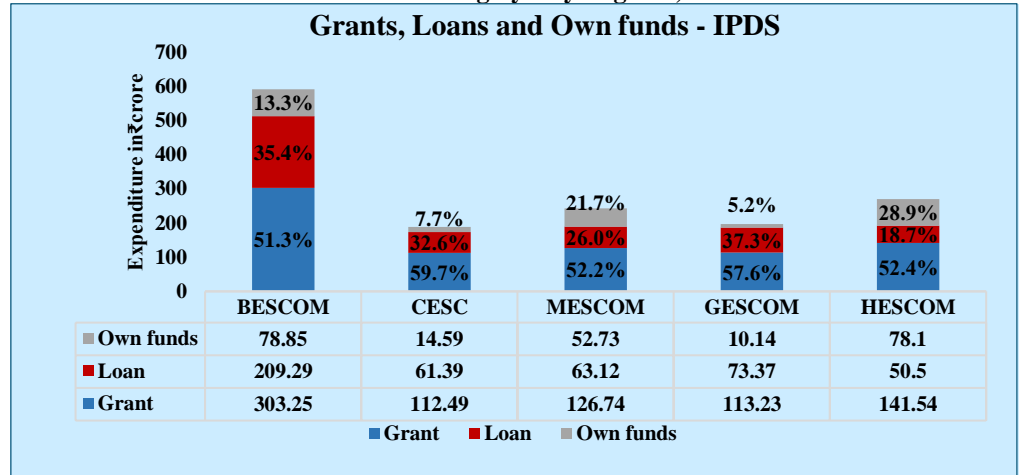
- Extra expenditure on procurement of materials due to non-adoption of CPP rates (*Paragraph 2.8.1*);
- Awarding of works to contractors at high tender premium (*Paragraph 3.5.2*).

Further, this additional expenditure of ₹ 110.89 crore was met out of borrowings or through own funds by ESCOMs.

2.3 Funding Pattern

Audit analysed the actual pattern of expenditure by ESCOMs as against the envisaged funding pattern of 60 per cent grants, 30 per cent loans and balance 10 per cent own funds. The results of the same are depicted in the chart No.2.1.

Chart No. 2.1: Details of funding by way of grant, loan and own funds



Source: Data furnished by ESCOMs

The actual amount of grants received was less than 60 per cent in all ESCOMs and varied from 51.3 per cent (BESCOM) to 59.7 per cent (CESC). The shortfall was met by either borrowings or deployment of own funds. Audit observed that BESCOM, CESC and GESCOM borrowed loans beyond the envisaged 30 per cent. Further, BESCOM, MESCOM and HESCOM spent more than 10 per cent of the project cost from internal resources to fund the project. During the years under review, the ESCOMs were mostly making losses⁶.

2.4 Issues pertaining to Loans

The para 1.2 of chapter IV of scheme guidelines envisaged availing loans from PFC and other financial institutions/ banks. ESCOMs availed loans from Rural Electrification Corporation⁷ (REC) and PFC considering the rate of interest and other terms and conditions. The quantum of loans sanctioned and loans availed by ESCOMs is tabulated below:

Table No. 2.2: Quantum of loans availed by ESCOMs for implementing IPDS

(₹ in crore)

Sl. No.	Particulars	Agency from which loan availed	Sanctioned project cost	Loan sanctioned	30 per cent of sanctioned project cost	Loan availed	Excess loan availed	Rate of Interest (Per cent)
1	BESCOM	REC	459.45	137.39	137.84	137.39	No excess	9.75
2		REC	85.40	96.00	25.62	71.90	46.28	9.5 and 9.75
3	CESC	REC	190.24	90.72	57.07	61.39	4.32	9.75
4	MESCOM	REC	212.89	63.12	63.87	63.12	No excess	9.75
5	GESCOM	REC	190.63	73.37	57.19	73.37	16.18	9.75
6	HESCOM	PFC	239.83	51.10	71.95	50.50	No excess	10
	TOTAL		1,378.44	511.70	413.53	457.67		

Source: Data furnished by ESCOMs

⁶ For the period from 2016-17 to 2022-23.

⁷ A central Public Sector Undertaking under the Ministry of Power.

As against the eligible loan amount of ₹ 413.53 crore (30 *per cent* of sanctioned project cost), REC/PFC sanctioned ₹ 511.70 crore and ESCOMs availed loan of ₹ 457.67 crore at rates of interest ranging from 9.5 to 10 *per cent*. BESCOM, CESC and GESCOM availed excess loans (beyond 30 *per cent* of sanctioned project cost) amounting to ₹ 66.78 crore. An amount of ₹ 19.69 crore was adjusted towards interest payable on RAPDRP loan⁸ out of grant released to BESCOM for ERP and IT Phase II. To overcome the shortage of funds due to this, BESCOM availed additional loans from REC (₹ 46.28 crore). HESCOM and MESCOM did not avail the loan entirely to the extent of eligibility.

2.4.1 Borrowing of funds at higher rates of interest

BESCOM availed term loan⁹ from REC at a negotiated interest rate of 9.75 *per cent*, with an interest rebate of 125 bps¹⁰ and an interest reset option after every three years from date of disbursement.¹¹ The loan amount sanctioned and availed was ₹137.4 crore (₹ 134.4 crore in July 2017 and ₹ 3.00 crore in August 2017). The details of loan released, rate of interest at the time of disbursement and interest rate reset by REC after three years are detailed in **Appendix – 2**.

The actual interest rates on the loan varied from 9.25 *per cent* (November 2019) to 10.11 *per cent* (March 2019) for the first three years from the date of disbursement and ranged between 9.25 *per cent* (March 2022) to 10.35 *per cent* (October 2022) after three years from the date of disbursement.

Audit observed that interest rates on the long-term loans availed¹² by BESCOM ranged from 7.3 *per cent* to 9.35 *per cent* during period 2019-20 to 2022-23, which were lower than the rate of interest charged by REC. BESCOM also did not explore the option of availing loan for IPDS from any of the banks/financial institutions and arbitrarily decided to avail loan from REC at a higher rate. The decision of BESCOM to avail loan from REC for IPDS resulted in additional interest burden of ₹ 7.00 crore for the period from 2019-20 to 2022-23. In addition, BESCOM has to incur additional interest burden for subsequent years also.

BESCOM replied (October 2024) that loan was availed from a Government agency to have better co-operation with the Nodal agency of GOI till completion of project and that it was beneficial to avail loan from the nodal agency of GOI for conversion of Loan into Grant. The reply is not acceptable as BESCOM had availed loan from REC which was not the nodal agency for IPDS. Further, the

⁸ RAPDRP Part A scheme (closed during 2017) was fully funded by loan from Government of India, which was to be converted into grant, including interest. The loan funds were released in advance, through PFC. While assessing RAPDRP funding for conversion of loans to grant, PFC discovered that an amount of ₹ 35.92 crore was due from BESCOM towards interest accrued beyond project capitalisation date and interest earned by BESCOM on GoI funds before same was expended.

⁹ Tenure-13 years, moratorium-3 years.

¹⁰ Basis points.

¹¹ REC had the right to reset the interest rate on each instalment of disbursement on the date occurring immediately after the expiry of three years (as opted by the borrower) from the date of disbursement of the instalment and on the expiry of every three years thereafter, till the loan is fully repaid.

¹² ₹ 266.77 crore for 13 years tenure from Canara Bank was sanctioned during 2019-20.

scheme guidelines did not contain any restrictions on obtaining loans from other financial institutions and BESCOM also did not explore the most economical option available. Further, the additional interest expenditure would be passed on to consumers through tariff.

2.5 Issues pertaining to Grants

Though the ESCOMs were eligible for 60 *per cent* of approved DPR cost as grant, they were unable to avail the entire sanctioned amount of grant. ESCOMs were also eligible for a grant of up to 0.5 *per cent* of approved project cost towards Project Management Agency (PMA) cost.

Against ₹ 830.60 crore of grant sanctioned by Nodal agency, ESCOMs received an amount of ₹ 795.46 crore, resulting in a short receipt of ₹ 35.14 crore. Further, this should be viewed in light of fact that ESCOMs spent more than the approved DPR cost under the Scheme. The grants approved and received by the ESCOMs under the Scheme are tabulated below:

Table No. 2.3: Grants sanctioned, received and forgone by ESCOMs for IPDS
(₹ in crore)

Sl. No.	Name of ESCOM	Approved project cost (including PMA charges)	Grant Sanctioned	Grant received	Grant forgone
	BESCOM				
1	System strengthening	459.45	276.58	264.31	12.27
2	IT Phase-II	34.09	20.52	20.52	0.00
3	ERP	51.31	30.89	18.42	12.47
	Total	544.85	327.99	303.25	24.74
	CESC				
4	System strengthening	179.06	107.79	106.42	1.37
5	ERP	4.35	2.62	2.58	0.04
6	IT Phase-II	6.83	4.11	3.49	0.62
	Total	190.24	114.52	112.49	2.03
	GESCOM				
7	System strengthening	184.33	110.96	110.96	0.00
8	IT Phase-II	6.30	3.76	2.27	1.49
	Total	190.63	114.72	113.23	1.49
	HESCOM				
9	System strengthening	206.38	124.24	124.24	0.00
10	GIS	23.18	13.96	12.45	1.51
11	IT Phase-II	10.27	6.18	4.85	1.33
	Total	239.83	144.38	141.54	2.84
	MESCOM				
12	System Strengthening	168.43	102.22	101.40	0.82
13	GIS	39.68	23.89	22.78	1.11
14	IT Phase-II	4.78	2.88	2.56	0.32
	Total	212.89	128.99	126.74	2.25
	GRAND TOTAL	1,378.44	830.60	797.25	33.86

Source: Data furnished by ESCOMs

The Nodal Agency, Power Finance Corporation (PFC), however, stated that the final tranche of IPDS GoI grant was released to the DISCOMs based on the

eligible project cost *i.e.* minimum of sanctioned cost, award cost, closure cost and final admissible utilization and there was no short disbursal on part of the nodal agency (PFC).

Despite spending more than the approved DPR cost under the Scheme, the entire sanctioned grants were not received due to awarding works at higher rates (Refer **Paragraph 2.8.1 and 3.5.2**) and because of not executing all the items of works sanctioned under the Scheme before closure of the Scheme. Some of the cases of works dropped or executed outside the scheme observed during Audit are discussed in the following paragraphs.

2.5.1 Metering

BESCOM submitted proposal for ₹ 28.24 crore for metering components under IPDS, which was approved by PFC. An amount of ₹ 15.00 crore¹³ could not be utilised by BESCOM due to delay in finalisation of tenders, as detailed below:

2.5.1.1 Feeder metering in BESCOM

The work of feeder metering for facilitating automatic meter reading of feeders to be taken up by ESCOMs was entrusted (August 2016) by Government of Karnataka to Karnataka Power Transmission Corporation Limited¹⁴ (KPTCL). The work was to be carried out by using the budget allotted for feeder metering under IPDS, which was to be transferred from ESCOMs to KPTCL. BESCOM included this work under IPDS and DPR for ₹ 5.31 crore was approved by nodal agency. The first two tenders invited by KPTCL during November 2016 and April 2017 were without defining the pre-qualification of the bidders and did not evoke any response. KPTCL took six months (July 2017 to January 2018) to cancel the second bid after it was found techno-commercially non-responsive (July 2017). Thereby, the invitation of third tender was delayed. The third tender was invited only during February 2018 and Letter of Intent was issued during March 2019. As the IPDS scheme had to be closed by 31 March 2019, BESCOM decided (November 2019) to take up feeder metering work using its own funds amounting to ₹ 5.75 crore.

Thus, delay in finalising tender by KPTCL for feeder metering work resulted in foregoing grant of ₹ 3.19 crore¹⁵.

2.5.1.2 DTC metering in BESCOM

BESCOM decided (December 2017) to utilise ₹ 6.33 crore for metering of 1,311 Distribution Transformer Centres (DTCs). The Company called six tenders between December 2017 and December 2018, of which the first, second and fourth tenders failed to elicit any bids. The third tender could not be opened due to change in tender inviting authority after calling the tender and the fifth tender was considered non-responsive, due to non-fulfilment of tender conditions by lone bidder. The sixth tender was cancelled due to high rates and

¹³ ₹ 5.31 crore plus ₹ 9.69 crore.

¹⁴ A Government of Karnataka power utility dealing in transmission of power in the State.

¹⁵ 60 per cent of ₹ 5.31 crore (amount included in the DPR and transferred to KPTCL for feeder metering by BESCOM).

inability to complete the work within the scheduled time of March 2019. Thus, BESCOM could not utilise ₹ 9.69 crore for metering DTCs due to non-finalisation of tenders within time, resulting in forgoing grant of ₹ 5.81¹⁶ crore for this component.

2.5.2 Non-completion of Solar works

Of the five ESCOMs, BESCOM and MESCOM could not complete the allocated/awarded works under the Solar component. The grant foregone due to non-completion is detailed below:

- BESCOM awarded (September 2017) the works for installation of 1,125 kWp Solar panels for an amount of ₹ 7.91 crore. However, the contractor could not complete the installation of 451.5 kWp of Solar capacity valued ₹ 4.08 crore, resulting in loss of opportunity to get grant of ₹ 2.45 crore¹⁷ (*detailed in paragraph no. 3.9.3*).
- MESCOM awarded (May 2017) contract to install 1,671 kWp of Solar panels at ₹ 11.74 crore, against which the contractor could only execute 1,351.44 kWp¹⁸, due to non-receipt of permissions from the site owners. The non-installation of 319.56 kWp capacity valued ₹ 2.25 crore resulted in forgoing an opportunity to receive grant of ₹ 1.35 crore (*detailed in paragraph no. 3.9.3*).

Thus, non-completion of awarded work under Solar component under IPDS resulted in forgoing grant to the extent of ₹ 3.80 crore.

2.5.3 ERP

BESCOM could spend only ₹ 30.89 crore out of the sanctioned project cost of ₹ 51.31 crore towards ERP implementation within the scheduled project completion date (December 2021). Against this, BESCOM received a grant of ₹ 18.42 crore. Due to non-completion of the work, the Company was unable to spend the sanctioned cost fully within the stipulated time and this resulted in loss of opportunity to receive grant of ₹ 12.47 crore (*detailed in paragraph no. 3.10*).

During the exit conference, BESCOM stated that for ERP implementation under IPDS, only three modules were to be considered. They added that BESCOM was implementing seven modules and informed that the ERP rollout could not happen as envisaged due to COVID.

The reply is not acceptable, since it took two years from approval (February 2018) to issue of DWA (March 2020), whereas the guidelines warranted awarding within six months. Though the implementation period overlapped the Covid period, the overall delay of 18 months could be attributed to the company

¹⁶ 60 per cent of ₹ 9.69 crore.

¹⁷ Being 60 per cent of ₹ 4.08 crore (as no payments were made to PPEL).

¹⁸ 31 December 2018 to 30 June 2019.

being unable to finalise its requirements (modules) and award the work within time.

2.6 Delay in receipt of final tranche of grant

As per the IPDS guidelines, the last tranche of 10 *per cent* of grant was to be released on submission of Project Completion Certificate and PMA report ¹⁹. Audit observed delays in finalising the closing formalities by BESCOM, CESC and MESCOM for claiming the last tranche of grant amounting to ₹ 15.59 crore, ₹ 19.04 crore and ₹ 10.14 crore respectively.

The details of delay in submission of project completion certificate and additional interest burden due to the delays are given below:

Table No. 2.4: Additional interest burden due to delay in submission of documents

Sl. No.	Name of ESCOM	Date of declared completion	Date of submission of documents for claiming last tranche of grant	Delay in no. of months after considering three months allowed for submission	Date of receipt of grant	Amount claimed (in ₹ crore)	Additional interest burden (in ₹ crore)
1	BESCOM	March 2019	January 2021	19 months	03 April 2021 07 June 2021 ²⁰	15.59	2.28 ²¹
2	CESC	December 2019 ²²	March 2021	12 months	02 December 2021	19.04	1.76 ²³
3	MESCOM	June 2019	March 2021	18 months to 24 months	06 July 2021	10.14	1.41 ²⁴
			Total				5.45

Source: Data furnished by ESCOMs.

The delay in submission of documents in time resulted in ESCOMs incurring an additional interest burden of ₹ 5.45 crore on borrowed funds. Timely submission of documents to PFC could have prevented the additional interest burden on BESCOM, CESC and MESCOM.

BESCOM and CESC replied (October 2024) that due to COVID-19, there was a delay in reconciling the draft copies and closure formats, which resulted in delay in submission.

The reply may be viewed against the fact that the works had been completed during March and December 2019 and the COVID-19 pandemic occurred in March 2020. Accordingly, BESCOM and CESC had sufficient time to reconcile draft copies and submit project completion report.

¹⁹ Regarding project completion and expenditure incurred along with recommendation for release of grants.

²⁰ ₹ 14.51 crore was released on 03.04.2021 and ₹ 1.08 crore was released on 07.06.2021.

²¹ Calculated at the rate of 9.25 *per cent* on ₹ 15.59 crore for 19 months.

²² Works related to system strengthening work including metering, and Solar.

²³ Calculated at the rate of 9.25 *per cent* on ₹ 19.04 crore for 12 months being the least period.

²⁴ Calculated at the rate of 9.25 *per cent* on ₹ 10.14 crore for 18 months being the least period.

MESCOM attributed the delay to belated communication of closure formats by PFC (received only on 22 December 2020), due to which it could submit the documents only after 22 December 2020.

PFC stated that there was no delay on its part in processing of last tranche of GoI grant to the ESCOMs of Karnataka under IPDS, as the closure formats were readily available on IPDS website before 29 June 2020 and ESCOMs of Karnataka could only provide the DRC recommendation for closure of IPDS ST&D projects after DRC meeting held on 30 December 2020.

2.7 Additional Grant foregone

As per the Scheme Guidelines²⁵, ESCOMS were eligible for additional grant of 50 *per cent* of loan component (*i.e.* 15 *per cent* of project cost) subject to fulfilment of following three conditions *viz*;

- (a) Timely completion of the scheme within approved time schedule;
- (b) Reduction in AT&C losses as per trajectory finalised²⁶ by Ministry of Power (MoP) in consultation with State Governments (ESCOM wise); and
- (c) Upfront release of admissible revenue subsidy by State Government based on metered consumption.

Audit observed the following with respect to fulfilment of the above conditionalities:

- Only BESCOM had declared the system strengthening portion of the scheme as completed on 31 March 2019, as per timelines fixed by PFC (*Appendix 3*).

CESC, GESCOM, HESCOM and MESCOM could not complete the system strengthening work within the scheduled timeline and completed the same within the extended period. MESCOM had taken extension and could complete the work only in June 2019 whereas CESC, GESCOM and HESCOM completed the work after taking further extension (*Appendix 3*).

- Reduction in AT&C losses as per agreed trajectory was not achieved by the ESCOMs. During the period of 2016-17 to 2020-21, BESCOM and CESC achieved the AT&C loss targets only in 2017-18, GESCOM during 2016-18 and 2019-21 and HESCOM during 2019-21. MESCOM could not achieve the targets in any of the years. An analysis of AT&C Losses of the ESCOMS is made in *Para 2.7.1*.
- The ESCOMs could not fulfil the third condition in any year as the payment of revenue subsidy by GoK was made based on assessment, instead of metered consumption as the Irrigation Pump (IP) set installations were not fully metered.

²⁵ Chapter IV- Fund Disbursement Guidelines, Para 14.1.

²⁶ The AT&C losses as determined by Power Finance Corporation (PFC) in the “Report on Performance of State Power Utilities” as per the formula of MoP shall be the source for examining the compliance of this condition.

As none of the ESCOMs could fulfil the conditions stipulated under the scheme, they did not receive additional grant to the extent of ₹ 205.74²⁷ crore.

The ESCOMs replied (October 2024) that, for revenue subsidy for IP sets, metering was done at feeder level and not at consumer level owing to resistance from consumers. CESC, GESCOM, HESCOM and MESCOM stated that the works were completed by them within the extended completion period. HESCOM and GESCOM claimed that they had achieved the AT&C loss trajectory fixed under the scheme.

2.7.1 AT&C losses

As per the Scheme documents, Aggregate Technical and Commercial losses (AT&C Losses) were defined as the percentage of difference between net input energy and energy realised to net input energy. The energy realised is product of net sale of energy and collection efficiency. The collection efficiency is percentage of net revenue from sale of energy adjusted for change in debtors for sale of energy to net revenue from sale of energy.

Thus, AT&C loss is the percentage of energy not realised (net energy input *minus* energy realised) to net energy input. This depends upon the extent of energy billed to consumers (billing efficiency) and efficiency of revenue collection (collection efficiency).

