PERFORMANCE EVALUATION REPORT

DISTRIBUTION COMPANIES

2023-24

Along with comparison of Last Four Years

FY 2019-20, 2020-21, 2021-22, & 2022-23

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

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EXECUTIVE SUMMARY

The power sector is critical to the socio-economic development of any country, as electricity is the backbone of industrial growth, job creation, education, healthcare, agricultural productivity, and environmental sustainability. For a country like Pakistan, the availability of electricity is vital not just for economic development, but for poverty alleviation and societal well-being. However, the mere availability of power is insufficient; it must be reliable, affordable, and accessible to all segments of society for its true benefits to be realized.

The National Electric Power Regulatory Authority (NEPRA) regulates Pakistan's power sector, overseeing the generation, transmission, and distribution of electric power, established under the Regulation of Generation, Transmission, and Distribution of Electric Power Act, 1997. NEPRA ensures that power services are provided in line with the country's needs and regulatory standards.

Since 2010, NEPRA has published an annual Performance Evaluation Report (PER) that assesses the performance of distribution companies (DISCOs) based on various key performance indicators (KPIs) such as transmission and distribution (T&D) losses, billing and collection efficiency, system reliability (SAIFI/SAIDI), load shedding, new connections, safety, and consumer complaints.

The Performance Evaluation Report 2024 highlights both progress and setbacks in the power sector for the fiscal year 2023-24. While some areas showed improvement, and challenges such as high T&D losses, poor recovery rates, and inadequate safety measures persist. The report draws comparisons with the previous four years (2019-2023), providing a clear picture, where DISCOs have succeeded and where they have fallen short. Among the key findings, the most pressing issues are the high T&D losses, low revenue collection, and system unreliability, which continue to fuel the growth of circular debt and undermine the quality of service provided to consumers.

Transmission and Distribution (T&D) Losses:

T&D losses remain a major challenge in Pakistan's power sector. Despite NEPRA's consistent guidance and directives for DISCOs to reduce these losses and meet specified targets, none of the distribution companies have achieved the required limits. As a result, these losses have led to an estimated Rs. 281 billion drain on the national exchequer. This loss has been calculated including KE, however, the contribution of DISCOs is around Rs. 276 Billion. PESCO, LESCO, QESCO, and SEPCO are the largest contributors to this financial shortfall, accounting for Rs. 96 billion, Rs. 47.5 billion, Rs. 37 billion, and Rs. 28.7 billion, respectively.

NEPRA has allocated substantial funding for investment and O&M to support projects aimed at reducing T&D losses—such as addressing system constraints, shortening feeder lengths, implementing automated metering, and conducting

preventive maintenance. However, DISCOs have shown reluctance to execute these critical initiatives, which has impeded progress in improving system efficiency and reducing losses.

Billing & Collection:

Maximizing revenue collection is crucial for the financial health of DISCOs and for reducing circular debt. However, no DISCO achieved the target of 100% recovery in FY 2023-24. IESCO, GEPCO, FESCO, LESCO and MEPCO came closest, with recovery rates ranging from 96% to 97%, while PESCO and K-Electric exceeded 90%. In contrast, HESCO has maintained low recovery rates of 76.40% showing minimal improvement. QESCO and SEPCO performed the worst, with a troubling recovery rate of just 65.41 and 31.79% respectively, even lower than the previous year. These low recovery rates have severely impacted revenues, resulting in a loss of over Rs. 380 billion to the national exchequer. If excludes KE, it will be Rs. 315 Billion for XW-DISCOs

SAIFI and SAIDI:

NEPRA emphasizes the importance of reliable power supply for economic growth and uses two key metrics—SAIFI (System Average Interruption Frequency Index) and SAIDI (System Average Interruption Duration Index)—to assess distribution system reliability. Based on the provided data for FY 2023-24, most DISCOs fell short of NEPRA's standards. While IESCO, FESCO, LESCO, and MEPCO showed some improvements, they still remained close to the targets. In contrast, PESCO, GEPCO, QESCO, SEPCO, HESCO, and K-Electric significantly underperformed and failed to meet the set benchmarks. Additionally, all DISCOs underperformed on SAIDI, indicating ongoing reliability issues.

New Connections:

Despite ample generation capacity, power demand remains low, partly due to delays in providing new connections to eligible consumers. Under Rule 4 (c) of the Performance Standards Distribution Rules (PSDR) 2005, DISCOs are required to provide over 95% of new connections within the specified timeframe.

The data for FY 2023-24 shows mixed performance. PESCO, LESCO, HESCO, SEPCO, and K-Electric met the requirement, connecting over 95% of eligible consumers. However, GEPCO and QESCO fell just short, while IESCO, FESCO, and MEPCO failed to meet the target, leaving 13-14% of eligible consumers without timely connections.

This delay not only causes financial losses but also leaves many consumers without power, despite available capacity. As of June 2024, approximately 137,862 eligible consumers had not received their connections on time, despite paying for services they did not receive.