The AT&C loss trajectory fixed as per the scheme and their achievement by ESCOMS are given in Table No. 2.5 below:

Table No. 2.5: AT&C loss trajectory fixed and their achievement by ESCOMS

Sl. No.	Year	ESCOM	BESCOM	CESC	GESCOM	HESCOM	MESCOM
1	2016-17	As per MoP trajectory for IPDS	14.23	14.92	23.92	18.99	12.08
		AT&C loss as reported by Company	14.81	20.41	17.33	18.35	12.11
2	2017-18	As per MoP trajectory for IPDS	13.37	14.27	23.41	18.56	11.65
		AT&C loss as reported by Company	10.28	9.02	16.39	22.84	13.36
3	2018-19	As per MoP trajectory for IPDS	12.72	13.59	22.84	17.96	11.28
		AT&C loss as reported by Company	15.92	18.72	28.41	24.88	11.91
4	2019-20	As per MoP trajectory for IPDS	11.87	12.99	22.44	17.43	10.79
		AT&C loss as reported by Company	17.62	21.45	21.29	14.64	14.85
5	2020-21	As per MoP trajectory for IPDS	11.51	12.51	21.72	17.00	9.92
		AT&C loss as reported by Company	13.70	20.05	20.22	14.16	11.71

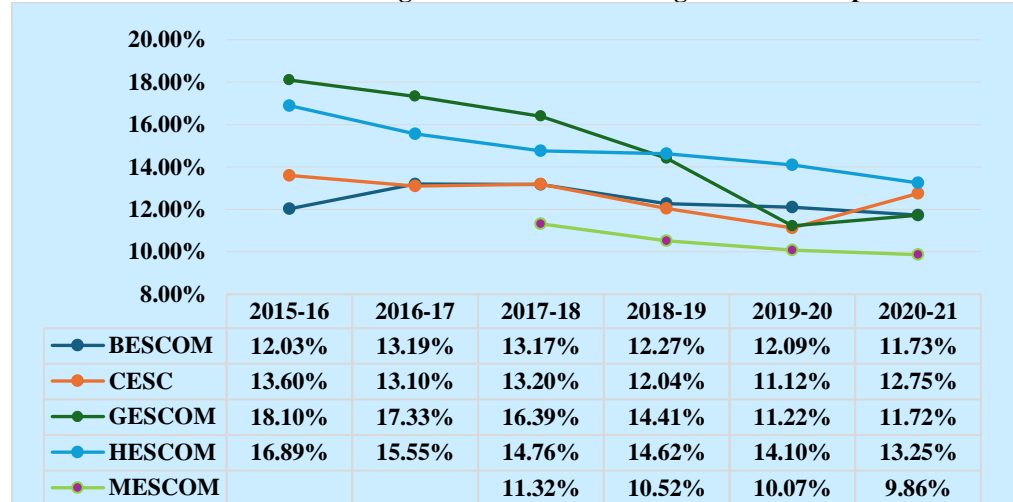
Source: Data furnished by ESCOMS

²⁷ ₹ 1,371.57 crore (Total sanctioned cost excluding PMA) × 15 per cent.

Audit observed that the individual ESCOM-specific targets were not achieved in all years. Over a five-year period, AT&C losses displayed a fluctuating pattern.

Audit analysed the AT&C loss of the ESCOMs during the scheme period and found that the billing efficiency (Ratio of net energy sold to net input energy) of the ESCOMs generally improved during the scheme period resulting in reduction in billing losses, *i.e.* unbilled energy input was reducing. The percentage of billing losses for the five ESCOMs are depicted in the Chart 2.2.

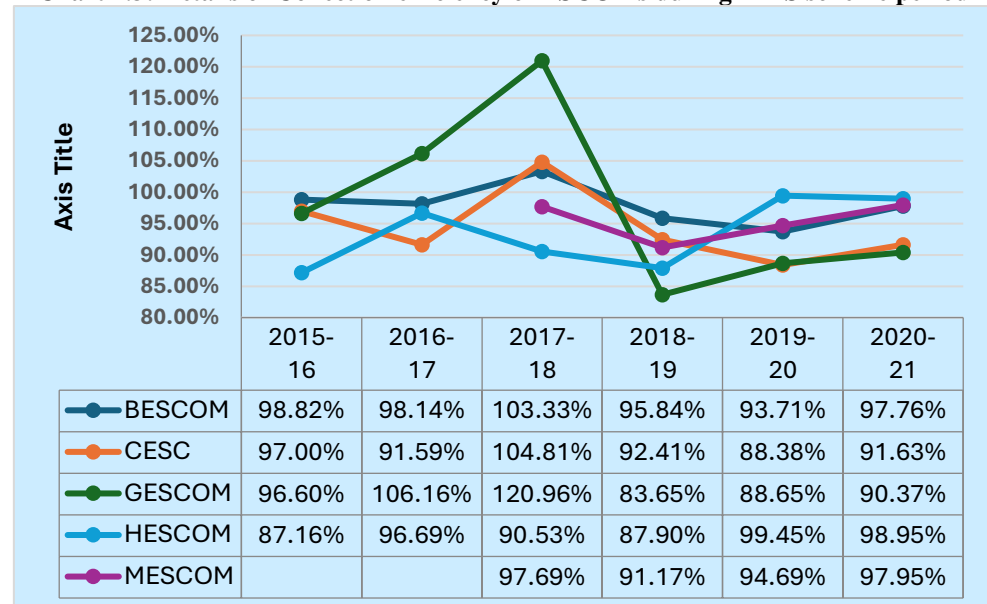
Chart 2.2: Details of billing loss of ESCOMs during IPDS scheme period



* Billing data in respect of MESCOM for years 2015-16 and 2016-17 were not available.

Though there was reducing trend in billing losses, the AT&C losses fluctuated and did not show a consistent reducing trend, as collection efficiency varied as shown in the Chart 2.3. This variation in collection efficiency was influenced mainly by delay in release of subsidy by Government of Karnataka.

Chart 2.3: Details of Collection efficiency of ESCOMs during IPDS scheme period



* Billing data in respect of MESCOM for years 2015-16 and 2016-17 was not available.

During the exit conference, BESCOM stated that almost all the ESCOMs had achieved the targeted AT&C by the end of the five-year period. The statement

may be viewed in light of the fact that the reduction in AT&C losses was not consistent across years in any of the companies as per the published data of the Companies and AT&C losses were higher than the targets in most of the years as shown in Table No. 2.5.

Recommendation:

- 1. The Government of Karnataka may ensure that ESCOMs reduce AT&C losses as per the trajectory fixed by the MoP for the IPDS. It may also ensure timely release of subsidy for irrigation pump sets as per metered consumption.**

2.8 Issues relating to Financial Prudence

2.8.1 Extra expenditure on procurement of materials

In order to facilitate States in mobilisation of quality equipment/ materials at competitive price under IPDS, Ministry of Power (MoP) decided (August 2015) to constitute a committee to finalise technical specification and rates for various items like Transformers, Conductors, AB cables and UG cables centrally at Central Procurement Prices (CPP). The rates and vendors discovered in this regard for the State of Karnataka were communicated in April 2016. MoP reviewed (29 June 2016) the issues pertaining to rates discovered under the new initiatives for materials mobilisation and decided that States were free to procure the materials of their own, if it was felt that their rates were less than CPP rates duly ensuring prescribed technical specifications.

Government of Karnataka directed (August 2016) to procure high value materials centrally for all ESCOMs. However, ESCOMs took up the system strengthening works under IPDS on total turnkey basis. The following table indicates the details of high value materials *viz.* Distribution Transformers and Conductors used in system strengthening work for IPDS works and the cost incurred by ESCOMs:

Table No. 2.6: Additional cost due to procurement of high value material under turnkey
(₹ in Crore)

Sl. No.	ESCOM	Material used	Total cost as per CPP rates	Actual procurement cost under turnkey	Additional cost
1	BESCOM	25, 63, 100, 250 kVA Transformers, ACSR Weasel and Rabbit conductors	28.60	35.01	6.41
2	HESCOM		28.43	36.63	8.20
3	MESCOM		27.87	35.25	7.38
4	CESC		28.29	36.71	8.42
5	GESCOM		25.63	33.74	8.11
Total			138.82	177.34	38.52

Source: Data furnished by ESCOMs.

The rates obtained for high value items under total turnkey contracts were higher than the CPP rates. Procurement (between September 2016 to January

2018) of high value items under total turnkey contracts, disregarding MoP directions resulted in avoidable extra expenditure of ₹ 38.52 crore.

The ESCOMs replied (October 2024) that tenders were invited incorporating the maximum CPP rates in Total Turnkey basis, but the actual awarded cost was more due to addition of tender premium. The reply confirms that the companies could not procure the materials at the MoP discovered rates since they went for total turnkey.

2.8.2 Appointment of Project Management Agency without calling tender

Clause 11 of Chapter - II of guidelines stipulated the appointment of Project Management Agency (PMA) utility-wise, to assist in project formulation, bidding process and monitoring physical and financial progress of the scheme. The main responsibility of the PMA was to assist the utility and to ensure timely implementation of the project. Appointment of PMA was a pre-requisite for release of funds from the Nodal Agency under the Scheme. GoI allowed 100 *per cent* grant towards expenditure incurred on PMA, limited to 0.5 *per cent* of sanctioned cost of works. Any fee payable to PMA beyond 0.5 *per cent* of the project cost had to be borne by ESCOMs.

The guidelines (*Clause 3*) allowed appointment of PMA from any of the Central Public Sector Undertakings (CPSUs) or through bidding.

Based on representation (January 2015) by the Energy Department, Government of Karnataka (GoK), Finance Department of GoK gave exemption under Section 4(g) of Karnataka Transparency in Public Procurement Act, 1999 (KTPP Act) to REC Power Development Corporation Limited (RECPDCL), a subsidiary of REC. Based on this exemption, all the five ESCOMs appointed RECPDCL as PMA (between June 2015 and October 2015)²⁸, without inviting tenders and fixed fees at 1.50 *per cent* (the rate quoted by RECPDCL) of the approved project cost as against 0.5 *per cent* mentioned as reimbursable, in the guidelines. Incidentally, Audit observed that MESCOM received an offer for PMA work at 0.94 *per cent* of the sanctioned cost for Gas Insulated Sub-stations as additional work under IPDS scheme, when it went for competitive bidding.

BESCOM and HESCOM responded that many other ESCOMs across India had awarded PMA work to RECPDCL at rates of 1.5 *per cent* and above. However, Audit observed that there were instances of awarding works at rates lower than 1.5 *per cent* in other ESCOMs²⁹. Further, MESCOM stated that PMA work was awarded to RECPDCL as it had exemption under sec 4(g) of KTPP act and it was a subsidiary of REC. The argument cannot be accepted as sec 4(g) exemption was secured solely for the purpose of awarding the work to the agency without tendering. Further, the probability of getting the work done at lower rates through tendering also could not be ruled out.

²⁸ BESCOM – June 2015, CESC - September 2015, MESCOM – October 2015, HESCOM – September 2015, GESCOM- September 2015.

²⁹ Paschimanchal Vidyut Vitaran Limited: PMA-RECPDCL- Rate: 1.05 *per cent* of approved project cost; Durgapur Projects Limited: PMA-RECPDCL-Rate:1.35 *per cent* of total project cost as per approved DPR.; Eastern Power Distribution Company of AP Limited: PMA-M/s PFC Consulting Limited- Rate:1.00 *per cent* of the project cost as per approved DPR.

Chapter III

Planning and Implementation of the Scheme

Planning and Implementation of the Scheme

The Scope of works under IPDS scheme included the following components: (i) strengthening of sub-transmission and distribution network, (ii) metering of feeders /distribution transformers/consumers, etc. (iii) IT enablement of distribution sector, (iv) provisioning of Solar panels on Government buildings with net-metering, etc.

Significant variations from planned works were observed in execution of system strengthening works. ESCOMs did not include certain quantities in the DPRs or included quantities which were not required therein, necessitating change in scope of works during execution. Work orders under system strengthening component were dropped after awarding, citing reasons such as non-receipt of essential permissions, right of way issues and coverage of works under other schemes.

Audit found that the percentage of execution against the sanctioned quantity in system strengthening works ranged from zero per cent to 4,890 per cent (Ring Main Units – RMU). ESCOMs awarded contracts in violation of KTPP Act and Rules, by providing less time for submission of tenders and by awarding works at high tender premiums. There was delay in completion of the work and non-achievement of the objective as envisaged, even after more than three years of issue of Detailed Work Award. Non-completion of DC/DRC work within time resulted in additional expenditure on co-hosting charges and non-utilising of GIS data procured by ESCOMs. Though BESCOM spent ₹ 42.04 crore for implementation of ERP and declared it as completed, the system was yet to be put to use.

Automated Meter Reading was not done in any of the selected eight Divisions of BESCOM, even after installation of static meters and GPRS modems. ESCOMs issued DWAs without proper planning and identification of buildings for installation of Solar power plants resulting in delay in execution and non-fulfilment of objectives. ESCOMs did not prepare comprehensive Quality Assurance plan and could not ensure prescribed quality of materials. Non-conducting of mandatory inspections resulted in poor quality materials being used in Solar project of CESC and consequent low energy generation by the Solar panels. Non-maintenance of Solar panels also resulted in poor performance.

3.1. Introduction

The Scheme guidelines stipulated formulation of the project in two stages:

Under first stage, ESCOMs were to identify critical gaps in sub-transmission and distribution network considering all relevant parameters³⁰ for efficient management of the distribution system and prepare a Need Assessment Document in format prescribed in the Scheme Guidelines.

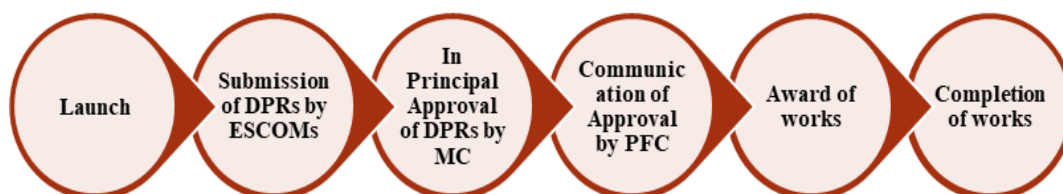
Based on the assessment, scope of work had to be prioritised to ensure (i) 24×7 power supplies for consumers in urban area, (ii) reduction of Aggregate Technical and Commercial (AT&C)³¹ losses as per trajectory (ESCOM wise-finalized by the Ministry of Power in consultation with States) and (iii) providing access to all urban households.

Under the second stage, based on the broad scope of work validated by PFC (Nodal agency) in the first stage, ESCOMs were to formulate bankable Detailed Project Reports (DPRs) based on detailed field survey and latest approved schedule of rates for various items of work. These DPRs, duly recommended by the Distribution Reforms Committee (DRC)³² at the State level, were to be submitted by the utilities to the Nodal agency for appraisal.

As per the Scheme guidelines, works had to be awarded within six months from the communication of approval by Monitoring Committee, *i.e.* by September 2016 and were to be completed within 24 months from award *i.e.* by September 2018 (*i.e.* within a period of 30 months from approval by Monitoring Committee).

The steps in the implementation of IPDS are depicted in the chart below:

Chart No. 3.1 process of implementation of IPDS



ESCOMs in the State took up the following major components under IPDS:

- i. System Strengthening;
- ii. Metering;
- iii. Provisioning of Solar panels on Government buildings including net-metering; and

³⁰ Such as consumer mix, consumption pattern, voltage regulation, Aggregate Technical and Commercial (AT&C) loss level, High Tension (HT) and Low Tension (LT) ratio, optimum loading of transformers and feeders/lines, reactive power management, power factor improvement, standard of performance *etc.* and on-going works under other schemes.

³¹ Sum total of technical and commercial losses and shortage due to non-realization of billed amount.

³² Headed by Chief Secretary of the State.

- iv. IT – Enterprise Resource Planning (ERP) and IT Phase-II (incremental upgradation of RAPDRP system in IPDS towns).

3.2 Mode of Implementation of the Scheme

Based on the broad scope of work validated by Nodal agency (PFC), the ESCOMs were to prepare Detailed Project Reports (DPRs) in accordance with detailed field survey and latest approved schedule of rates for various items of work. These DPRs, duly recommended by the Distribution Reforms Committee (DRC) at the State level, were to be submitted by the ESCOMs to PFC for appraisal. Grant was to be extended on the sanctioned cost or award cost of the project, whichever was lower.

Para 8 of the IPDS guidelines stipulated that the projects could be implemented on turn-key/ partial turnkey/ departmental basis by ESCOMs through e-tendering in accordance with the prescribed Procurement Policy, Standard Bidding Document and Technical Specifications circulated separately by the PFC. The projects were to be awarded within six months from the date of communication of approval by the monitoring committee of Government of India (GoI). There was a time limit of 24 months for completion of projects from the date of issue of Letter of Award (LoA) by ESCOMs. The maximum time limit for completion of the project *viz.* award and implementation was not to be beyond thirty months from the date of communication of the approval by the Monitoring committee.

If ESCOMs were not able to complete the projects within stipulated time-periods due to circumstances beyond their control, the Monitoring Committee was authorised to grant time extension based on merit in exceptional cases, on case-to-case basis.

3.3 System Strengthening

3.3.1 Delay in Implementation

In-principle approval to DPRs of all five ESCOMS, valued at ₹ 1138.75 crore for implementation of IPDS in the State was accorded (August 2015) in the fourth monitoring Committee Meeting. Power Finance Corporation (PFC) (Nodal agency) communicated approval for the project proposals of ESCOMS in Karnataka during March 2016. As per the Scheme guidelines, works had to be awarded within six months from the communication of approval by Monitoring Committee, *i.e.* by September 2016 and was to be completed within 24 months from award (*i.e.* within a period of 30 months from approval by Monitoring Committee) *i.e.* by September 2018.

The actual time taken to implement IPDS in the State of Karnataka is detailed in the table below:

Table No. 3.1: Implementation period of IPDS

Sl. No.	Event	Date	Actual time taken	Cumulative time taken
1	Launch of scheme by MoP, GoI	December 2014	-	-
2	Submission of DPRs by ESCOMs	June 2015	6 months	6
3	In Principle Approval of DPRs by Monitoring Committee	August 2015	2 months	8
4	Communication of Approval of project by Nodal agency	March 2016	7 months	15
5	Award of works	13 February 2017 to 04 July 2018	11 months to 27 months from the date of communication of approval by Nodal agency	26 - 42
6	Completion of works	December 2019	18 to 34 months from the date of communication of approval by PFC	60

Source: Compiled by Audit from scheme documents and data furnished by ESCOMs

As seen, PFC took seven months for communicating the Monitoring Committee's approval of DPRs. ESCOMs took another 11 to 27 months to award works as against the stipulated six months. Thereby, the works which should have been completed by September 2018 were completed only in December 2019. The major reason for delay in awarding/ completion of the work was, delay (12 months) in finalization of mode of implementation of the project *ie.*, partial turnkey/total turnkey by PFC.

Further, GoI constituted a Central Procurement Committee (August 2015) to facilitate and handhold states in mobilising major materials with standard technical specifications at competitive prices (Central Procurement Prices-CPP) through a transparent bidding process, for which some States including Karnataka expressed (February 2016) reservation regarding the rates³³ finalised. GoI finally approved (29 June 2016) and intimated that the states were free to procure the materials of their own, if it was felt that their rates were less than CPP rates.

In addition, there were delays in completion of works by the ESCOMs, which were attributable to inadequate field survey and resultant variations in quantities, lack of prior clearances from statutory authorities, non-procurement of land, delays by ESCOMs in issue of work orders, lack of action on defaulting contractors, *etc.* as discussed below.

3.3.2 Overall delay in completion of works under the scheme

The Scheme was launched in December 2014 and ESCOMs submitted DPRs in June 2015, which were approved by the Monitoring Committee in August 2015. However, approval was communicated to ESCOMs by PFC only in March

³³ CPP rates.

2016, after seven months. Works were awarded by ESCOMs from February 2017 to July 2018 (delay of 11 to 27 months). The major reason for delay in awarding/ completion of the work was, delay in finalization of mode of implementation of the project (12 months) *ie.*, partial turnkey/total turnkey by PFC.

Thus, there was delay in implementation of works under the Scheme in all ESCOMs, which ranged from two months to 20 months from the original date of scheduled completion as per Scheme guidelines³⁴. Audit observed that the ESCOMs were unable to complete the works within the original scheduled date and were allowed extension of date for completion of works, within which works were declared complete as detailed in **Appendix - 3**.

The observations on implementation of the scheme by ESCOMs are as follows:

3.3.3 Delay in finalisation of tenders and awarding of works

Audit observed that ESCOMs took considerable time to award the approved works (March 2016), resulting in delay in completion. Even though works were to be awarded within six months, in several cases, tenders were issued after six months. The ESCOM wise details of number of tenders issued, DWAs issued, time taken to issue DWAs and delays are tabulated below:

Table No. 3.2: ESCOM wise details of delay in issue of tender and award of works

Sl. No.	ESCOM	Number of tenders called for system strengthening	No. of tenders issued beyond six months	Percentage of tenders issued beyond six months	Delay in issue of tender (in months)	Number of DWAs issued	Number of DWAs delayed (percentage of delay)	Delay in issue of DWA (in months)
1	BESCOM	11	5	45.45	11 to 17	11	11 (100.00)	6 to 21
2	CESC	6	2	33.33	7 to 16	6	6 (100.00)	4 to 13
3	GESCOM	8	6	75.00	8 to 17	8	8 (100.00)	7 to 15
4	HESCOM	14	7	50.00	9 to 22	14	14 (100.00)	5 to 28
5	MESCOM	10	7	70.00	7 to 15	14	10 (100.00)	7 to 20

Source: Compiled by Audit from the data furnished by ESCOMs.

As seen, ESCOMs issued tenders with delays ranging from seven to 22 months and award of works was also delayed by four to 28 months beyond stipulated time from the date of sanction by monitoring committee. The delays in issue of tenders and DWAs are detailed in **Appendix - 4**.

3.3.4 Delay in issue of work orders and consequent delay in execution

Audit reviewed 49 DWAs issued relating to System Strengthening works in five ESCOMs and observed non-execution of works and delays in completion due to delays in issue of work orders³⁵ by the divisions. There was a time limit of 24 months for completion of projects from the date of issue of Letter of Award

³⁴ Mentioned in Para 3.2.

³⁵ On the basis of DWA, Divisions issue work orders to contractors for individual work components.

(LoA) by ESCOMs. The Corporate office of the ESCOMs called for tenders and issued Detailed Work Awards (DWA) circle-wise. Some of the instances of delay in completion of the works are detailed below:

- i. Eight test checked Divisions of BESCOM³⁶ issued 632 work orders for six DWAs for system strengthening works. Audit observed delays in issue of these work orders and those issued for other components of IPDS as given below:

Table No. 3.3: Details of delay in issue of work orders in BESCOM

Sl. No.	Nature of work	No. of work orders issued	No. of Work orders issued with delay	Issue of work orders after issue of DWA (Period of delay in months)
1	System Strengthening	632	378	13-24
			90	25-36
			11	37-48
2	Installation of AMR meters for consumers	42	27	7-12
3	Procurement and installation of modems	60	60	10-18
4	Metering cubicle	5	5	7-12

Source: Compiled by Audit from the data furnished by BESCOM.

In Rajajinagar and Davanagere divisions of BESCOM, 69 work orders (63 work orders related to System Strengthening and 6 related to installation of modems for 40 HP and above, LT-3 and LT-5 meters) valued ₹ 26.81 crore were issued after the scheduled date of completion *i.e.* 31 March 2019 (**Appendix - 5**). Audit also observed that in many instances (57 out of 69), the dates of issue of work order and work completion were the same. While BESCOM did not record reasons explaining the delays in issue of work orders, in reply BESCOM stated that delay was due to non-allocation of budget, technical glitches in software and need for conducting surveys. The reply was not acceptable, as reasons put forth by BESCOM could not justify the delay of seven to 48 months, as budget was already allocated under the scheme and survey should have been undertaken before taking up of work.

- ii. CESC awarded (February – April 2017) four System Strengthening works with delays ranging from 10 to 12 months from the date of approval (by monitoring committee) and works were completed in 35 to 45 months with delays of five to 15 months. In Chamarajanagar-Kodagu Circle of CESC, the DWA was issued with a delay of 9 months and only 75 *per cent* of the awarded works could be executed within the stipulated time. In Hassan Circle, the works awarded during February 2017 were not completed at the time of closure (March 2019) of IPDS scheme. At the time of closure, UG cable work (19.05 *per cent*), LT, line augmentation/reconductoring (57.78 *per cent*), capacity enhancement of

³⁶ Davanagere, Chitradurga, Tumakuru, HSR Layout, Koramangala, Indiranagar, Rajajinagar and Kengeri.

LT substation (70.27 *per cent*), AB cable works (76.83 *per cent*) were completed. Audit observed that no action was initiated against the contractors for non-completion of work within time except one instance of levying ₹ 0.18 lakh as penalty in Hassan Circle for delay in completion of work as per tender conditions.

CESC stated (October 2024) that due to poor progress of the work, notices were also issued to the contractor and due to field constraints/ corridor/ ROW issues/ re-routing/ local issues, the quantity of materials awarded was reduced/ increased. Further, CESC intimated that due to elections to Karnataka Legislative Assembly in March 2018 to May 2018, Parliamentary election from March 2019 to May 2019, natural disaster in Kodagu during 2018, introduction of GST during 2017 *etc.* resulted in delay in completion of work. Audit observed that RoW issues, *etc.*, should have been sorted out before award of works and further, CESC did not exercise the option of writing to Election Commission of India for exemption from code of conduct as it had done in 2016 at the time of calling the initial tender. The contractor had not completed the work as on 12 April 2019. CESC did not levy any liquidated damage and the reasons for non-levy were not forthcoming from the records.

- iii. HESCOM awarded (March 2017) System Strengthening works in six towns in Chikodi Circle to Manipal Energy & Infrastructure Ltd, Bengaluru in March 2017, at a cost of ₹ 4.74 crore³⁷ (20.69 *per cent* above the amount put to tender) with scheduled completion by March 2018. The work was completed for ₹ 3.46 crore in September 2019, with a delay of 18 months. HESCOM did not levy any liquidated damage and the reasons for non-levy were not forthcoming from the records.

No specific reply to the observation was furnished by HESCOM.

These delays resulted in delay in completion of work and consequent non-achievement of objectives as envisaged, even after more than three years of issue of Detailed Work Award.

Recommendations:

- 2. The Government of Karnataka may ensure that ESCOMs may devise a suitable mechanism to issue tenders in time, and to take up works without delay and to ensure completion of works in time to achieve envisaged objectives.**

³⁷ ₹ 3.63 crore (Supply) + ₹ 1.11 crore (Erection) = ₹ 4.74 crore.

3.4 Status of System Strengthening works under the Scheme

PFC being the nodal agency, identified 27 components of work to be taken up under system strengthening works, of which DPRs were prepared and approved for 23 components and the ESCOMs in the State executed 19 components. ESCOMs were able to complete envisaged quantum of nine components of works like installation and capacity enhancement of sub stations, transformers, drawing new 33kV feeders, UG cables, 11 KV bay extension and installation of Solar panels on Government buildings, *etc.* Four components pertaining to Repair and maintenance of 33/11 KV Substations, Capacitor Bank, Smart Meter and Prepaid meter were not implemented. The percentage of execution against the sanctioned quantity in the components ranged from zero *per cent* to 4,890 *per cent* (in the case of Ring Main Units -RMU). The details of works sanctioned, executed and shortfall/excess and percentage of execution against sanctioned quantity are detailed below.

Table No. 3.4: Percentage of achievement against sanctioned quantity in system strengthening works consolidated for ESCOMs

Sl. No.	Components	Unit	Sanctioned quantity	Executed quantity	Shortfall (-) / Excess	Percentage of achievement against sanctioned quantity
1	New Sub-station	MVA	85.00	75.00	-10.00	88.24
	Nos of New Sub-station	No.	7	7	-	100.00
2	33/11 KV Additional transformer	MVA	10.00	10.00	-	100.00
	Nos of 33/11 KV Additional transformer	No.	2	2	-	100.00
3	33 KV New Feeders	Km	19.00	21.73	2.73	114.37
4	33 KV Feeder Reconductoring	Km	63.00	43.14	-19.86	68.48
5	11 KV New Feeders	Km	1,166.50	927.81	-238.69	79.54
6	11 KV Feeder Reconductoring	Km	1,207.90	930.60	-277.30	77.04
7	Aerial Bunched Cable	Km	2,319.20	2,067.75	-251.45	89.16
8	UG Cables	Km	950.72	1,300.12	349.40	136.75
9	11 KV Bay Extension	No.	2	6	4	300.00
10	Installation of New DT	MVA	293.04	384.34	91.30	131.16
	Nos of Installation of New DT	No.	3,966	3,899	-67	98.31
11	Capacity Enhancement of DT	MVA	78.22	93.01	14.79	118.91
	Nos Capacity Enhancement of DT	No.	1,240	1,225	-15	98.79
12	New LT Lines	Km	727.96	456.91	-271.05	62.77
13	LT Line Reconductoring	Km	6,744.50	5,625.33	-1,119.17	83.41
14	Boundary Meter	No.	95	72	-23	75.79
15	Feeder Meters/DT Meters	No.	4,318	6810	-3,637	15.77

Sl. No.	Components	Unit	Sanctioned quantity	Executed quantity	Shortfall (-) / Excess	Percentage of achievement against sanctioned quantity
16	Consumer Meter	No.	8,99,681	6,04,183	-2,95,498	67.16
17	Solar Panels	KWp	7,142.00	8,318.00	1,176.00	116.47
18	RMU etc	Lot	10	489	479	4890.00
19	Others	₹ lakh	1,447.47	770.98	-676.49	53.26
20*	R&M of 33/11 KV S/S	No.	1	-	-1	0.00
21*	Capacitor Bank	MVAr	1.00	-	-1.00	0.00
22*	Smart Meter	No.	12,760	-	-12,760	0.00
23*	Pre Paid Meter	No.	9,126	-	-9,126	0.00

* Works not taken up by ESCOMs

BESCOM replied that during initial survey (January-March 2015), 10 RMUs were proposed in BMAZ Area to replace existing faulty RMU's. But, during the field survey conducted in December 2015 to February 2016 by PMA and Field officials, UG cables were proposed in town limits and 703.48 kms of UG cable work was executed for which 455 Nos of RMUs were installed for converting the existing radial distribution system into Ring main distribution system in order to provide reliable un-interrupted power supply to consumers.

3.4.1 Variation in executed quantities against sanctioned/DPR quantities

The ESCOMs executed 1,923.28 kms of High Tension (HT) feeders³⁸, 6,082.24 kms of Low Tension (LT) feeders, 1,300.12 kms of Under Ground (UG) cable, 2,067.75 km of LT Arial Bunched (AB) cable, 5,124 Nos. Transformers and installed Solar Panels of 8,318 kWp capacity.

Audit noticed that the quantities executed varied from the sanctioned quantities as per DPR approved by PFC in major items of work. The same is shown in **Appendix - 6**.

The variation in the actual quantities executed over DPR/ sanctioned quantity ranged from (-) 21.69 per cent for HT Feeders, (-) 18.61 per cent for LT Feeders, (-) 10.84 per cent for AB Cables, 36.75 per cent for UG Cable, (-) 1.58 per cent for Transformer and (-) 32.84 per cent for Consumer metering. BESCOM executed 954.1 kms of UG cable work as against 577.6 kms representing 65.18 per cent variation.

Instances of variations in quantities of materials and consequent variations in costs observed in sampled Divisions are detailed below:

- In Operation and Maintenance (O&M) Circle of CESC, Mandya, there were variations in supply of 88 materials and variations in 66 erection works. Further, there was supply of 12 items and erection of 53 items which were not included in the Detailed Work Award (DWA)³⁹, resulting in an increase of ₹ 3.39 crore over the DWA cost.

³⁸ 11kV feeder (1858.41 km) +33kV feeders (64.87 km).

³⁹ As against the DWA cost of ₹ 37.94 crore.

In the case of RCC nine meters poles, as against the DWA quantity of 1,486 poles valuing ₹ 1.19 crore, 3,132 poles valuing ₹ 2.50 crore were used for HT and LT AB cable works in Maddur Town under O&M Circle Mandya. The extent of variation of 110.77 *per cent* over the estimated quantity of RCC 9 meter poles was attributed to more cutouts on LT line and replacement of damaged and deteriorated poles.

- There were instances of execution of work of HT and LT lines which were not included in DWA in Maddur Town of Mandya Circle of CESC, resulting in increased use of ACSR⁴⁰ rabbit conductor. However, for Mandya Circle as a whole, there was reduction in utilization of ACSR rabbit conductor by 547.13 kms, resulting in reduction in cost to the extent of ₹ 2.47 crore.
- As per DWA, in Chamarajanagar of Kodagu Circle of CESC, the value of work awarded was ₹ 39.09 crore, whereas the value of works executed was ₹ 29.21 crore resulting in savings of ₹ 9.88 crore (25.28 *per cent*). The main reason attributed to savings was non-requirement of 11 kV reconductoring works owing to changed site conditions. Also, supply (₹ 0.55 crore) and erection works (₹ 0.65 crore) were carried out, which were not envisaged during the issue of DWA.

CESC replied (October 2024) that due to field requirements/corridor/ Right of way (ROW) issues/re-routing/local issues, the quantity of materials awarded reduced/ increased. CESC also stated that the same was reported to SLDC and PFC and all grants were received. The reply clearly indicated that planning was deficient and that CESC did not conduct proper surveys, resulting in incorrect quantities in the estimates.

The ESCOM-wise extent of variations to overall executed quantity against sanctioned quantity are detailed in **Appendix - 6**.

In the exit conference, MD BESCOM stated there was a considerable gap in time between announcement of the Scheme and its implementation *i.e.* The Scheme OM was issued in 2014, Need Assessment Document was prepared and DPR approved in 2015, tenders were called in 2017 and works were executed in 2019. Since electricity sector was dynamic in nature, the time gap resulted in some emergent work executions that resulted in differential quantities. The statement confirms that ESCOMs have taken two years to tender the works after approval of DPR.

3.4.2 Dropping of planned works

BESCOM and MESCOM dropped works duly approved by PFC (after preparation of DPRs) by citing right of way issues, space constraints, local constraints and non-receipt of permission from local authorities, execution of

⁴⁰ Aluminium Conductor Steel Reinforced (ACSR) conductors used for overhead applications.

works outside the Scheme *etc.* Audit observed 14 instances⁴¹ of such dropped works in selected Divisions of BESCOM (₹ 13.90 crore) and MESCOM (₹ 10.69 crore). Further details are given in **Appendix – 7**. Two instances are given below:

BESCOM: Twenty six planned works of installation of distribution transformers and drawing UG cables in Davangere division were dropped due to right of way issues, space constraints, non-receipt of permission from local authorities and transformers installed under other works.

MESCOM: Planned work of reconductoring of single circuit 11 kV line using coyote and rabbit conductor (Mangaluru Division 1 and 2) was dropped as it was already executed during 2013-17 outside the scheme.

Since these works were identified and selected on priority basis, dropping these works resulted in non-achievement of envisaged benefits apart from delay in completion. This indicated that surveys conducted by these ESCOMs were inadequate and that the DPRs were prepared without due care. Though there was no financial impact, the works planned could not be executed due to improper survey.

BESCOM and MESCOM replied that the works were dropped owing to the reasons mentioned by audit.

3.5 Award of contracts in violation of KTPP Act and Rules

Audit observed that the ESCOMs did not adhere to the provisions of Karnataka Transparency in Public Procurement (KTPP) Act, 1999 and Rules by providing insufficient time to prospective bidders for submission of bids and accepting tenders at high tender premium as discussed in the following paragraphs.

3.5.1 Insufficient time given for submission of bids

Rule 17 (b) of Karnataka Transparency in Public Procurement (KTPP Rules), 2000 stipulated a minimum time of sixty days from NIT⁴² to be given for submission of bids for tenders in excess of rupees two crore in value. Any reduction in the time stipulated had to be authorised by an authority superior to the tender inviting authority for reasons to be recorded in writing.

Test check of tenders invited in HESCOM and GESCOM revealed that 15 to 54 days only were allowed for submission of tenders exceeding rupees two crore in value⁴³. Further, the reduction in the time stipulated for submission of tenders was authorised with no recorded reasons.

⁴¹ Bangalore Metro Rail Corporation Limited did not give permission to lay cable beneath the metro pillars and station in Indiranagar Division of BESCOM. Permission was not given by local authority as the road was asphalted newly in Indiranagar Division of BESCOM. Reconductoring of single circuit 11 kV using coyote and rabbit conductor (Mangaluru Division 1 and 2).

⁴² Notice inviting tender.

⁴³ 7 system strengthening works and 2 metering works in HESCOM; 2 system strengthening works in GESCOM.

HESCOM replied (October 2024) that due to change in mode of execution and revision of Standard Bidding Documents (SBD) by REC/PFC, there was delay in awarding of works which necessitated calling short term tenders (45 days for 1st Call tenders and 15 days for 2nd Call tenders⁴⁴), to complete the scheme within timeline fixed by MoP/PFC. GESCOM also stated similar reasons. The reply confirms the audit findings.

3.5.2 Award of works at high tender premium

The Karnataka Transparency in Public Procurement (KTPP) Act, 1999 and the circular issued (3 December 2002) thereunder allows negotiations solely for the purpose of obtaining lower prices and only in exceptional circumstances, such as lack of competition (less than three bidders), single bid, suspected collusion, or the lowest evaluated responsive bid being substantially above the estimated cost. In such cases, the first choice is rejection of all tenders and re-inviting fresh tenders. The *clause 3.2* of the circular defines a substantially high tender (in case where price adjustment is not provided and updated estimated cost of work of ₹ 50 lakh and above) as one in which the quote is 10 *per cent* above the updated estimate.

Audit observed that the ESCOMS awarded works at costs exceeding the estimated value in the range of 13.93 *per cent* to 34.21 *per cent* for system strengthening works, as detailed in **Appendix – 8** and summarised below:

Table No. 3.5: Details of tenders accepted at substantially high rates by ESCOMs in the sampled Divisions

(₹ in crore)						
Sl. No.	Particulars	BESCOM	CESC	GESCOM	HESCOM	MESCOM
1	Number of tenders	5	4	5	7	7
2	Total Estimated cost	232.90	110.51	135.20	92.70	129.83
3	Total Quoted price	282.73	143.17	168.96	113.19	160.62
4	Total Awarded Price	282.94	141.30	168.96	113.19	156.14
5	Awarded Price higher than Estimated cost	50.04	30.79	33.76	20.49	26.31
6	Range of percentage of awarded cost over the estimated cost (%)	18.76 to 26.8	19.81 to 34.21	21.61 to 28.49	18.86 to 23.33	13.93 to 24.99

Source: Data furnished by ESCOMs.

The ESCOMS awarded works of a similar nature in different circles at varying tender premiums and were not successful in getting the quoted price reduced. Further, resultant single tenders with high premiums were accepted instead of re-tendering by GESCOM (for all the five tenders), MESCOM (two out of five tenders), HESCOM (four out of Seven tenders) and CESC (two out of four tenders).

⁴⁴ Hubballi, Vijayapura and Bagalkote circles.

The ESCOMs responded (October 2024) that tenders were invited according to Standard Bidding Documents (SBD) and were issued after Board approvals. In some cases, works were awarded at high premiums, as low rates could not be secured even after re-calling of tenders. Reply is not acceptable as ESCOMs not only violated KTPP Act (by awarding works at higher tender premium), but also did not adhere to SBD and put in restrictive tender conditions.

Recommendation:

3. The Government of Karnataka may ensure that ESCOMs may follow time frames as per KTPP Act, 1999 and Rules, 2000 to ensure adequate competition and to allow market discovery for most economical rates.

3.6 Installation of GIS station

HESCOM planned (March 2018) construction of a 2×8 mVA, 33/11 kV Gas Insulated Substation (GIS) under IPDS along with associated 33 KV lines near Hosur, Hubballi City, Dharwad District, for which DWA was issued in October 2018 with a stipulation for completion of work within a period of 12 months from date of Letter of Intent (September 2018) or from the date of handing over of land, whichever was later. Though the materials were procured and Programme Evaluation and Review Technique (PERT) chart was prepared (September 2018), the work could not be taken up due to resistance from local residents.

In June 2020, the contractor raised the issue of non-allotment of land by HESCOM. Since the contractor had already placed the order for materials, it was decided to relocate the project to HESCOM's leasehold land (2,500 Square meter - 26,910 square feet) at Karnataka Industrial Area Development Board (KIADB), Rayapura Industrial area, Dharwad and the contractor was instructed to commence the work in June 2020. The Rayapura Industrial area site was handed over to the contractor in September 2020 and the substation was commissioned in December 2021 at a cost of ₹ 19.20 crore.

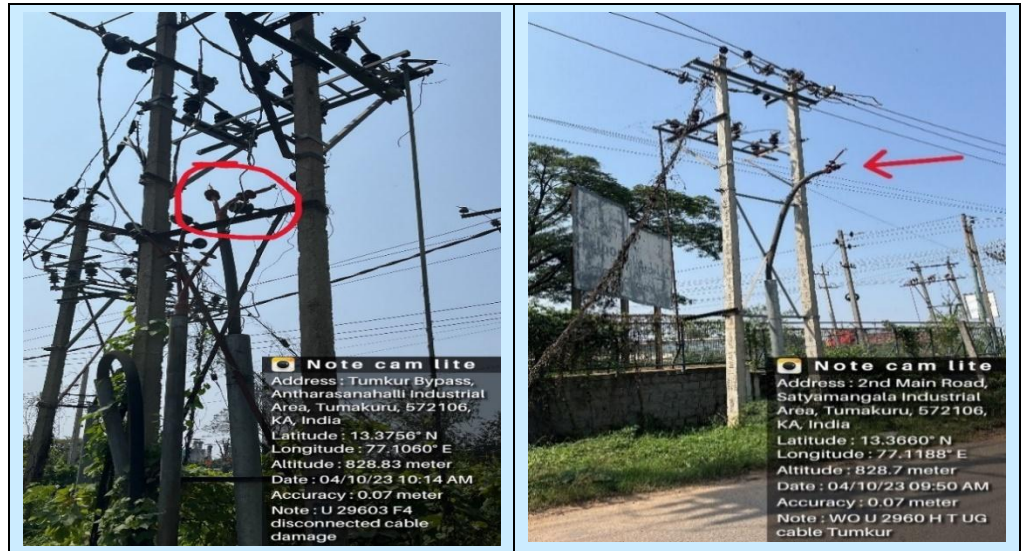
As HESCOM could not award the contract in time for the work to be finished by 15 August 2018, the work was considered closed or cancelled in accordance with PFC's approval for the work. This meant that the planned work with high upfront cost was completed with a delay of two years using own funds and HESCOM lost opportunity to receive grant for the same under IPDS.

HESCOM replied (October 2024) that the residents opposed the setting up of station in its own land and the issue was brought to the notice (February 2019) of local MLA, Mayor and Commissioner. HESCOM also stated that no alternative land could be identified and that the amount which was sanctioned for this work was utilised to carry out other necessary works. Thus, though HESCOM utilised sanctioned amount, the work planned under IPDS could not be taken up as it could not provide land for a DWA issued during October 2018 till June 2020 and was completed by utilising own funds.

3.7 Disconnected UG cables

BESCOM undertook nine works of laying (18.41 km) UG cables (feeders) in Tumkur, during 2018 and 2019, under IPDS. These UG cable feeders were disconnected and power was drawn through overhead feeders rendering the works undertaken under IPDS at a cost of ₹ 6.01 crore infructuous, within a period of four years. As per BESCOMs technical specifications, the life span of UG cables was 40 years.

Joint Physical Verification (February 2024) with Technical Consultant and BESCOM officials also confirmed that these UG cable feeders were disconnected and power was drawn through overhead feeders.



Picture No. 3.1: Disconnected IPDS UG Cables in Tumkur O&M Division, BESCOM.

BESCOM replied (October 2024) that one feeder cable was damaged in October 2023 and power supply was arranged through overhead lines and subsequently power supply was restored through the UG cable.

3.8 Metering

The metering component under IPDS included installation of suitable static meters for feeders, distribution transformers and all categories of consumers with unmetered connections, replacement of faulty meters and electro-mechanical meters, Automatic Meter Reading (AMR) for feeders, distribution transformers and high load consumers, etc.

3.8.1 Non-integration of modems for DTC meters with Data Servers

In CESC, short term tender for metering works under IPDS was invited (August 2017) and the work was awarded (October 2017) to the lowest tenderer M/s Santhosh Electricals Mysuru (contractor) at a negotiated price of ₹ 25.48 crore (September 2017). The work involved replacement of Non-DLMS (Device Language Message Specification) meters of DTCs with DLMS meters along with communication infrastructure as per the guidelines of MOP, GoI. The contractor had quoted ₹ 15,000 per modem (GPRS modem with all accessories) for supply and ₹ 3,000 per modem for erection. As per DWA, 438

DTCs were to be installed with GPRS modem. Against this, the contractor supplied and installed 561 modems and SIMs to DTCs under CESC.

Audit observed that, *clause 8 (a) and (b)* of DWA stipulated the contractor to supply three handheld Units (ICS compatible) (HHUs) used for generating energy consumption bills free of cost along with software per O & M division besides providing training for the use of software. The contractor, however, neither provided HHUs along with software to any of the O & M Divisions nor imparted training to use the software as per the tender conditions.

In the absence of the software, none of the 561 modems installed were communicating and they were not integrated with the servers of CESC.

The CESC stated (October 2024) that M-DAS communication (Metering and Data Acquisition Systems) to fetch data from modems was to be taken up in IT Phase-II, which had not been completed and action would be taken to establish communication after Go-live of MDM application. Since the contractor failed to supply HHUs, show cause notice had been issued. Even though work was completed (December 2019) at a cost of ₹ 1.01 crore (561 DTCs × ₹ 18,000), the assets were not put to use (October 2024), resulting in unfruitful expenditure.

3.8.2 Non achievement of objectives

For facilitating Automated meter Reading (AMR) for high load LT consumers, BESCOM issued (February 2018) DWA under IPDS for supply, installation, commissioning, integration and maintenance of 12,373 modems and pushing of data to the existing Metering and Data Acquisition System⁴⁵ (M-DAS), to M/s Analogics Tech India Ltd., Hyderabad on total turnkey basis for a period of five years. The agency supplied and installed 12,373 modems (March 2019) and was paid only ₹ 4.75 crore (against ₹ 10.41 crore for completed quantity) as the Company deducted penalty and made part payment for non-supply and delayed timely installation of the modems.

The status of meters installed for high load LT3 and LT5 installations and associated modems at eight selected Divisions of BESCOM were as follows:

Table No. 3.6: Status of AMR meters installed under IPDS in eight selected Divisions

Sl. No.	Division	No. of high load LT 3 and LT 5 installations with load above 40 HP as in June 2023	No. of AMR meters installed under IPDS	No. of modems installed under IPDS	No. of communicating AMR meters as in June 2023	Percentage of modems communicating
1	HSR layout	1,508	274	1,168	1,168	100
2	Koramangala	605	0	193	193	100
3	Indiaranagar	1,189	521	844	301	35.66
4	Chitradurga	184	0	74	0	0
5	Davangere	310	36	67	49	75.13
6	Tumkur	119	119	119	119	100
7	Kengeri	2,014	839	839	214	25.51
8	Rajajinagar	2,080	301	1,055	757	71.75
	Total	8,009	2,090	4,359	2,801	64.25

Source: Data furnished by BESCOM.

⁴⁵ By tying up with local service provider M/s Infosys Technologies and M/s N Soft for GPRS data communication.

As seen, modems were not fixed to all LT 3 and LT5 installations with AMR meters and some of the modems were not communicating. BESCOM has not provided AMR meters and modems to the incremental LT3 and LT5 consumers with load above 40 HP subsequent to implementation of IPDS, which indicated that there was no continuity to the process initiated under IPDS.

BESCOM stated (October 2024) that integration of modems was delayed due to communication issues and incremental work was not considered due to budget constraints and advancement of technology. Further, BESCOM stated that currently, the communication of AMR meters ranged from 79 *per cent* to 92 *per cent*. The reply reiterates that the objective of the scheme was not achieved, considering fitment of AMR meters to only a portion of the eligible consumers and the fact that 100 *per cent* communication has not been achieved in five out of eight divisions where the AMR meters have been installed.

3.9 Solar Component

Under IPDS, all the ESCOMs were supposed to provide Solar panels and install them on roof-tops of Government buildings. Audit observed the following issues in implementation of Solar component under IPDS.

3.9.1 Restrictive tender conditions

CESC called short term tender (February 2018) for supply, installation, testing and commissioning of grid connected additional Solar roof top systems on turnkey basis with five years maintenance with an estimated cost of ₹ 7.78 crore for a capacity of 1,112 kWp. The pre-qualification criteria stipulated experience of successful completion of grid connected Solar power work under IPDS scheme having a cumulative capacity of 1,000 kWp. As only one tender was called previously under IPDS and only one agency had qualified earlier with an executed quantity of 1,715 kWp, the tender condition could be satisfied by only one vendor. Audit observed that this condition prevented the participation of other bidders and favoured one particular bidder.

M/s Naviya Technologies was awarded (May 2018) the work at a negotiated price of ₹ 8.29 crore (6.48 *per cent* above the amount put to tender) with completion date of nine months from DWA (by February 2019). The contractor was also unable to complete the work⁴⁶.

CESC stated (October 2024) that it insisted for experience in IPDS so as to get the participation from the experienced system integrators as the time left for implementation in additional SRTPV tender was just 12-13 months. Further, this clause was not restrictive as the experience of IPDS anywhere in India was sought. The reply is not acceptable, as all ESCOMs in the country did not take up Solar component. Further, since IPDS work was going on in all places, the

⁴⁶ Against the work order quantity of 1,112 KWp of Solar plants, 1,091 KWp were installed. As against work order value of ₹ 8.29 crore, works amounting to ₹ 7.72 crore only was executed.

number of vendors who would have completed Solar works under IPDS of the specified quantum would have been low.

3.9.2 Preparation of estimates based on pre revised rates

As per tariff order for the financial year 2017-18 approved (May 2016) by Karnataka Electricity Regulatory Commission (KERC), the capital cost for capacity of small Solar plant from 1 to 10 kW was fixed at ₹ 75,000 per kW with O & M charges at one *per cent* of the capital cost with an increase of 5.72 *per cent* annually. Accordingly, the estimate should have been prepared at ₹ 75,000 plus 1 *per cent* O & M charges amounting to ₹ 750 per kW with an annual increase of five *per cent* i.e., ₹ 37.5 per kW every year totalling to ₹ 75,785.50 per kW. However, CESC prepared estimate at ₹ 90,000 based on pre-revised (October 2013 for the years 2014-18) capital cost, resulting in increase in estimates by ₹ 2.44 crore⁴⁷. The tender was finally awarded (March 2017) at ₹ 88,300 per kWp (₹ 15.14 crore /1,715 kWp). This rate was higher when compared to the rate at which CESC had awarded similar works to the same agency (in September 2016 at ₹ 81,733.47 per kWp). Thus, CESC awarded the Solar works under IPDS at higher rates to the lone bidder, who refused to reduce rates.

CESC replied (October 2024) that work was awarded considering the rate for Solar Roof Top Photovoltaic Cells as per KERC determined capital cost of ₹ 0.90 lakh per kW as per generic tariff order (October 2013). The reply is not acceptable, as approval for placing order based on the high rates was given by Board in September 2016, after the latest KERC approved rates were published in May 2016. CESC should have taken steps to get the rates reduced in accordance with KERC approved rates.

3.9.3 Non-completion of Solar component

The details of DPR cost, DWA capacity of Solar panels issued, number of buildings proposed and completed along with capacity and amount spent by ESCOMs are detailed below:

Table No. 3.7: Details of Solar panels commissioned on Government buildings by ESCOMs

(₹ in crore)

Sl. No.	ESCOM	DWA capacity (kWp)	DWA amount	Buildings proposed	Buildings completed	Actual capacity completed (kWp)	Amount spent	Short fall (kWp)	Delay
1	BESCOM	1,125	7.85	82	51	673.5	3.40	451.5	DWA awarded for 615 kWp was short closed.
2	CESC	1,715	15.14	343	343	1,715	15.14	0	
		1,112	8.29	512	431	1,091	7.77	21	
3	MESCOM	1,671	11.74	68	56	1,351.44	8.35	319.56	10 to 16 months

Source: Compiled by Audit from the data furnished by ESCOMs.

⁴⁷ ₹ 15.44 crore – ₹ 13.00 crore (₹ 75,785 × 1,715 kwp).

There were variations in actual capacity completed in comparison with DWA capacity due to issue of DWAs to agencies without detailed survey of Government buildings and not obtaining prior permission from building owners/ heads of departments in advance. Many of the buildings identified and included in DWA were found unsuitable for installation of panels since the roofs were inclined, tiled or east/west⁴⁸ facing and some of the building owners did not allow to install Solar panels stating that they were having future plans for expansion of building. This resulted in the need for identification of alternate buildings or cancellation of capacity.

BESCOM and MESCOM could not complete their DWA capacity due to reasons detailed in the following paragraphs:

- BESCOM invited tender (October 2016) in two lots⁴⁹ for ‘Design, Supply, Installation and Commissioning of Solar Roof Top Photovoltaic grid connected power plants on rooftops of various BESCOM/Government/Local Bodies office buildings (under the jurisdiction of BESCOM), including maintenance for a period of five years, under IPDS. Lot 1 (615 kWp) was awarded (September 2017) to M/s PEnA Power Engineering and Automation Limited, Bengaluru (PPEL) at ₹ 4.08 crore and Lot 2 (510 kWp) was awarded to M/s IC India Pvt Limited (ICIL) at ₹ 3.83 crore.

Only 163.5 kWp under Lot 1 was completed by March 2019. The reason for non-completion of remaining capacity (451.5 KWp) was BESCOM’s inability to take action on the detailed survey findings submitted (October 2017) for approval and to take decision (September 2018) on the unsuitable locations⁵⁰ found by PPEL. As IPDS scheme was declared closed (31 March 2019), there was no further progress in installation of Solar panels in the remaining 31 locations of BESCOM.

Thus, BESCOM lost the opportunity to avail grant of ₹ 2.45 crore⁵¹

BESCOM replied (October 2024) that there was change in number of buildings from 40 to 29 and that the proposed capacity was unchanged. However, Audit observed that the proposed capacity was not executed and the reply was silent regarding the issues pointed out by PPEL.

- MESCOM could install Solar panels of 1,351.44 kWp as against the 1,671.00 kWp planned, leaving a gap of 319.56 kWp (19.13 *per cent*). The scheme guidelines required ESCOMs to prepare bankable DPRs based on detailed field surveys. Audit observed that MESCOM did not conduct detailed survey (regarding feasibility in Government buildings)

⁴⁸ With a south-facing roof, Solar panels will produce the maximum amount of energy overall.

⁴⁹ **Lot 1:** covered Bengaluru Metropolitan Area Zone (BMAZ) 1, Bengaluru Rural, Ramanagara and Kolar Circles; **Lot 2:** covered BMAZ 2, Tumkur and Davangere Circles.

⁵⁰ Hosakote, HSR layout and Jayanagar Divisions due to factors such as leakage, presence of shadows, civil work under progress *etc.*

⁵¹ Being 60 *per cent* of ₹ 4.08 crore (as no payments were made to PPEL).

and did not obtain prior permission from building owners / Heads of Departments for installation of Solar panels.

MESCOM stated that (October 2024) that carrying out site surveys and technical feasibility report work was assigned to the Contractor and the contractor found some buildings unsuitable whereas some building owners refused to provide No Objection Certificate.

This indicates that MESCOM did not conduct field surveys to ensure suitability of location, before including the works under IPDS and awarding the works.

3.9.4 Poor performance of Rooftop Solar power plants

Bid documents/DWA/LoI for installation of Solar rooftop panels on Government buildings issued by ESCOMs included a clause wherein the bidder was to guarantee average minimum generation of 4.5 units/kWp/day in a calendar year in BESCOM and GESCOM; and 5 units per kWp per day for a minimum of 300 days in a calendar year; after considering grid loss and weather conditions in CESC, HESCOM and MESCOM. Audit observations on the performance of Solar panels are detailed below:

- As per specification issued by BESCOM, the Solar Photovoltaic modules were to have an efficiency of *more than or equal to 15.2 per cent*, with a degradation allowance of *10 per cent* for 10 years. Review of performance of installations for 2022-23 revealed that efficiency of 49 out of 51 Solar installations of BESCOM ranged between zero and 14.82 per cent⁵² and only two installations had efficiency of 14.82 per cent or above. Hence, 96 per cent of the IPDS Solar installations in BESCOM could not generate energy to the expected levels. A review of generation details revealed that Solar installations at six⁵³ locations were not generating power due to technical issues/ demolition of building etc.
- The generation of power in 23 installations in selected Divisions of CESC was zero units up to 31st March 2023. This highlights poor monitoring which resulted in loss of generation

CESC replied (October 2024) that the meter testing wing of the Company periodically inspects the Solar installations for defects, which identifies and communicates the same to the supplier, who is to rectify them. However, Audit found that generation was low indicating that the periodic inspections were not fruitful in ensuring that the installations were functional.

- In MESCOM, in case of 18 installations selected for inspection, generation of power was extremely low (zero to 50 units) for 1 to 26

⁵² After degradation allowance for three years.

⁵³ Anugodu, Sub division, Davanagere, City sub-Division, Tumkuru, CSD Sub-division office KPTCL building Sira, Sub-division office KPTCL premises, Pavagada and S2 Sub Division, Bengaluru.

months from the date of installation ⁵⁴ to 31st March 2023. The supplier did not rectify the defects immediately and took one to 33 months for rectification of defects, resulting in loss of generation.

MESCOM replied (October 2024) that penalty for not meeting the expected generation would be charged. The proposed action, initiated in response to Audit observations, underscores the scope for enhancing monitoring processes.

- Joint physical verification of 22⁵⁵ Solar installations of GESCOM and 32 Solar installations of HESCOM revealed that both the Companies had poorly maintained Solar power installations on Government buildings under IPDS. Audit noticed instances of removal of panels without intimating GESCOM or HESCOM and missing Solar assets, which resulted in low generation levels. The details of discrepancies observed in GESCOM and HESCOM are detailed in **Appendix - 9**.

HESCOM replied (October 2024) that strict instructions were given to the EEs of O&M divisions to rectify the non-working SRTPVs.

3.9.5 Non-Compliance to Performance Guarantee Parameters

Technical specifications for Solar Rooftop Photovoltaic power plants (Standard Bid Documents (SBD) (Volume - III)), contained stipulations regarding minimum guaranteed life, guaranteed output, Performance Ratio (PR), penalty clause for non-performance, *etc.,*. Audit observed that many of the important technical parameters mentioned in the SBD were not insisted upon by CESC *viz.* obtaining guarantees, inclusion of liquidated damages clause for non-performance, insisting for long term PR values along with the techno commercial bid, inclusion of penalty clauses, *etc.,*. The details of non-compliance of SBD parameters are detailed in **Appendix - 10**.

Recommendations:

- 4. The Government of Karnataka may ensure that comprehensive feasibility surveys are conducted before project execution and may include conditions of standard bid documents in invitation to bids and ensure adherence to the same while executing works.**

⁵⁴ Installed during 2018 and 2019.

⁵⁵ GESCOM – four Divisions-251 kWp installed capacity, HESCOM – seven Divisions-875 kWp installed capacity.

3.10 IT applications and Enterprise Resource Planning under IPDS

The IT Component under IPDS provided for (i) Establishment of Enterprise Resource Planning⁵⁶ (ERP) System and (ii) Incremental upgradation of DC/DRC, additional hardware in towns⁵⁷, GIS survey of assets and integration of DC/DRC. The IT components other than ERP were termed as ‘IT Phase-II’.

Guidelines for project formulation for IT Applications in non-RAPDRP towns and Enterprise Resource Planning (ERP)⁵⁸ stipulated (December 2015) ERP functions of Human Resource Management, Finance and Accounts and Materials (Purchase and Stores).

3.10.1 Non-completion of ERP project in time by BESCO

BESCO proposed implementation of ERP system with Human Resource Management, Finance and Accounts Management and Asset Management modules, for which DPR was prepared and submitted (November 2017) to PFC at a total cost of ₹ 75.76 crore⁵⁹. PFC approved (February 2018) project cost⁶⁰ at ₹ 51.05 crore, with grant component of ₹ 30.89 crore. The approval letter reiterated that the project had to be implemented in accordance with advisory-cum-guiding principles issued by PFC. The project was to be awarded within six months of sanction letter and to be completed within 31 July 2020. The closing date for drawing of grant was 30 July 2021.

3.10.2 Delay in award of works

Sanction for DPR of ERP (with Human Resource Management, Finance and Accounts Management and Asset Management modules) was received in February 2018 and work was to be awarded within six months (as per guidelines); *i.e.* by August 2018. In March 2018, BESCO floated a Request For Proposal for supply, installation, commissioning, implementation and support for the Human Resource Management, Finance and Accounts Management and Asset Management modules, which did not elicit any bids. Subsequent RFP was floated in February 2019 by adding four more modules *i.e.*, Project Management, Quality and Safety, Power Purchase, Document Management System (DMS) and Work flow Management System (WMS) in the tender, with the objective of bringing major back office operations of BESCO under ERP, after a delay of 11 months.

The revised RFP also involved modifying PQR and technical evaluation criteria, including change in technical: financial weightage from 60:40 to 70:30, change in experience requirement from number of users to number of locations

⁵⁶ Enterprise resource planning (ERP) is an integrated software system that helps to run entire business, supporting automation and processes in finance, human resources, manufacturing, supply chain, services, procurement, *etc.*

⁵⁷ like switches, router, meters, modems, SBMs, workstation PCs and printers.

⁵⁸ under IPDS (item 3(c) and (d)).

⁵⁹ ₹ 53.79 crore pertained towards set up cost and ₹ 21.96 crore towards annual maintenance charges, annual technical support and bandwidth cost for five years, to be borne by BESCO as per the scheme guidelines.

⁶⁰ Excluding annual maintenance charges, annual technical support and bandwidth cost for five years.

and change in annual turnover requirement from ₹ 350 crore to 50 *per cent* of amount put to tender, among others

The work was awarded (March 2020) to the lowest bidder M/s. Tech Mahindra Ltd at the negotiated price of ₹ 65.00 crore⁶¹ with pilot-go-live within 12 months (by March 2021) and enterprise-go-live with rollout at identified offices within 20 months (by November 2021).

Thus, it took two years from approval to issue of DWA whereas the guidelines warranted awarding within six months.

BESCOM stated (October 2024) that the delay in issue of tender was due to enforcement of model code of conduct for Lok Sabha elections 2019 and multiple extensions were given (five times) for bid submission dates. After opening the technical bids in June 2019, opening of financial bids, negotiations and getting approval from technical committee and Board of Directors took time. LoI was issued in December 2019 and DWA was issued in March 2020, once the firm had submitted Performance Bank Guarantee. The reply is not acceptable as considerable time was taken to prepare DPR, modify the scope of work and in opening financial bids (opened in August 2019) resulting in delay in award of works. Further, BESCOM could have taken exemption to issue tender from election commission citing limited period for completion of work.

3.10.3 Delay in completion of ERP component

The Monitoring Committee of GoI extended (March 2021) the project completion date to 31 December 2021⁶², along with third party evaluation and financial closure of the project to 31 March 2022⁶³. Considering this, BESCOM amended the DWA in December 2021. The second amendment to the DWA was issued in December 2022⁶⁴, extending the date for rollout of the ERP solution by 31 December 2022 and stabilisation period up to April 2023. It was also decided to levy Liquidated Damages on total contract value as per DWA *clause 11.1(i)*, from the date of default till the actual date of completion of work as per relevant clauses of the DWA.

In the meanwhile, based on certification (February 2022) by third-party inspection agency (M/s. Feedback Infra Private Limited)⁶⁵, PFC approved (May 2022) the ERP project as “completed” with a completion cost of ₹ 30.45 crore and released ₹ 18.42 crore as grant.

Audit observed that ERP implementation was neither complete nor ready for roll out as discussed below.

⁶¹ At 27.33 *per cent* above amount put to tender.

⁶² Against July 2020 as per Sanction letter.

⁶³ Against July 2021 as per Sanction letter.

⁶⁴ Approved by Board of Directors in September 2022.

⁶⁵ Which certified completion on the basis of amended DWA, wherein the work was divided into Phase I and Phase II, for the purpose of showing Phase I as complete.

Table No. 3.8: Details of amendment to DWA

Sl. No.	Work item	Old DWA (March 2020)	1 st Amended DWA (December 2021)	Audit remarks
1	Modules	All modules to be completed by 31 March 2021.	Work divided into Phase-I and Phase-II, stating that three modules (Finance and Accounts, HRMS and Materials) were to be completed in Phase-I by 31 December 2021 and the remaining modules were to be completed in Phase-II by 30 June 2022.	None of the modules were rolled out.
2	Pilot go-live	After legacy data migration, user acceptance testing must be completed within 12 months in identified pilot offices.	After legacy data migration, user acceptance testing must be completed within November 2021 in identified pilot offices for Phase-I. After legacy data migration, user acceptance testing must be completed within May 2022 in identified pilot offices for Phase-II.	As the modules were not rolled out, legacy data migration and user acceptance testing were also delayed.
3	Enterprise go-live	After rolling out in identified offices (within 20 months) other than pilot offices, stabilization and final acceptance is to be given by BESCOM.	Phase-I - Training and rolling out in identified offices within December 2021. Phase-II – Training and rolling out in identified offices other than pilot offices within June 2022 and stabilization and final acceptance by BESCOM.	The enterprise go-live also got delayed.

Source: Compiled by Audit from the data furnished by BESCOM

The main implementation period overlapped with the COVID-19 pandemic, which caused protracted delays and non-implementation of ERP. Consequently, the Company was unable to achieve its objective of implementation of an ERP system for its back-office operations for scalable and standardised business processes across the Company, despite spending ₹ 42.04 crore⁶⁶.

BESCOM while confirming (October 2024) the facts stated that modules like HRMS, Power Purchase, Finance and Accounts etc. required rigorous validations, before roll out and that the individual modules were being validated with the existing methodology in place and that benefits would be realized once the modules were fully rolled out with complete end-to-end integration. This confirms the Audit contention that the project component was declared complete in December 2021 without fully functional modules, only for obtaining grants.

3.11 IT Phase- II

The ESCOMs in the State were already using the IT system⁶⁷ implemented under RAPDRP Scheme since March 2016, which covered 98 towns across ESCOMs. This system was built to have provision in the design of Data Center (DC) / Disaster recovery Center (DRC) for meeting the requirement of entire State. IPDS envisaged extension of the existing IT System to 124 new towns added under the Scheme. Hence, to extend the coverage to additional towns, only incremental expenditure for expansion of the IT System was envisaged.

⁶⁶ up to 30 June 2023.

⁶⁷ Implemented by M/s Infosys Ltd.

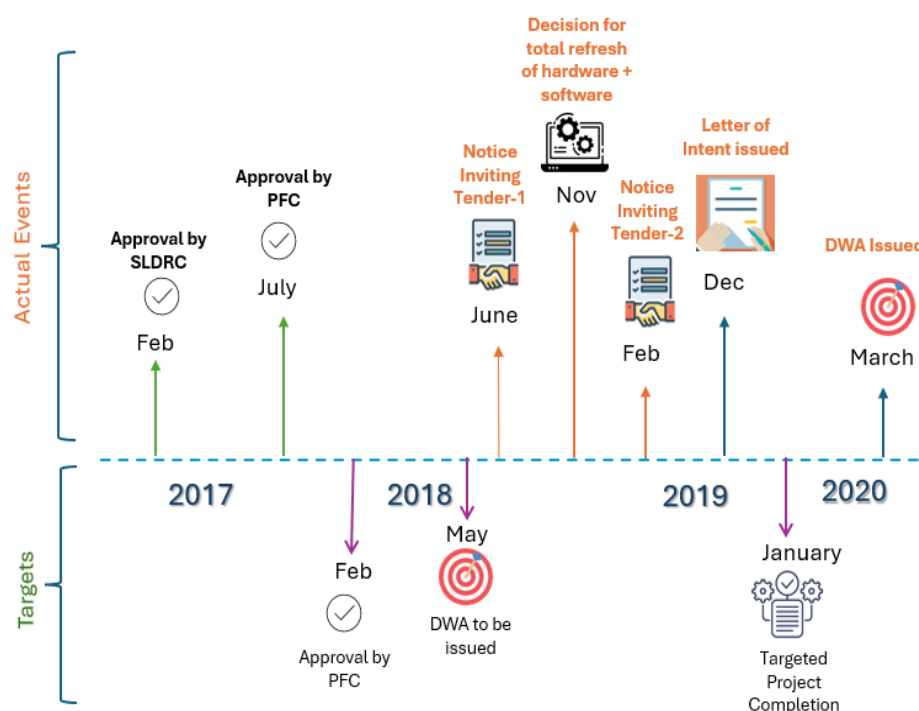
The main components envisaged were incremental cost for DC/DRC for all ESCOMs, hardware costs, implementation costs and GIS survey costs. The IT Phase-II also included IT Infrastructure⁶⁸ and GIS Survey in IPDS Towns. The Audit observation on the implementation of IT Phase-II are detailed in the following paragraphs:

3.11.1 Data Centre and Disaster Recovery Centre

State Level Distribution Reforms Committee (SLDRC) approved (February 2017) DPRs amounting to ₹ 103.08 crore for IT enablement under IPDS (IT Phase-II) in the State for submission to PFC. Of this, ₹ 71.79 crore pertained to BESCOM (including ₹ 63.55 crore for incremental cost for Data Centre/Disaster Recovery Centre to be implemented by BESCOM on behalf of all ESCOMs). Against this, PFC approved (July 2017) ₹ 33.93 crore⁶⁹ as cost for IT enablement. As per sanction, the work was to be awarded within 3 months from date of approval and was to be completed by January 2020. Though BESCOM decided to invite tenders on behalf of all ESCOMs for implementing IT enablement under IPDS in October 2017, the work was not complete even as at September 2024.

A brief time-line of activities envisaged and executed under the component is depicted in the chart below:

Chart No. 3.2: Timeline showing Actuals against target in implementation of DC/DRC works



Audit made the following observations on review of execution of the Scheme.

⁶⁸ Like switches, router, meters, modems, SBMs, Workstation PCs, printers and others.

⁶⁹ Grant receivable- ₹ 20.35 crore towards execution (60 per cent); ₹ 0.17 crore (0.5 per cent) towards PMA cost.

3.11.2 Delay in tendering and awarding of works

BESCOM did not anticipate that the existing hardware of DC/ DRC had to be upgraded, at the time of DPR preparation under IPDS in February 2017. After calling tenders for appointment of IT Implementation Agency (ITIA) in March/June 2018 for the initial plan (which included all the components of IT Phase-II⁷⁰ and which could not elicit bids), expert opinion was obtained in October 2018. Considering the appraisal by the existing IT Implementing Agency (ITIA) and technical consultant⁷¹ under RAPDRP⁷², BESCOM decided (November 2018) to go for total refresh⁷³ for DC/DRC. Accordingly, the IT Phase-II cost was re-estimated at ₹ 188.58⁷⁴ crore (November 2017), as against the earlier cost of ₹ 103.08 crore. Further, BESCOM also decided to call tenders for the various components⁷⁵ separately. Fresh tenders for Appointment of System Integrator (SI) for Implementation of “DC-DRC Hardware and Software refresh under IPDS IT Phase-II implementation across all ESCOMs of Karnataka” was issued in February 2019, with tender value of ₹ 130.00 crore. Subsequently, BESCOM extended the date of submission of bids to July 2019, to incorporate modifications/corrections based on issues pointed out by prospective bidders. This increased the tender submission period from 30 days to 148 days. Letter of Intent was issued in December 2019, followed by DWA in March 2020, after the due date for completion as per PFC approval (January 2020). The total DWA cost was ₹172.00 crore, of which ₹ 89.92 crore pertained to implementation and ₹82.08⁷⁶ crore pertained to hosting and maintenance.

BESCOM stated (October 2024) that the delay was due to refusal by RECPDCL to take up PMA work for IT component, which resulted in calling tender for PMA for IT component in September 2017. The Company also stated that bid was dropped in October 2017 due to receipt of single bid, owing to which it was decided to go ahead without PMA. The reply is not acceptable, as there were significant delays subsequent to October 2018, as elucidated in the *previous paragraph 3.11.1*.

⁷⁰ ITIA was required to propose hardware required for existing as well as new load envisaged, propose new license requirements, upgrading of software, supply and installation of hardware for BESCOM DC, setting up of DRC on cloud, supply and installation of field infrastructure, GIS survey of field assets and providing facility management services for five years.

⁷¹ Consultant, M/s International Institute of Information Technology, Bengaluru opined that the existing RAPDRP hardware had reached end of life and support and the infrastructure was full, limiting scope of expansion. The OEMs of software being used recommended the version being at least N-1 to provide appropriate support.

⁷² Infosys Technologies Limited.

⁷³ Total refresh components:

- a. **Hardware Refresh:** Complete set of new servers, networking and other hardware to be supplied/installed/commissioned replacing the existing infrastructure.
- b. **Software refresh:** Upgradation of the existing software products or replace with any other suitable software.

⁷⁴ DC-DRC infra component value was ₹ 98.00 crore, FMS- ₹ 16 crore. Total estimate for DC-DRC - ₹ 114 crore.

⁷⁵ Other components included– IPDS towns IT infrastructure (switches, routers, spot billing machines, workstations *etc.*), IPDS towns GIS survey, Fixing meters and modems to IPDS towns *etc.*

⁷⁶ Revenue expenditure to be met by ESCOMs - not eligible for grant.

3.11.3 Non-completion of works and non-achievement of objectives

The work was to be implemented within 24 months from issue of DWA (March 2020). An amendment to DWA was issued (June 2021) considering the impact of COVID-19 pandemic, wherein the start date was changed to July 2020, thereby extending the scheduled date of completion for IPDS towns to December 2021 and RAPDRP towns to July 2022.

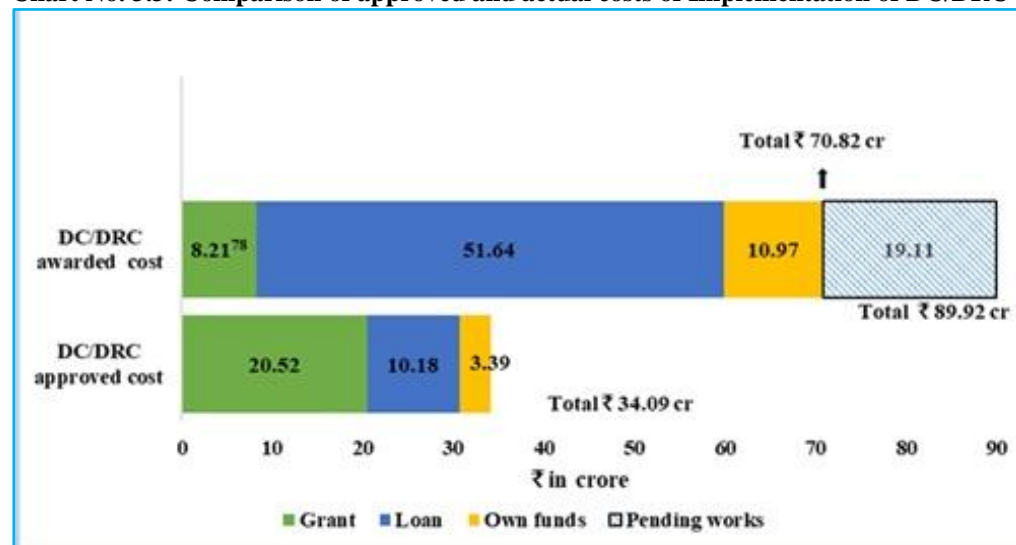
For the purpose of getting grants from PFC, BESCOM declared the work (March 2022) as “complete” in December 2021. However, Audit observed that the work was not yet complete (May 2024). The delay was attributed to lack of support from the proposed Original Equipment Manufacturer⁷⁷ for supply of software components. Though BESCOM spent ₹ 70.82 crore (September 2024) on the work it has not derived any benefit from the expenditure and while DWA contained provision for levying liquidated damages for non-completion of work, BESCOM did not levy any penalty on M/s Infinite Computers.

BESCOM replied (October 2024) that a penalty resolution committee was constituted in May 2023 to deliberate and finalise liquidated damages. BESCOM also stated that recovery of liquidated damages would be effected based on the decision of the committee and approval of Board of Directors.

3.11.4 Increase in costs and need for additional loan

BESCOM did not conduct any study to evaluate feasibility of implementation of incremental IT enablement of IPDS towns as envisaged in the guidelines. This resulted in preparation of an initial DPR without DC-DRC refresh. The revised DPR cost which included total refresh of DC-DRC implementation was higher and in order to meet the financial obligation, BESCOM had to take loans, over and above the PFC sanctioned loan component. A comparison of approved cost of implementation of DC/DRC and the awarded cost is shown in chart below.

Chart No. 3.3: Comparison of approved and actual costs of Implementation of DC/DRC



⁷⁷ M/s. Fluentgrid; It was later on changed to M/s. Oracle at the request of the contractor.

⁷⁸ Grants actually received, excluding that adjusted against RAPDRP.

3.11.5 Additional expenditure on co-hosting charges

The IPDS guidelines enabled subsuming the existing scheme of RAPDRP in IPDS and continuing it as a separate component of IPDS for IT enablement of distribution sector. Under RAPDRP, BESCOM had a co-hosting⁷⁹ facility for DC in Bengaluru with M/s Sify Infinite Spaces Ltd (operational from March 2011). The DRC was in Chennai and was co-hosted with M/s Nxtra Data Ltd (operational from October 2011). On implementation of IPDS, the DC had to be housed in BESCOM building in Bengaluru and DRC had to be hosted in cloud (approved by Ministry of Electronics and Information Technology - MEITY). The co-hosting contracts for DC-DRC and Facility Management Service (FMS)⁸⁰ under RAPDRP were to be terminated after commissioning of DC-DRC under IPDS.

Due to non-completion of DC work within stipulated time (July 2022), co-hosting facility contract and FMS contract for RAPDRP DC were renewed with the existing contractors, incurring additional expenditure as detailed below:

Table No. 3.9: Extra expenditure incurred on co-hosting of DC/DRC and FMS contracts

Sl. No.	Agency	Type of Contract	Period of contract (contracts awarded for period overlapping with completion date of IPDS and beyond)	Cost (₹ in crore)	Period beyond scheduled IPDS DC-DRC completion (July 2022)	Cost for the period beyond scheduled IPDS DC-DRC completion (₹ in crore) ⁸¹
1	M/s. Infinite Computer Solutions	Facility Management Services	01.05.2022 to 31.10.2022	10.78	01.08.2022 to 31.10.2022	5.39
			01.11.2022 to 31.03.2023	8.98	01.11.2022 to 31.03.2023	8.98
2	M/s. Sify Infinite Spaces Ltd	Data Centre	16.12.2021 to 15.12.2022	3.50	01.08.2022 to 15.12.2022	1.30
			16.12.2022 to 15.06.2023	1.75	16.12.2022 to 15.06.2023	1.75
	Total					17.42

Source: Compiled by Audit from data furnished by BESCOM.

Thus, non-completion of the work of DC/DRC work under IPDS resulted in additional expenditure of ₹ 17.42 crore.

Incidentally, the Facility Management Services for the RAPDRP system (existing system) was being done by M/s. Infinite Computer Solutions, who was also awarded the DC-DRC refresh under IPDS. Hence delay in completion of DC-DRC meant continuation of the old system and consequent payment to

⁷⁹ Co-hosting: Providing real estate area, continuous power supply, Setting and Maintaining Building Management System and security, whereas the servers are owned by BESCOM.

⁸⁰ As per DWA, Facility Management Service provider has to do ensure smooth running of all IT applications besides trouble shooting of IT Hardware equipment like servers, network and software components.

⁸¹ Proportionate cost from 1 August 2022, the date from which the new Data Centre and Disaster Recovery Centre were scheduled to be operational.

M/s Infinite Computer Solutions for FMS of the same, resulting unfair advantage to the agency.

Further, Audit observed that M/s Infinite Computer Solutions had included annual FMS cost as ₹ 3.80 crore per annum for DC-DRC under IPDS. This was much lesser than the FMS cost of the old system⁸², which had to be continued beyond July 2022, in the absence of refreshed DC/DRC.

BESCOM stated that the IT Applications were rolled out from HSR data centre on 26 November 2023. The upgraded versions of the main modules were rolled out on 20 March 2024 and the contract with Sify for Co-hosting was terminated in March 2024. Though the co-hosting services were terminated in March 2024, the Company incurred extra expenditure as mentioned above due to non-completion of IT Phase-II works in time.

3.11.6 Non-utilisation of GIS data due to delay in implementation of DC/DRC

One of the components of IT Phase-II was Global Positioning System (GPS) based Geographical Information System (GIS) survey of assets and integration of same with DC/DRC. LoI was issued by BESCOM, on behalf of all ESCOMs during September 2019 for the work of GIS based asset mapping, survey and Digitisation and Integration of Consumer indexing data in 124 IPDS towns to M/s. CyberSwift Infotech Pvt. Ltd., Kolkata at ₹ 5.69 crore. The respective ESCOMs issued separate DWA to the agency during March 2020 and ₹ 3.55 crore was paid to the agency as on May 2023. As the DC/DRC was incomplete, the GIS data generated by M/s. CyberSwift could not be put to use (September 2024).

BESCOM replied (October 2024) that the applications including GIS would be rolled out soon.

3.11.7 Installation of Modems to meters

One of the components of IT Phase-II also included the work of fixing of modems to meters of HT consumers, DTCs⁸³ and boundary meters. BESCOM invited (June 2018) short term tender on behalf of other four ESCOMs⁸⁴ for all IT Phase-II works. As there was no response, revised tender (February 2020) was called for supply, installation, solution engineering, commissioning, and maintenance of modems for HT/Boundary Meters /DTCs/ Feeder installations in IPDS towns (104 towns excluding BESCOM) of the State at ₹ 6.05 crore. The work was awarded (March 2020) to lone bidder M/s. Analogics Tech India Ltd, Hyderabad at ₹ 5.96 crore for total quantity of 6,406⁸⁵ modems. The DWA provided that the work was to be completed in nine months and maintenance period of 5 years would be from the date of Go-live declared by BESCOM.

⁸² ₹ 19.76 crore for eleven months, as can be seen from Sl.no.1 of table 3.9.

⁸³ was included and approved by PFC (July 2017).

⁸⁴ CESC, GESCOM, HESCOM and MESCOM.

⁸⁵ 1,882 for CESC, 1,397 for GESCOM, 1,310 for HESCOM and 1,817 for MESCOM.

As of December 2021 (extended date for completion), M/s. Analogics Tech India Ltd, Hyderabad had supplied only 654⁸⁶ modems to ESCOMs.

MESCOM (December 2021) and CESC (January 2022) had requested for short closure of the work under IPDS IT Phase-II, citing the implementation of smart meters under the upcoming Revamped Distribution Sector Scheme (RDSS). Accordingly, the State Level Distribution Reforms Committee (SLDRC) accepted (March 2022) the same. A revised DWA was issued (March 2022) limiting the scope of work to 654 modems already supplied.

Audit observed the following:

- *Clause 6* of DWA stipulated the project implementation period as 9 months from the date of intimation by BESCOM and maintenance period of 5 years from the date of Go Live declared by BESCOM. Though BESCOM awarded DWA in March 2020, intimation to start the work was issued only in January 2021 resulting in delay of nine months to start the work, which indicated lack of proper planning in implementation of work.
- Though the DPR was approved during July 2017, BESCOM took considerable time of 31 months to award the work, as the Company was unable to crystallise the actual requirements before calling the first tender, resulting in modifications in bid documents and retendering, resulting in only partial implementation of the project within the scheduled completion date.

BESCOM replied (October 2024) that in spite of the delay, the work was under progress and 654 modems were commissioned till December 2021.

Thus, short closure had resulted in foregoing the grant of ₹ 3.21⁸⁷ crore and four ESCOMs paid an amount of ₹ 0.16 crore to contractor after deducting penalty on installation of 654 modems, which also became infructuous. Further, while short closing, SLDRC has considered implementation of smart meters under upcoming Revamped Distribution Sector Scheme, where all DTCs, feeders and consumer meters shall be replaced by smart meters, which would make the remote meter reading with modems redundant. However, the State has not yet decided to implement the scheme.

3.12 Deficiencies in Quality Assurance Mechanism

As per the *scheme guidelines*, the ESCOMs were responsible and accountable for assuring quality in IPDS works and had to formulate a comprehensive Quality Assurance (QA) Plan and Inspection Plan and make it an integral part of the contract agreement with turnkey contractors. The ESCOMs had to ensure that the quality of material/equipment supplied at site and field are in accordance with quality assurance and inspection plan. Further, as per the

⁸⁶ 229 for CESC, Nil for GESCOM, 114 for HESCOM and 311 for MESCOM.

⁸⁷ ₹ 5.96 crore less cost of modems supplied ₹ 0.61 crore × 60 per cent.

Standard Bidding documents of IPDS⁸⁸ and provisions of DWAs, ESCOMs and turnkey contractors had to ensure Quality Assurance checks and 100 *per cent* pre-dispatch inspections of all materials as per approved drawings/ technical specifications/ data sheet/ Guaranteed Technical Parameters/ applicable national and international standards.

Audit observed that ESCOMs did not prepare Comprehensive Quality Assurance plan as required under scheme guidelines. Further, on a review of DWAs issued, Audit observed the following deficiencies in quality assurance mechanism:

- CESC waived (June 2017) pre-despatch inspection for Solar photovoltaic modules valued ₹ 1.29 crore⁸⁹ (out of DWA cost of ₹ 15.14 crore) (48.70 *per cent* of value of materials) supplied by M/s Naviya Technologies, Mumbai (supplier).
- HESCOM accepted 3,364 nos of 250 Wp modules (out of 4,044 nos.) supplied by M/s Pratham Integrated Engineering Solution Pvt. Ltd. Bengaluru, as against the 280 Wp stipulated in the DWA. Further, the Company waived inspection of 2,200 of these 250 Wp (February 2018) modules and 1,300 nos of 320 Wp (July 2018) modules supplied by IC India Pvt. Limited, Bengaluru. While accepting the request for waiver, HESCOM stated that, these materials were inspected at site duly collecting all the warranties/guarantees documents.

Accepting Solar modules which were below the specified capacity and waiver of pre-dispatch inspection with a view to complete the work at the earliest, resulted in compromising on material quality.

CESC replied (October 2024) that it had conducted inspection at factory premises of supplier in June 2017 and the results were found to be satisfactory for optimum generation. The reply is not acceptable as CESC had addressed (June 2019) the supplier about the low generation of energy as compared to standard specification of 3-4 units per day/kW. Further, CESC also reported that the online monitoring system was also not functioning.

HESCOM replied that materials were inspected and accepted by HESCOM quality wing as PV modules' specifications/performance were as per IEC⁹⁰ standards and that generation of Solar panels depended upon the amount of sunlight received and a lower power module could still perform well if it had a high efficiency and converts sunlight to electricity effectively. It was also stated that, accepting Solar modules below the specified capacity would not result in lower generation and poor generation/ no generation was due to faulty equipment, poor maintenance and other technical reasons which were being addressed regularly.

⁸⁸ para 2 Quality Assurance and Evaluation Mechanism (Volume-II Section -I).

⁸⁹ Calculated at the rate of ₹ 2.15 lakh per set panel cost for 5 kw for 60 sets.

⁹⁰ International Electrotechnical Commission- an international standards organization that prepares and publishes international standards for all electrical, electronic and related technologies.

Chapter IV

Monitoring

Chapter IV

Monitoring

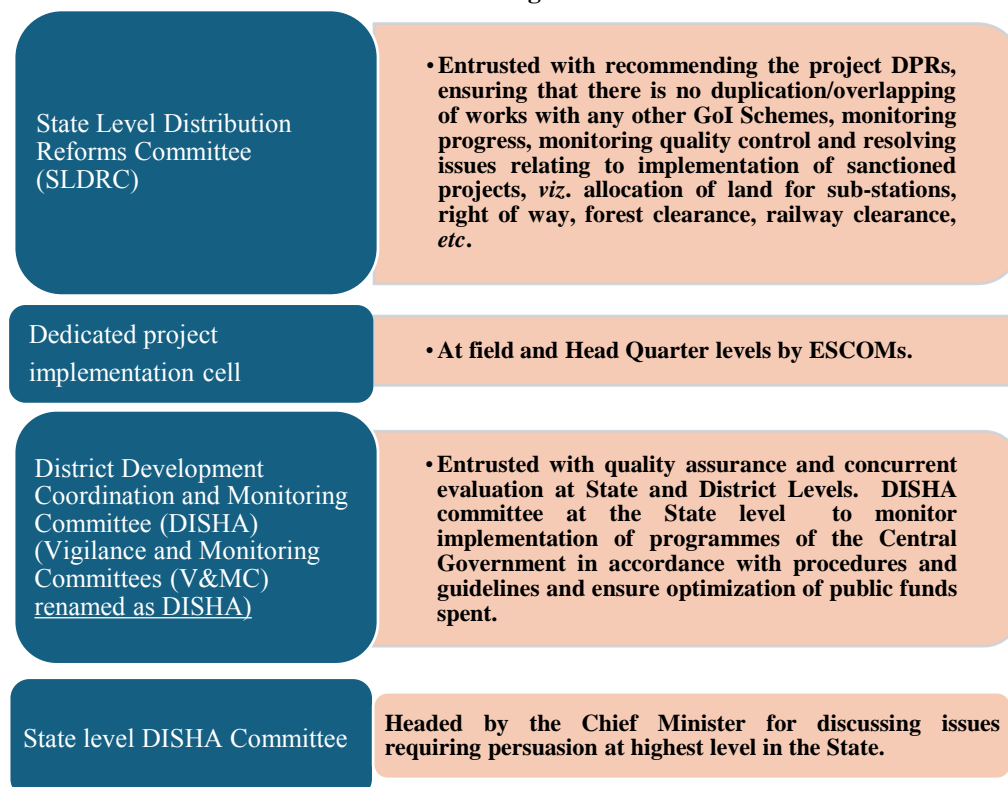
Delays in works due to various bottlenecks were not brought to the notice of State Level Distribution Reforms Committee (SLDRC) for their timely resolution. Even though guidelines for State Level District Development Coordination and Monitoring Committee (DISHA) were issued in June 2018, the DISHA was constituted only in January 2020, and its first meeting was held only in August 2022, after the completion and closure of the IPDS Scheme.

4.1 The IPDS scheme was formulated by the GoI to strengthen the sub-transmission and distribution system in urban areas. A Monitoring Committee for the Scheme was constituted by the Ministry of Power, GoI. The Committee was empowered to approve operational guidelines for scope of work, take necessary policy decisions for operationalisation of various components of the scheme and amendments thereon, sanction DPRs/ Projects, monitor and review implementation of the scheme, grant extension of time for project execution, etc. PFC was the Nodal agency for implementation of scheme, including monitoring of projects with physical and financial progress.

4.2 Monitoring agencies at State level

As per the scheme guidelines, GoK/ESCOMs had set up the required monitoring mechanism at various levels, as follows:

Chart No. 4.1: Monitoring mechanism under IPDS



In addition, the ESCOMs were to appoint -Project Management Agency (PMA) to assist in project management and to ensure timely implementation of the project.

However, Audit test-checked minutes of SLDRS and DISHA which revealed inadequate monitoring at various levels. The issues observed are discussed below:

4.3 Functioning of State Level Distribution Reforms Committee

GoK approved (February 2015) continuation of State Level Distribution Reforms Committee (SLDRS) constituted for RAPDRP to recommend and monitor IPDS projects. The SLDRS met nine times between June 2015 and March 2022 for approving, reviewing/closure of IPDS project proposals. Out of nine meetings, projects were approved in seven meetings, closure of projects pertaining to all ESCOMs were approved in two meetings. In four meetings, progress of projects under IPDS was reviewed and instructions/directions were given to ESCOMs for timely completion.

However, the committee could not adequately monitor the project, review progress of different components, identify issues leading to delays etc. so as to provide resolution for the same and ensure quick decisions, some instances of which are given below:

- Delay in awarding IT Phase II works by BESCOM, which was implemented on behalf of all ESCOMs. SLDRS did not examine this issue for suggesting remedial action (*detailed in Paragraph 3.11.1*).
- Under IT Phase – II - installation of modems to DTCs, HT consumers and boundary meters, though approved by SLDRS (07 March 2022) work had to be short closed due to poor progress (*detailed in Paragraph 3.11.7*) and SLDRS has considered implementation of smart meters under upcoming Revamped Distribution Sector Scheme, where all DTCs feeders and consumer meters shall be replaced by smart meters, which would make the remote meter reading with modems redundant. However, the State has not yet decided to implement the scheme. The short closure resulted in foregoing the grant of ₹ 3.21 crore⁹¹.

BESCOM replied (October 2024) that SLDRS had approved modifications to PQR criteria in IT tenders and tendering activities were brought to the notice of the committee. The reply is not acceptable as there was no intervention of SLDRS to ensure timely progression of the project.

- Due to protest from people, HESCOM had to shift GIS sub-station from

⁹¹ CESC (₹ 1.75 crore), MESCOM (₹ 1.69 crore), GESCOM (₹ 1.30 crore) and HESCOM (₹ 1.22 crore) less ₹ 0.61 crore.

Hosur to Rayapura Industrial area, resulting in non-completion of works within scheduled time and consequent utilisation of own funds amounting to ₹ 19.20 crore (*detailed in Paragraph 3.6*). Neither did HESCOM bring this to the notice of SLDRC nor did the committee take cognisance of the delay.

- The work of providing alternate source of energy to KIMS, Hubballi taken up by HESCOM was commissioned after a delay of 24 months owing to delay in decision on identification of location for implementing the works. This was not brought before SLDRC for resolving the issues. (*detailed in Appendix - 3*).
- Planned works valuing ₹ 24.59⁹² crore were dropped due to Right of Way issues, local constraints *etc.* The matter of dropping the scheduled works under IPDS was not deliberated in any SLDRC meetings (*detailed in Paragraph 3.4.2 and Appendix - 7*).

Thus, the works delayed on account of various bottlenecks were not brought to the notice of SLDRC, nor were the delays *suo moto* taken up for their early resolution by the aforesaid committee.

4.4 Functioning of DISHA

GoK constituted (between June and July 2015) District Level Electricity Committees (DLEC) under all the five ESCOMs. With the objective of ensuring quality of expenditure, optimisation of public funds spent under different programmes of Government of India, District Development Coordination and Monitoring Committees (DISHA) were formed in August 2016, subsuming DLEC, with Member of Parliament from the districts as the Chairpersons. A State level DISHA committee⁹³ headed by the Chief Minister for discussing issues requiring persuasion at highest level in the State was constituted in January 2020. As per the guidelines, DISHA was to meet every quarter at district level and at least once in six months at State level and IPDS was one of the schemes to be discussed in State level as well as District level DISHA committees.

Audit observed that even though guidelines for State Level DISHA were issued in June 2018, the Committee was constituted only in January 2020 and the first meeting was held only in August 2022, after completion and closure of IPDS Scheme. Thereby, formation of State level DISHA Committee had no bearing on IPDS.

As far as district level DISHA Committees are concerned, as against 642 meetings to be held, only 278 (43.3 *per cent*) were conducted during the period

⁹² BESCOM - ₹ 13.90 crore, MESOM ₹ 10.69 crore.

⁹³ Members include, Member of Parliament, Members of Legislative Assembly, heads of State Government Departments, Chief Postmaster General of the Circles, Director, Institutional Finance, Managing Director/heads of SC/ST Development Corporation, *etc.*

from August 2015⁹⁴ to March 2021⁹⁵, as detailed below:

Table No. 4.1: Details of DISHA meeting held between August 2015 to March 2021

Sl. No.	Name of ESCOMS	No of meetings to be conducted	No of Meetings held	No of meetings in which IPDS was discussed	Percentage of meetings held
1	BESCOM	184	75	6	40.76
2	CESC	115	65	16	56.52
3	GESCOM	138	42	6	30.43
4	HESCOM	161	68	14	42.24
5	MESCOM	44	28	20	63.64
	Total	642	278	62	

Source: Compiled by Audit from the data furnished by ESCOMs

Out of 278 meetings conducted, progress of works under IPDS was discussed only in 62 meetings (22.3 per cent), which is reflective of the importance accorded to monitoring of implementation of the scheme.

The ESCOMs replied (October 2024) that regular meetings of DISHA could not be organised by District Administration during implementation of IPDS due to non-availability of Hon'ble Member of Parliament and other members of respective districts. They added that the project was regularly reviewed in other district level meetings conducted by District in-charge Minister and Members of Legislative Assembly. However, minutes of such district level meetings confirming regular review of the Scheme were not provided by the ESCOMs.

4.5 Functioning of Project Management Agency

The scope of contract of Project Management Agency (PMA) included project planning, formulation, coordination of bidding process, implementation, monitoring including quality controls, maintenance of MIS and updating web portal and coordination with Nodal agency and Ministry of Power (MoP). ESCOMs paid an amount of ₹ 22.99 crore⁹⁶ to RECPDCL as of 31st March 2021 towards PMA charges under IPDS.

Audit scrutiny of records at BESCOM, CESC and MESCOM revealed that RECPDCL did not perform the mandated activities fully as per the IPDS guidelines. Details are given in **Appendix – 11**. Audit observed that PMA was not involved/did not assist the ESCOMs adequately in the following activities that were to be performed as per the agreement:

- Bidding process and selection of turnkey contractors and DPR formulation;
- Submission of monthly reports for each of the projects - physical and financial progress of the scheme;
- Identifying and reporting bottlenecks due to delays in survey, Right of Way issues and delay in approval from forest and other statutory authorities *etc.* and

⁹⁴ DLEC meeting up to August 2016, thereafter DISHA meeting.

⁹⁵ Meetings conducted upto March 2021 were considered due to financial closure of IPDS.

⁹⁶ BESCOM ₹ 9.14 0crore, CESC ₹ 3.19 crore, MESCOM ₹ 2.90 crore, GESCOM ₹ 3.52 crore and HESCOM ₹ 4.24 crore – Payments made between September 2015 and March 2021.

- Submission of Field Quality Plan for major items like Transformer, UG cable, ACSR conductor *etc.*
- Though it was mandatory as per the Guidelines to compile and analyse utility level AT&C loss data on quarterly basis, none of the ESCOMs included the same in the agreement with RECPDCL.

The ESCOMs responded (October 2024) that the PMA was involved in tendering, bid evaluation and preparation of monthly progress reports. However, Audit found no records relating to involvement of PMA in tendering, bid evaluation and preparation of monthly progress reports. Audit also observed that BESCOM had raised several complaints (January 2018) about PMA such as erratic reporting, lack of cooperation with Project Implementation Agencies, irregular updating of data on e-gauge portal, *etc.* indicating unsatisfactory performance by the PMA.

Bengaluru
The 08 DEC 2025

(Ashok Sinha)
Principal Accountant General (Audit-II)
Karnataka

Countersigned

New Delhi
The 10 DEC 2025

(K. Sanjay Murthy)
Comptroller and Auditor General of India

Appendices

Appendix —I*(Referred to in Paragraph 1.6)***List of Divisions Selected for detailed Audit and physical verification of IPDS assets
(₹ In lakh)**

Sl No.	ESCOM	Circle	Division	Total Expenditure
1	BESCOM	Davanagere	Chitradurga	268.44
2	BESCOM	Davanagere	Davanagere	11648.52
3	BESCOM	East circle	Indiranagar	1644.78
4	BESCOM	South circle	HSR Layout	8594.10
5	BESCOM	South circle	Koramangala	450.37
6	BESCOM	Tumkur	Tumkur	2848.39
7	BESCOM	West circle	Kengeri	1575.06
8	BESCOM	West circle	Rajajinagara	876.96
9	CESC	O&M Circle Hassan	H.N.Pura	1771.32
10	CESC	O&M circle Mandya	Pandavapura	1365.26
11	CESC	O&M circle Mysore (Rural)	Kollegala	1041.91
12	CESC	Works circle Mysore	Hunsur	1578.85
13	CESC	Works circle Mysore	Nanjangud	1467.49
14	GESCOM	Bidar	Humnabad	931.00
15	GESCOM	Kalaburgi	Kalaburgi CSC	1349.00
16	GESCOM	Raichur	Raichur Rural	714.00
17	GESCOM	Raichur	Sindhanoor	1289.00
18	HESCOM	Bagalkot	Mudhol	271.00
19	HESCOM	Belagavi	Belagavi Urban	5227.24
20	HESCOM	Haveri	Ranibennur	809.23
21	HESCOM	Hubballi	Dharwad Urban	2243.24
22	HESCOM	Hubballi	Ron	313.71
23	HESCOM	Sirsi	Sirsi	440.59
24	HESCOM	Vijaypura	Basvana Bagewadi	1900.76
25	MESCOM	Chikkamagaluru	Chikkamagaluru	2043.53
26	MESCOM	Mangalore	Mangalore	2948.11
27	MESCOM	Shivamogga	Shivamogga	4672.19

Appendix - 2**(Referred to in paragraph 2.4.1)****Details of loan released, rate of interest and interest reset by REC (₹ in crore)**

Sl. No.	Disbursement date	Loan amount (₹ in crore)	Rate of Interest for the first three years from the date of release	Reset interest rates after 3 years from the date of release
1	March 2019	36.77	10.11	9.25
2	June 2019	15.00	9.75	9.71
3	July 2019	5.00	9.55	9.63
4	July 2019	5.00	9.59	9.63
5	August 2019	10.00	9.57	9.45
6	August 2019	19.00	9.52	9.40
7	September 2019	12.00	9.44	10.09
8	October 2019	15.00	9.59	10.35
9	November 2019	10.00	9.25	9.42
10	December 2019	9.63	9.54	10.31
	Total	137.39		

Source: Data furnished by BESCO

Appendix -3
(Referred to in paragraph 3.3.2 and 4.3)
Details of ESCOM wise, component wise delay in Implementation

Sl. No.	Component	Scheduled date of completion	Actual date of completion	Delay in months and remarks based on Audit Scrutiny of records	Reply of the Company and remarks
	BESCOM				
1	System strengthening	31.03.2019	31.03.2019	No delay. However, all the six works awarded for system strengthening were declared 'Complete' on/ before 31.03.2019 by limiting the quantities on as is basis.	-
2	Metering	31.03.2019	31.03.2019	Even though all the three DWAs issued for metering works were declared 'Complete' on 31 March 2019, one work relating to supply and installation of modems is yet to be completed (October 2024) as per the scope of work mentioned in the DWA.	BESCOM stated (October 2024) that the integration of modems with Metered Data Management System was not done because of communication and other issues. The non integration of modem with MDM system indicates the BESCOM is not getting benefits as envisaged.
3	Solar	31.03.2019	31.03.2019/ Not completed	Out of two DWAs awarded for Solar works, one was declared 'Complete' before 31 March 2019 and one work is yet to be completed.(June 2023)	BESCOM stated (October 2024) that action was initiated as per terms of DWA and BG amount of ₹ 40 lakh had been forfeited for partial completion of work. The non completion of work results in non achievement of intended objective.
5	ERP	Dec-2021	Not completed	Declared 'Complete' (May 2022) without rolling out the modules.	BESCOM stated (October 2024) that all the modules as standalone are ready and they will be rolled out with end to end integration. The delay in rolling out modules resulted in foregoing the benefits envisaged under the scheme.
4	IT Phase II	March 2022/ July-22	31.12.2021	Declared 'complete' in December 2021, without completion of all the works as per scope of DWA relating to DC/DRC.	-

Appendix – 3 (Contd.)

Sl. No.	Component	Scheduled date of completion	Actual date of completion	Delay in months and remarks based on Audit Scrutiny of records	Reply of the Company and remarks
	CESC				
6	System strengthening	12.02.2019/ 12.04.2019	28.02.2019/ 30.12.2019	0 to 9	CESC stated (October 2024) that, though works were delayed, there was no loss of grant and 60 per cent of DPR cost as grant was received. Reply is not acceptable, as against the sanction of ₹ 107.79 crore, ₹106.42 crore grant only is received due to executed work is less than approved.
7	Metering	27.09.2019	30.12.2019	3	
8	Solar	08.09.2017	February 2018	5	
		Addl. 23.02.2019	28.02.2019 to 30.12.2019	0 to 10	
9	ERP	28.12.2018	03.08.2019	7	
	GESCOM				
10	System strengthening	June 2018 to July 2019	February 2019 to Mar 2019	0 to 6	GESCOM stated (October 2024) that all projects under IPDS are successfully completed during extended period and all the desired objectives have been achieved.
11	Solar	04.03.2019	15.08.2019	5	-
	HESCOM				
12	System strengthening	Dec 2017 to July 2019	Apr 2018 to Dec 2020	4 to 6	HESCOM stated (October 2024) that 33/11 kV substation works were delayed due to delay in approval for laying cables. There was delay in procurement of materials due to change in tax regime from VAT to GST. Heavy Rain, non-receipt of line clearance and enforcement of model code of conduct prior to Karnataka state assembly election also resulted in delays. Reply is not acceptable as the works were awarded during March 2018 and January 2019 and changeover to GST happened in July 2017 and the other delays are not long term delays.
13	Metering	Mar 2019	Dec 2019/Nov 2020	9 to 20	HESCOM stated (October 2024) that, due to enormous demand for energy meters they were unable to procure the meters as per requirement. Approvals for quantity variation took time resulting in delay in execution of work. The reply clearly indicates that HESCOM has failed in properly planning for the metering work.

Appendix – 3 (Contd.)

Sl. No.	Component	Scheduled date of completion	Actual date of completion	Delay in months and remarks based on Audit Scrutiny of records	Reply of the Company and remarks
14	Solar	Hubballi 24.01.2018	09.09.2019	19	HESCOM stated (October 2024) that, there were delays in getting permission from authorities for installation of Solar panels on Government building. Further, change in tax regime from VAT to GST caused delays in procurement of materials. Inability of HESCOM in obtaining permission from Government bodies clearly indicates improper planning.
15		Belgaum 09.01.2018	31.10.2018	9	
16	GIS	Feb 2021	Dec 2021	8	HESCOM stated (October 2024) that the works could not be completed on time due to COVID-19, heavy rainfall, RoW issues, delay in receipt of permission from authorities etc.
	MESCOM				
17	System strengthening	27.10.2018 to 27.03.2019	30.06.2019	2 to 8	MESCOM stated (October 2024) that Tenders were issued in September 2016 and works were awarded in April 2017/May 2017. The works were completed from Dec 2018 to June 2019.
18	Metering	27.09.2018	30.06.2019	9	MESCOM stated (October 2024) that the works were completed within the extended time line of 30 June 2019.
19	Solar	30.12.2017 to 26.09.2018	31.12.2018 to 30.06.2019	2 to 18	MESCOM stated (October 2024) The works were completed between Dec 2018 and June 2019.
20	GIS	24.05.2021	31.12.2021	7	PFC had extended the timeline for completion of GIS works to 31 December 2021, within which MESCOM completed the works.

Source: Compiled by Audit from data furnished by ESCOMs

Appendix -4
(Referred to in paragraph 3.3.3)

Details of tenders and DWAs issued by ESCOMs under IPDS

Sl. No.	ESCOM	Name of the work	Date of Sanction of DPR by PFC	Proposed date of work award as per guidelines	Tender released date	Time taken for NIT from the date of sanction	Date of issue of LOI	Date of issue of DWA	Time taken for DWA from the date of sanction	Delay in award of work as per guidelines
1	BESCOM	BMAZ(System strengthening)	16-03-2016	14-09-2016	03-09-2016	5.00	07-01-2017	17-03-2017	12	6
2		Ramnagara (re-tender)(System strengthening)	16-03-2016	14-09-2016	23-11-2016	8.00	24-03-2017	29-05-2017	14	8
3		Davangere(System strengthening)	16-03-2016	14-09-2016	03-09-2016	5.00	07-01-2017	17-03-2017	12	6
4		Kolar(System strengthening)	16-03-2016	14-09-2016	03-09-2016	5.00	07-01-2017	17-03-2017	12	6
5		Tumkur(System strengthening)	16-03-2016	14-09-2016	03-09-2016	5.00	07-01-2017	17-03-2017	12	6
6		BRC(System strengthening)	16-03-2016	14-09-2016	03-09-2016	5.00	07-01-2017	17-03-2017	12	6
7		Replacement of existing LT CT operated ETV meters by AMR meters for LT 3 and 5 with load above 40 HP	16-03-2016	14-09-2016	21-02-2017	11.00	07-03-2018	04-07-2018	27	21
8		Modems to LT3 and LT 5 consumers	16-03-2016	14-09-2016	17-04-2017	13.00	28-09-2017	09-02-2018	22	16
9		Commissioning of boundary meter along with metering cubicle	16-03-2016	14-09-2016	19-08-2017	17.00	28-09-2017	21-06-2018	27	21
10		LOT-1 (Solar)	16-03-2016	14-09-2016	26-10-2016	7.00	27-04-2017	28-09-2017	18	12
11		LOT-2 (Solar)	16-03-2016	14-09-2016	26-10-2016	7.00	27-04-2017	28-09-2017	18	12
12	CESC	System strengthening Mysore circle	16-03-2016	14-09-2016	02-09-2016	5.00	02-01-2017	13-02-2017	10	4
13		System strengthening Mandya circle	16-03-2016	14-09-2016	02-09-2016	5.00	06-02-2017	09-03-2017	11	5
14		System strengthening Hassan circle	16-03-2016	14-09-2016	02-09-2016	5.00	06-02-2017	28-02-2017	11	5
15		System strengthening Kodagu circle	16-03-2016	14-09-2016	02-09-2016	5.00	24-01-2017	13-04-2017	12	6
16		Metering (Company as a whole)	16-03-2016	14-09-2016	11-08-2017	16.00	28-09-2017	25-10-2017	19	13
17		Solar (Company as a whole)	16-03-2016	14-09-2016	12-11-2016	7.00	19-11-2016	09-03-2017	11	5

Appendix – 4 (Contd.)

Sl. No.	ESCOM	Name of the work	Date of Sanction of DPR by PFC	Proposed date of work award as per guidelines	Tender released date	Time taken for NIT from the date of sanction	Date of issue of LOI	Date of issue of DWA	Time taken for DWA from the date of sanction	Delay in award of work as per guidelines
18	GESCOM	1670 KWp Solar under IPDS in GESCOM town area	16-03-2016	14-09-2016	03-12-2016	8.00	05-09-2017	24-11-2017	20	14
19		System strengthening Raichur Circle	16-03-2016	14-09-2016	09-09-2016	5.00	30-03-2017	28-04-2017	13	7
20		System strengthening Gulbarga Circle	16-03-2016	14-09-2016	09-09-2016	5.00	30-03-2017	28-04-2017	13	7
21		System strengthening Bidar Circle	16-03-2016	14-09-2016	15-05-2017	13.00	28-09-2017	03-01-2018	21	15
22		System strengthening Bidar Circle	16-03-2016	14-09-2016	17-07-2017	16.00	28-09-2017	15-11-2017	19	14
23		System strengthening Bellary Circle	16-03-2016	14-09-2016	19-08-2017	17.00	28-09-2017	03-01-2018	21	15
24		33KV Sub-Station Works under IPDS in Bidar Circle	16-03-2016	14-09-2016	27-02-2017	11.00	05-09-2017	24-11-2017	20	14
25		Augmentation of 33/11 KV Sub-stations at Hospet and Sandur and Reconductoring of 33KV lines in Bellary Circle	16-03-2016	14-09-2016	27-02-2017	11.00	23-05-2017	17-07-2017	16	10
26	HESCOM	System Strengthening Works in Balagalkot Circle	16-03-2016	14-09-2016	02-05-2016	1.00	10-01-2017	06-03-2017	12	6
27		System Strengthening Works in Belagavi Circle	16-03-2016	14-09-2016	02-05-2016	1.00	25-01-2017	10-03-2017	12	6
28		System Strengthening Works in Bijapur Circle	16-03-2016	14-09-2016	27-12-2016	9.00	16-02-2017	17-03-2017	12	6
29		System Strengthening Works in Chikkodi Circle	16-03-2016	14-09-2016	26-09-2016	6.00	16-02-2017	17-03-2017	12	6
30		System Strengthening Works in Haveri Circle	16-03-2016	14-09-2016	27-12-2016	9.00	16-02-2017	17-03-2017	12	6
31		System Strengthening Works in Sirsi Circle	16-03-2016	14-09-2016	26-09-2016	6.00	16-02-2017	17-03-2017	12	6
32		Establishment of 33/11 KV Substation and Construction of 33KV lines at Athani Town in Chikkodi Circle	16-03-2016	14-09-2016	26-09-2016	6.00	16-02-2017	17-03-2017	12	6
33		System Strengthening Works in Hubballi Circle	16-03-2016	14-09-2016	26-09-2016	6.00	16-02-2017	17-03-2017	12	6

Appendix – 4 (Contd.)

Sl. No.	ESCOM	Name of the work	Date of Sanction of DPR by PFC	Proposed date of work award as per guidelines	Tender released date	Time taken for NIT from the date of sanction	Date of issue of LOI	Date of issue of DWA	Time taken for DWA from the date of sanction	Delay in award of work as per guidelines
34		Replacement of Electro-Mechanical /High Precision Meters by Static Meters in IPDS Towns of Belagavi Zone, HESCOM Excluding Belagavi Town	16-03-2016	14-09-2016	26-09-2016	6.00	16-02-2017	17-03-2017	20	14
35		Replacement of Electro-Mechanical /High Precision Meters by Static Meters in IPDS Towns of Hubballi Zone, HESCOM Excluding Hubballi Town	16-03-2016	14-09-2016	20-01-2017	10.00	10-03-2017	07-04-2017	20	14
36		Solar Panels to an extent of 1045 kWp in Belgaum Zone	16-03-2016	14-09-2016	09-08-2017	16.00	28-09-2017	04-12-2017	11	5
37		Solar Panels to an extent of 775 kWp in Hubballi Zone	16-03-2016	14-09-2016	09-08-2017	16.00	28-09-2017	04-12-2017	11	5
38		Establishing of new 33/11 KV Gas insulated substations (GIS) along with construction of associated 33KV lines using Underground cable at Mahanteshnagar & in the premises of 33/11 KV substation at RM-II in Belagavi City and Construction of 33KV line using Underground cable	16-03-2016	14-09-2016	24-11-2017	20.00	01-03-2018	23-03-2018	24	18
39	MESCOM	Establishing of new 2X5 MVA 33/11 KV Substation along with construction of associated 33KV and 11 KV lines and Markandeyanagar, Gokak Town in Belagavi Circle of Belagavi District	16-03-2016	14-09-2016	20-01-2018	22.00	18-12-2018	25-01-2019	34	28
40		System strengthening Mangaluru I & II	16-03-2016	14-09-2016	01-07-2017	15.00	16-09-2017	28-09-2017	18	12
41		System strengthening Mangaluru Puttur & Bantwal	16-03-2016	14-09-2016	01-07-2017	15.00	16-09-2017	28-09-2017	18	12
42		System strengthening Udupi	16-03-2016	14-09-2016	28-09-2016	6.00	30-03-2017	28-04-2017	13	7
43		System strengthening Shivamogga	16-03-2016	14-09-2016	28-09-2016	6.00	30-03-2017	28-04-2017	13	7
44		System strengthening Chikkamagaluru	16-03-2016	14-09-2016	28-09-2016	6.00	30-03-2017	28-04-2017	13	7

Appendix – 4 (Contd.)

Sl. No.	ESCOM	Name of the work	Date of Sanction of DPR by PFC	Proposed date of work award as per guidelines	Tender released date	Time taken for NIT from the date of sanction	Date of issue of LOI	Date of issue of DWA	Time taken for DWA from the date of sanction	Delay in award of work as per guidelines
45		Metering	16-03-2016	14-09-2016	29-03-2017	12.00	16-09-2017	28-09-2017	18	12
46		Udupi (Solar)	16-03-2016	14-09-2016	12-11-2016	7.00	26-03-2018	07-06-2018	26	20
47		Shivamogga (Solar)	16-03-2016	14-09-2016	12-11-2016	7.00	30-03-2017	06-05-2017	13	7
48		Mangaluru (Solar)	16-03-2016	14-09-2016	12-11-2016	7.00	30-03-2017	06-05-2017	13	7
49		Chikkamagaluru (Solar)	16-03-2016	14-09-2016	12-11-2016	7.00	30-03-2017	06-05-2017	13	7

Appendix - 5

(Referred to in paragraph 3.3.4)

Details of work orders issued after the scheduled completion date i.e., 31st March 2019

Sl. No.	Division	Work Order No.	Name of work	Date of issue of Work Order	Actual date of Completion	Value of work order	Actual payment made
1	Rajajinagar	2018/RN/14.222/ K-89452/ 14.02.2019	Estimate for Supply, Installation, Commissioning, Integration & Maintenance of Modems for 40HP & above LT-3 & LT-5 Installations in IPDS towns of BESCOM & pushing the data to the MDAS & MDM services of BESCOM for GPRS data communication on total turnkey basis in O & M-1, N1 S/D, Rajajinagar Division, Bengaluru. (DWA No.35/09.02.2018 placed to M/S Analogics Tech India Ltd.,)	03-04-2019	05-04-2019	40592	40592
2		2018/RN/14.222 /K-89454/ 14.02.2019	Estimate for Supply, Installation, Commissioning, Integration & Maintenance of Modems for 40HP & above LT-3 & LT-5 Installations in IPDS towns of BESCOM & pushing the data to the MDAS & MDM services of BESCOM for GPRS data communication on total turnkey basis in O & M-3, N1 S/D, Rajajinagar Division, Bengaluru. (DWA No.35/09.02.2018 placed to M/S Analogics Tech India Ltd.,)	03-04-2019	05-05-2019	101480	101480
3		2018/RN/14.222 /K-89325/ 16.01.2019	Estimate for Supply, Installation, Commissioning, Integration & Maintenance of Modems for 40HP & above LT-3 & LT-5 Installations in IPDS towns of BESCOM & pushing the data to the MDAS & MDM services of BESCOM for GPRS data communication on total turnkey basis in O & M-4, N2 S/D, Rajajinagar Division, Bengaluru. (DWA No.35/09.02.2018 placed to M/S Analogics Tech India Ltd.,)	05-04-2019	12-05-2019	35518	35518
4		2018/RN/14.222/ K-89340/ 14.02.2019	Estimate for Supply, Installation, Commissioning, Integration & Maintenance of Modems for 40HP & above LT-3 & LT-5 Installations in IPDS towns of BESCOM & pushing the data to the MDAS & MDM services of BESCOM for GPRS data communication on total turnkey basis in O & M-4, N2 S/D, Rajajinagar Division, Bengaluru. (DWA No.35/09.02.2018 placed to M/S Analogics Tech India Ltd.,)	05-04-2019	08-08-2019	40592	40592
5		2018/RN/14.222/ K-89456/ 15.02.2019	Estimate for Supply, Installation, Commissioning, Integration & Maintenance of Modems for 40HP & above LT-3 & LT-5 Installations in IPDS towns of BESCOM & pushing the data to the MDAS & MDM services of BESCOM for GPRS data communication on total turnkey basis in O & M-Nagarabhavi, N8 S/D, Rajajinagar Division, Bengaluru. (DWA No.35/09.02.2018 placed to M/S Analogics Tech India Ltd.,)	03-04-2019	15-05-2019	35518	35518
6		2018/RN/14.222/ K-89457/ 15.02.2019	Estimate for Supply, Installation, Commissioning, Integration & Maintenance of Modems for 40HP & above LT-3 & LT-5 Installations in IPDS towns of BESCOM & pushing the data to the MDAS & MDM services of BESCOM for GPRS data communication on total turn key	03-04-2019	17-05-2019	45666	45666

Appendix – 5 (Contd.)

Sl. No.	Division	Work Order No.	Name of work	Date of issue of Work Order	Actual date of Completion	Value of work order	Actual payment made
			basis in O & M-S.G.Kaval, N8 S/D, Rajajinagar Division, Bengaluru. (DWA No.35/09.02.2018 placed to M/S Analogics Tech India Ltd.,)				
7	Davanagere	F-14881	LT UG, Nijalingappa Feeder (F-16)	12-04-2019	12-04-2019	3331170	3331100
8		F-14883	LT UG, Mouneshwara Feeder	18-07-2019	20-07-2019	6545081	6545081
9		E-40234	11 KV UG, BT Feeder	20-02-2020	20-02-2020	16955470	16955470
10		F-14887	HT UG (11 KV), Ravi Feeder	19-08-2019	19-08-2019	631451	631151
11		F-14888	250 KVA DTC, KTJ 2 Feeder	17-09-2019	17-09-2019	7602921	7602921
12		F-14889	HT UG (11 KV), Mouneshwara Feeder	20-09-2019	20-09-2019	27161172	27161172
13		F-14890	250 KVA DTC, SVT Feeder	20-09-2019	20-09-2019	836296	836296
14		F-14894	250 KVA DTC, G&S Feeder	23-10-2019	23-10-2019	2980322	2980321
15		F-14895	LT UG, Mahanagara palike	23-10-2019	23-10-2019	2775196	2775196
16		F-14896	LT UG, CGH	23-10-2019	23-10-2019	298107	298107
17		F-14897	LT UG, Trishul Feeder	23-10-2019	23-10-2019	1327667	1327667
18		F-14898	LT UG, KTJ	25-10-2019	25-10-2019	3728929	3728928
19		F-14899	LT UG, PJ Feeder	25-10-2019	25-10-2019	6292801	6292800
20		F-14900	LT UG, PJ Feeder	25-10-2019	25-10-2019	4418666	4418666
21		F-14902	250 KVA DTC, PJ Feeder	25-10-2019	25-10-2019	3206540	3206540
22		F-14903	LT UG, Vigneshwara	25-10-2019	25-10-2019	5951637	5951637
23		F-14904	LT UG, Vigneshwara	25-10-2019	25-10-2019	3812828	3812828
24		F-14905	LT UG, Mahanagara palike	25-10-2019	25-10-2019	6207668	6207668
25		F-16551	LT UG, Jaya nagara	20-11-2019	20-11-2019	7496067	7496067
26		F-16556	LT UG, Vidhyanager	20-11-2019	20-11-2019	7430784	7430784
27		F-16557	LT UG, Vidhyanager	20-11-2019	20-11-2019	4915571	4915571
28		F-16558	HT UG (11 KV), MCC B	20-11-2019	20-11-2019	3570031	3570030
29		F-16559	HT UG (11 KV), Mouneshwara Feeder	20-11-2019	20-11-2019	892412	892412
30		F-16560	HT UG (11 KV), Jaya nagara	20-11-2019	20-11-2019	1880560	1880559
31		F-16561	HT UG (11 KV), Vidhyanager	20-11-2019	20-11-2019	1735524	1735524
32		F-16562	LT UG, Nijalingappa Feeder	20-11-2019	20-11-2019	178407	178407
33		F-16563	HT UG (11 KV), Vivekananda	20-11-2019	20-11-2019	1827200	1827199
34		F-16564	250 KVA DTC, LF -1 Feeder (CSD-2)	28-11-2019	28-11-2019	542728	542728
35		F-16565	250 KVA DTC, Mahaveera Feeder	28-11-2019	28-11-2019	1047287	1047287
36		F-16566	250 KVA DTC, SVT Feeder	28-11-2019	29-11-2019	2655419	2655420
37		F-16567	250 KVA DTC, Goshali Feeder	04-12-2019	04-12-2019	1059144	1059143
38		F-16568	250 KVA DTC, Mahaveera Feeder	04-12-2019	04-12-2019	4102224	4102223
39		F-16569	250 KVA DTC, Anekonda Feeder	04-12-2019	04-12-2019	3067994	3067994

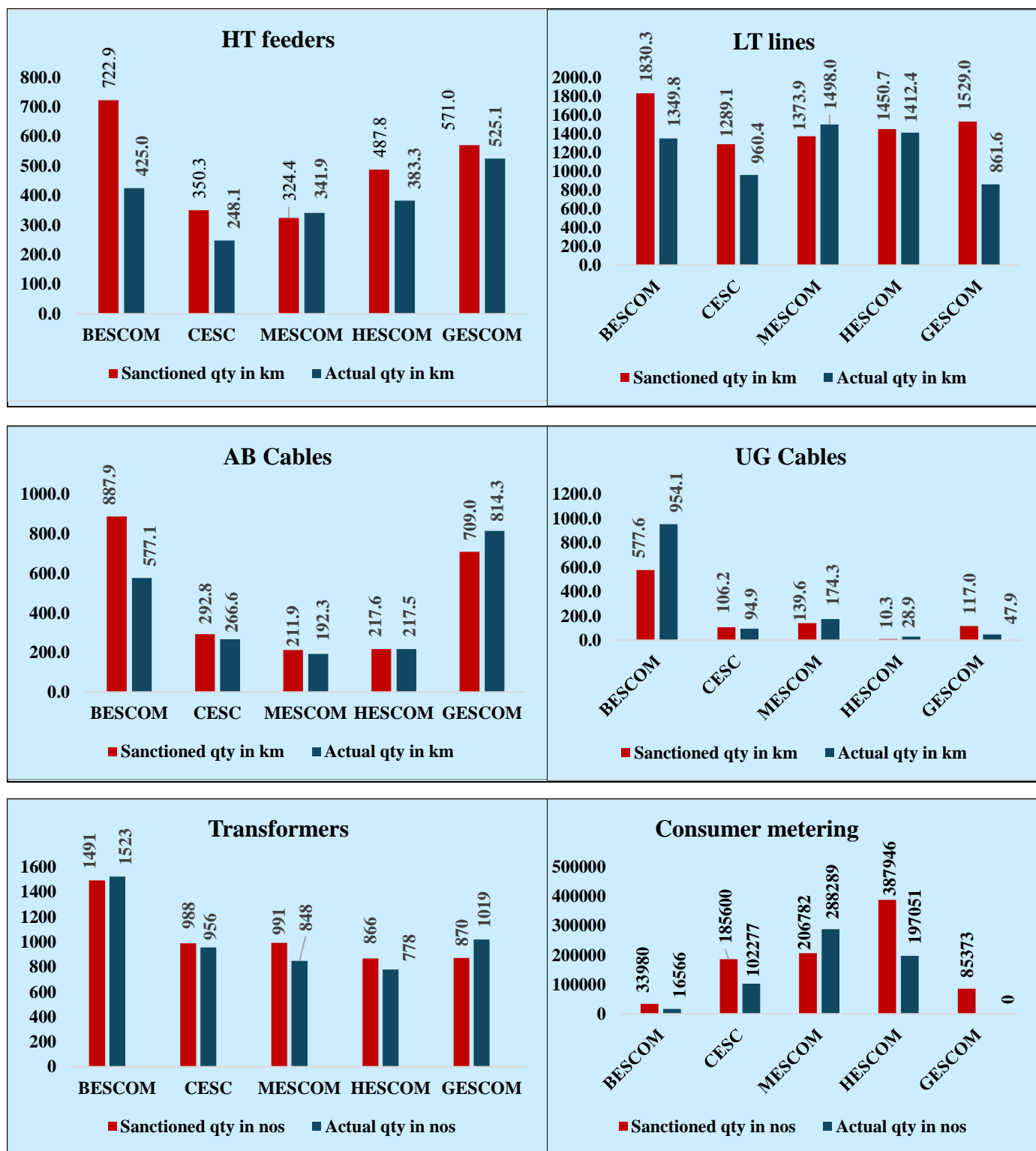
Appendix – 5 (Contd.)

Sl. No.	Division	Work Order No.	Name of work	Date of issue of Work Order	Actual date of Completion	Value of work order	Actual payment made
40		F-16570	250 KVA DTC, Ravi Feeder	04-12-2019	04-12-2019	3588695	3588695
41		D-4272	250 KVA DTC, F 15 Commercial Feeder	04-12-2019	28-11-2019	2604691	2604691
42		F-40214	LT UG, MCC B Feeder	28-06-2019	07-12-2019	39623727	39527457
43		F-16571	LT UG, MCC B Feeder	24-12-2019	24-12-2019	7461638	7461638
44		E-16572	250 KVA DTC, Mahaveera Feeder	24-12-2019	24-12-2019	3146021	3146021
45		E-16573	HT UG (11 KV), New SS Hitech Feeder	01-02-2020	01-02-2020	2715127	2715127
46		E-16574	HT UG (11 KV), New Vinayaka Feedet	01-02-2020	01-02-2020	485605	485605
47		E-16575	250 KVA DTC, Shivali Feeder	01-02-2020	01-02-2020	3652652	3652853
48		E-16576	LT UG, Ranganatha Feeder	05-02-2020	05-02-2020	697571	697571
49		E-16577	LT UG, F-1 SVT Feeder	05-02-2020	05-02-2020	7192695	7192695
50		E-16578	250 KVA DTC, LF -1 Feeder (CSD-2)	05-02-2020	05-02-2020	507307	507307
51		E-16579	LT UG, F-9 Shaneshwara Feeder	20-02-2020	20-02-2020	19267759	19267760
52		E-16580	HT UG (11 KV), Shaneshwara Feeder	20-02-2020	20-02-2020	7373480	7373480
53		E-16581	HT UG (11 KV), Shaneshwara Feeder	20-02-2020	20-02-2020	4196132	4196132
54		F-17763	HT UG, Vigneshwar Feeder	20-03-2020	20-03-2020	1552571	1552571
55		F-17764	HT UG, PJ Feeder	20-03-2020	20-03-2020	1122279	1122379
56		F-17765	LT UG, PJ Feeder	20-03-2020	20-03-2020	545202	545202
57		F-17766	LT UG, CGH Feeder	20-03-2020	20-03-2020	202489	202489
58		F-17767	LT UG, Mahanagara Palike Feeder	20-03-2020	20-03-2020	108730	108730
59		F-17768	LT UG, KTJ Feeder	20-03-2020	20-03-2020	418464	418464
60		F-17769	HT UG, Mahanagara Palike Feeder	21-03-2020	21-03-2020	4734461	4734461
61		F-17770	HT UG, Mahanagara Palike Feeder	21-03-2020	21-03-2020	3198988	3198988
62		F-17771	LT UG, Mahaveera Feeder	30-03-2020	30-03-2020	206968	206968
63		F-17772	HT UG, Mahaveera Feeder	30-03-2020	30-03-2020	417434	417434
64		F-17773	DTC, Durgambika Feeder	30-03-2020	30-03-2020	1148484	1148484
65		F-14891	Additional New 63 KVA Distribution Transformer works at Haronahally Feeder Channagiri Sub Divn	20-09-2019	20-09-2019	1226641	1226641
66		F-14892	Additional New 63 KVA Distribution Transformer works at Channagiri Town Feeder	20-09-2019	20-09-2019	2118440	2118440
67		F-14893	Additional New 63 KVA Distribution Transformer works at Garaga Feeder Channagiri	20-09-2019	20-09-2019	278978	278978
68		F-14884	Linking newly commissioned NEW SS Hi Tech 11 KV UG cable from Breaker to ODS in O&M Unit-1 CSD-1 BESCOM Davanagere	19-07-2019	30-07-2019	776811	571139
69		F-14885	Linking newly commissioned NEW VINAYAKA 11 KV UG cable from Breaker to ODS in O&M Unit-1 CSD-1 BESCOM Davanagere	19-07-2019	30-07-2019	804906	593209
			Total			26,81,39,586	26,76,25,871

Appendix – 6

(Referred to in paragraph 3.4.1)

Chart showing Variation in quantities executed



Source: Data uploaded by ESCOMs in PFC website

Appendix – 7
(Referred to in paragraph 3.4.2 and 4.3)

Instances of dropping of planned works

Sl. No.	Name of planned works dropped	Value of work (₹ In crore)	Reason for dropping
BESCOM			
1	Replacement of Old 3x95 sq. mm Paper Insulated Lead Sheath Cable (PILC) by 3x120 sq. mm RA Cross Linked Polyethylene (XLPE) cable in Indiranagar Division (28 works).	6.05	Work dropped due to local constraints, ROW issues.
2	26 works of installation of distribution transformers and drawing UG cables in Davangere division.	3.86	Right of way issues, Space constraints, non-receipt of permission from local authorities and transformers installed under other works.
3	Drawing new feeder from Bagmane Tech Park MUSS to Vignan nagar for bifurcation of load on F12 feeder of HAL MUSS with 3Cx400 sq. mm XLPE UG cable for a distance of 3 km in HAL O&M S7 sub-division, Koramangala Division.	1.09	RoW issues for laying UG Cable.
4	Link line from Kadubisanahalli MUSS F16 feeder to Ashoknagar, to reduce the load on F2 of HAL and F7 of Kadubisanahalli station.	0.36	RoW issues for laying UG Cable.
5	Providing link line between F8 of Amarajyothi and F2 of Leela MUSS Kodihalli in Murugeshpalya O&M unit S3 sub-division	0.08	RoW issues for laying UG Cable.
6	Link line for F11 Adugodi feeder by interposing one RMU near William pen DTC loop bifurcation in O&M Unit, Koramangala, Bengaluru	0.27	Work done outside IPDS scheme due to emergency/ field constraints
7	Interposing RMUs between 16 th main RMU to Canara bank RMU of F23 feeder by bifurcating loads on F3 NGV feeder in O&M Unit Koramangala Bengaluru	0.27	RoW issues
8	Converting 11 kV feeder OH into HT UG cable of F8 from RMZ MUSS in Marathalli O&M Unit SD	1.28	RoW issues
9	Conversion of 11 kV feeder OH into HTUG cable of F4 feeder from RMZ MUSS in Marathalli O&M Unit S7 SD	0.64	RoW issues
MESCOM			
1	Reconductoring of single circuit 11 kV using coyote and rabbit conductor (Mangaluru Div 1 & 2)	3.22	Though the work was included in DPR of IPDS, it was executed during 2013-17 itself, outside the Scheme due to field conditions.
2	Reconductoring of LT 3 phase 4 wire power line (Mangaluru Div 1 & 2)	6.17	Though the work was included in DPR of IPDS, it was executed during 2013-17 itself, outside the Scheme due to field conditions.
3	Installation of deep drawn metal metering box (three phase) including nails, screws, insulation and tape (Shimoga Circle)	0.81	-At the time of execution in the field, it was found that the proposed meters were already shifted by consumers along with boxes, while executing the model subdivision, smart city work (Replacement of overhead line by UG Cable). Hence the work proposed in IPDS was not carried out
4	Reconductoring of LT 3 phase 4 wire power line in Shimoga Circle	0.11	Shortage of time to procure materials (conductor) and probable line clearance issues
5	Reconductoring of HT coyote line in Shimoga Circle	0.38	100 per cent work was not executed without quoting any reasons while approving the quantity variation by the company.

Appendix – 8

(Referred to in paragraph 3.5.2)

Details of tender premium paid on award of system strengthening works in ESCOMs

(₹ in crore)

Sl. No.	Name of the circle	Estimated cost put to tender	Agency	Quoted cost	Negotiated cost /awarded cost	Percentage of awarded cost over estimated cost
BESCOM						
1	BMAZ	187.2	M/s. Larsen and Toubro Ltd	196.10	196.09	4.75
2	Ramanagara	40.62	M/s. Asian Fab Tech Limited	48.24	48.24	18.76
3	Davanagere	97.44	M/s. Larsen and Toubro Ltd	116.35	116.39	19.45
4	Kolar	42.29	M/s. Transglobal Power Limited	54.46	53.65	26.86
5	Tumakuru	45.13	M/s. Bajaj Electricals	55.25	55.25	22.42
6	BRC	7.42	M/s. Maruthi Mechanical & Electricals (P) Limited	9.43	9.41	26.82
	Total	420.10		479.83	479.03	
CESC						
1	Mysore	29.83	M/s. Sanghamitra Constructions Kadappa, Andhra Pradesh	35.74	35.74	19.81
2	Mandya	28.27	M/s. Skilltech Engineers & Constructors Mysore	39.83	37.94	34.21
3	Hassan	21.37	M/s. Pavani Controls & Panels Hyderabad	28.52	28.53	33.50
4	Kodagu	31.04	M/s. Sanghamitra Constructions Kadappa, Andhra Pradesh	39.08	39.09	25.93
	Total	110.51		143.17	141.30	

Appendix – 8 (Contd.)

Sl. No.	Name of the circle	Estimated cost put to tender	Agency	Quoted cost	Negotiated cost /awarded cost	Percentage of awarded cost over estimated cost
GESCOM						
1	Raichur	35.12	M/s. Aries Corporate Services Pvt Ltd	43.34	43.34	23.41
2	Gulbarga	40.44	M/s. Aries Corporate Services Pvt Ltd	49.18	49.18	21.61
3	Bidar – Humnabad Division	8.80	M/s. VCube Engineering Pvt Ltd	11.27	11.27	28.07
4	Bidar – Bidar Division	16.32	M/s. V R Patil Vividh Vidyuth Nirman Pvt Ltd.	20.97	20.97	28.49
5	Bellari	34.52	M/s. Inland Surveyors	44.20	44.20	28.04
	Total	135.20		168.96	168.96	
HESCOM						
1	Bagalkot	14.17	M/s. Mahesh Electricals and Telecom	17.01	17.01	20.04
2	Belagavi	14.12	M/s. Manipal Energy and Infratech Limited	17.37	17.37	23.02
3	Bijapur	21.32	M/s. TV Subbaiah	26.22	26.22	22.98
4	Chikkodi	3.86	M/s. Manipal Energy and Infratech Limited	4.74	4.74	22.80
5	Haveri	11.77	M/s. M Anjaneyalu Civil and Electrical Contractor	13.99	13.99	18.86
6	Sirsi	8.66	M/s. TV Subbaiah	10.68	10.68	23.33
7	Hubballi	18.85	M/s. Vijay Electricals	23.18	23.18	22.97
	Total	92.75		113.19	113.19	

Appendix – 8 (Contd.)

Sl. No.	Name of the circle	Estimated cost put to tender	Agency	Quoted cost	Negotiated cost /awarded cost	Percentage of awarded cost over estimated cost
	MESCOM					
1	Udupi	21.04	M/s. Manipal Energy & Infratech Ltd Udupi	28.19	25.87	22.96
2	Shivamogga	33.43	M/s. Asian Fab Tech Ltd Bengaluru	39.93	39.92	19.41
3	Chikkamagalur	19.60	M/s. Asian Fab Tech Ltd Bengaluru	23.41	23.40	19.39
4	Mangalore (Div 1 & 2)	28.01	M/s. Jyothi Electricals Mangaluru	37.15	35.01	24.99
5	Mangalore (Puttur & Bantwala)	22.90	M/s. Aravinda Electricals Bengaluru	26.20	26.20	14.41
	Additional infrastructure work					
1	Udupi	2.84	M/s. Manipal Energy & Infratech Ltd Udupi	3.43	3.45	21.48
2	Shivamogga	2.01	M/s Roopa Electricals Shivamogga	2.31	2.29	13.93
3	Mangaluru	4.84	M/s. Manipal Energy & Infratech Ltd Udupi	5.43	5.43	12.19
	Total	134.67		166.05	161.57	

Appendix – 9

(Referred to in paragraph 3.9.4)

Details of discrepancies noticed in GESCOM and HESCOM

Sl. No.	Discrepancy observed	No. of instances observed in	
		HESCOM	GESCOM
1	Malfunctioning/Non-functioning of Inverter	13	7
2	Malfunctioning of Bi-directional/Solar meter	4	0
3	Damaged Solar panels	6	7
4	Unmounted installation without prior intimation to concerned DISCOMs	6	0
5	Dusty panels	3	1
6	Tree shading	1	2
7	Panels mounted on unstable structure	3	0
8	Cement patches due to relocation of Panels.	1	0
9	Using Non Static meter (i.e, electro-mechanical meter (Old meters)	3	0
10	Missing Panels/array junction box/direct current distribution box/inverter	1	3
11	Lack of Stable structure to reach installation	4	3
12	No Power Purchase Agreement	22	22
13	Others*	4	12

* installation was not functioning prior to 01.01.2022; panels were disconnected; meters are dumped in godown; wild growth around the panels; inverter in alarm state; and inverter serial number not matching with the joint verification report.

Appendix – 10
(Referred to in paragraph 3.9.5)
Details of non-compliance of Standard Bid Documents parameters

Sl. No.	Parameters	Remarks of Audit	Remarks of CESC
1	Conditions of contract, Section VI, Appendix 5.8 guarantees, liquidated damages for non-performance.	Data not provided in this Appendix regarding guarantees and LD for non-performance.	-
2	The bidders need to submit long term performance ratio values along with the techno commercial bid	No such data provided by the bidder.	During inspection of PV modules, it has been mentioned in the inspection reports that the type of modules supplied are of Grade A+, which are good quality PV modules.
3	Subsequent PR comparisons will be made from the data obtained based on real time measurement.	As the systems are not connected to CESC server, no PR comparisons can be made on real time measurement.	-
4	The schedule of measurement shall be quarterly PR values for twenty-five years of operation. If the deviation is measured and PR falls below 3 per cent of guaranteed value, supplier shall be liable for monetary compensation to the owner for loss in revenue due to lower generation.	Annual PR measurement test was not conducted during five years of O & M period and actual PR value of plant was not ascertainable.	-
5	Penalty = $2 \times \text{loss in energy generation} \times \text{applicable tariff}$ without subsidy.	As annual PR measurement test was not conducted, penalty leviable for lower generation could not be calculated during audit.	Loss of generation is not attributable only to the Panel efficiency. In certain cases, the modules are dismantled to facilitate construction and other activities. However, letters have been addressed to the agency for encashment of performance BG if the details of generations are not furnished
6	Successful bidder shall provide a bank guarantee for the first 5 years and Corporate guarantee valid for the balance period of 20 years for settlement of claims against the Performance Guarantee parameters stipulated. The guarantees shall be irrevocable and unconditional as per the prescribed formats.	Corporate Guarantee for the balance period of 20 years was not provided by the vendor.	The corporate guarantees for PV modules installed under SRTPV Phase-1 for 343 sites is submitted vide letter dated 03.07.2017 and vide letter dated 13.02.2019 for SRTPV Phase 2- 431 sites as Annexure- 16.
7	Bidder shall be allowed a notice period of 10 days to rectify any discrepancy, failing which a penalty of ₹ 5,000 per day shall be levied till rectification is done.	As PR measurement values are not available penalty could not be calculated during audit.	Though the PR is furnished by the bidder, average generation of 4.5 units per kW for 300 days in a year can be considered for calculating the penalty. However, the loss in generation is also attributable to line clears and other interruptions during Solar hours for which accurate data is not available. However, letters have been addressed to the agency for encashment of performance BG if the details of generations are not furnished.
8	It shall be the responsibility of the tenderer to configure the remote data monitoring on to CESC server while handing over the system to CESC after 5 years of maintenance.	Five-year warranty period ended during September 2022. The vendor did not configure the remote data monitoring on CESC server, even after completion of one year from September 2022.	The agency has provided the online data fetching details to divisions concerned. On informing the agency about non-communication, the agency responded that RMS works were based on the network availability and the signals to the Modem.

Appendix – 10 (Contd.)

Sl. No.	Parameters	Remarks of Audit	Remarks of CESC
			<p>Further the agency had provided the URL for portal www.cescmysipdsSolar.com for online data of SRTPVs, wherein data was available upto 9th March 2023. The downloaded data from the said URL was submitted by the agency for IPDS Phase 1.</p> <p>The agency submitted arch 2024) that maintenance period was completed in February 2023 and hence it was very difficult to re-establish the Portal and communication services.</p>

Appendix – 11
(Referred to in paragraph 4.5)

Details of Scope of work and non-performance thereon by M/s. RECPDCL

Sl. No	Scope of work of PMA	Observations of Audit		
		BESCOM	CESC	MESCOM
Monitoring and coordination of bidding process				
1	Assist utilities in preparation of tender documents for appointment of turnkey contractor, bidding process (including pre bid meetings etc.) and technical evaluation of bids.	Documentary evidence indicating involvement of PMA in tendering and technical evaluation was not found on record.		
2	Assist the utilities for placement of Letter of Award and related activities.	Documentary evidence indicating involvement of PMA either during tender evaluation, price negotiation or placement of LOA/DWA were not found on record. PMA's view/opinion was not taken into consideration in awarding of tender, as no record in this regard was available in the documents produced to audit.		
Project Planning and Implementation				
3	To monitor, DPR wise monthly physical and financial progress of the scheme, prepare a consolidated report & submit to utility for onward submission to Nodal Agency.	No DPR-wise monthly physical and financial progress of the scheme was prepared for onward submission to the nodal agency. Only intermittent progress reports were prepared by the PMA in BESCOM,		
4	Identification of anticipated bottlenecks in project implementation & preparation of remedial action plan in consultation with utilities & project implementing agency (Contractor).	---	There was delay in completion of work up to 9 months in some works by the agencies especially in system strengthening work of Chamarajanagar and Kodagu and regular Solar work (5 months). Against the scheme to be completed within 30 months from the date of approval by Monitoring Committee, some works were completed in 13 to 46 months with delay up to 10 months.	There was delay in completion of work upto 18 months in some works especially in installation of Solar panels at Shivamogga and Mangalore and in Chikkamagalur (12 months) Metering (9 months).
			PMA did not identify the bottlenecks in project implementation and suggest remedial plan for timely completion through their suggestions/reports resulting in extension of completion period.	
5	Recommend the claim of Utility for fund release from Nodal Agency. The recommendation is to be supported by a report on expenditure, progress and constraints if any for timely completion of project.	Though work was declared complete in March 2019, documents and request for release of final tranche of grant was submitted in January 2021, after a delay of 19 months (after allowing three months provided for submission).	Physical progress was completed in February 2019/ March 2019/ December 2019. For release of final tranche, letter was submitted to PFC by CESC with required documents in March 2021 i.e. after a lapse of 25/24/15 months (February 2019 to March 2021).	Physical progress was completed in December 2018/ January 2019/ June 2019. For release of final tranche, letter was submitted to PFC by MESCOM with required documents in Feb/ March 2021 i.e. after a lapse of 26 months.
		No involvement of the PMA in expediting the process was observed. PMA did not assist the utility in timely submission of necessary documents for release of final tranche of grant. (the delay in release of last tranche of funds by PFC is detailed in Paragraph No. 2.6).		