Load Shedding:

NEPRA remains deeply concerned about the excessive and persistent load shedding across Pakistan, which disrupts daily life, hampers economic activities, and erodes consumer confidence. Despite receiving adequate power allocations based on the Aggregate Technical & Commercial (AT&C) losses policy, DISCOs often draw less power than needed, worsening the load shedding situation. This practice violates the NEPRA Act of 1997 and the Performance Standards Distribution Rules of 2005. As a result, NEPRA has initiated legal proceedings against several DISCOs, including PESCO, QESCO, HESCO, SEPCO, and K-Electric, for these violations.

The AT&C-based load shedding policy, introduced in 2013 to improve revenue collection, has persisted for over a decade. However, it has failed to reduce AT&C losses significantly, with many feeders remaining in the same or worse load-shedding categories. NEPRA believes this policy unfairly penalizes compliant consumers by subjecting them to load shedding due to the defaults of a few non-paying consumers.

To address this, NEPRA urges DISCOs to eliminate AT&C-based load shedding and disconnect individual defaulters instead.

Complaints:

NEPRA remains committed to safeguarding consumer interests and has consistently urged DISCOs to improve their complaint handling processes to ensure prompt resolution and consumer satisfaction. In FY 2023-24, DISCOs reported a total of 3,403,622 complaints, spanning a range of issues. However, discrepancies in complaint volumes across DISCOs raise concerns. For example, SEPCO reported only 2,845 complaints, which could either indicate an exceptionally efficient system or suggest data inaccuracies. Meanwhile, K-Electric accounted for 35% of the total complaints, suggesting a more robust system for capturing consumer feedback. These variations highlight the need for a standardized and transparent complaint management system across all DISCOs to ensure timely, accurate reporting and effective resolution of consumer concerns.

Safety:

In FY 2023-24, safety in the power sector took a concerning turn, with 140 fatalities reported across distribution companies—34 employees and 106 members of the public. K-Electric accounted for the largest share, followed by IESCO and PESCO. K-Electric attributed many incidents to consumer negligence or accidents occurring on private property.

NEPRA has been closely monitoring these fatalities and initiated investigations under Section 27A of the NEPRA Act, resulting in significant fines for all DISCOs. These investigations revealed that many accidents were linked to poor earthing/grounding of poles and structures in the distribution network.

In response, NEPRA has mandated that DISCOs submit detailed plans for improving earthing and expedite their implementation. Despite this, several DISCOs have failed to comply, prompting legal actions. NEPRA continues to monitor progress monthly to ensure compliance and improve safety standards across the network.

Conclusion:

The FY 2023-24 Performance Evaluation Report highlights the persistent challenges in Pakistan's power sector, including high transmission and distribution losses, poor billing and collection efforts, excessive load shedding, and delays in providing new connections. Safety remains a major concern, with a troubling number of fatalities among both employees and the public.

Addressing these issues requires significant structural reforms. Key solutions include the potential division of large DISCOs into smaller entities, privatization or public-private partnerships, reducing union influence, discontinuing the AT&C losses policy, leveraging modern technology, and adopting a customer-centric approach. These reforms are essential for improving system efficiency and overall performance.

It is clarified that this PER presents the data received from the DISCOs up to 30th June, 2024. Further, this report shall not be construed or liable for any legal claims/disputes/proceedings at any forum.

1. INTRODUCTION

As per Rule 7 of the Performance Standards (Distribution) Rules (PSDR) 2005, each distribution company must submit an Annual Performance Report to NEPRA by August 31 of the following year, following a specified format. The report should include:

- System Performance Reports
- Consumer Service Performance Reports
- A detailed written report from the distribution companies on their performance and improvement plans

Additionally, Rule 7(2) requires the report to include information on compliance with the PSDR for the year, along with a comparison to the previous year's compliance report.

This document provides an analysis of key performance metrics based on data submitted by distribution companies over the last five years, focusing on the following parameters:

- Transmission and Distribution Losses
- Recovery
- System Average Interruption Frequency Index (SAIFI)
- System Average Interruption Duration Index (SAIDI)
- Percentage of consumers who did not receive new connections within the required time
- Consumer complaints regarding voltage issues
- Average load shedding duration (in hours)
- Total consumer service complaints
- Fault Rate (Faults/Km)
- Electrical incidents leading to death, disability, or serious injury to staff or the public

In response to the NEPRA Amendment Act of 2018 and the separation of distribution companies into network and supplier roles, new performance standards have been developed. The Performance Standards Supplier Regulations 2023 have been finalized, while the Performance Standards Distribution Regulations for the network are under finalization.

2. ANALYSIS

2.1 Transmission and Distribution (T&D) losses

Energy losses in the electricity system are classified into technical and commercial losses.

- Technical losses are inherent to the system, resulting from energy dissipation in conductors and equipment during transmission, transformation, and distribution. These losses can be minimized through efficient system design, planning, and maintenance.
- Non-technical losses arise from factors like theft, unauthorized connections, and meter tampering. These losses are harder to control and require robust governance, security, and legal enforcement to address.

NEPRA considers T&D losses a critical issue and sets strict targets for DISCOs, aiming for single-digit loss percentages.

Name of DISCO	Actual Reported (%)	Allowed in Tariff (%)	Breach of Target (%)
PESCO	38.14	19.71	18.43
IESCO	8.85	7.31	1.54
GEPCO	11.54	9.00	2.54
FESCO	9.86	8.74	1.12
LESCO	15.92	10.00	5.92
MEPCO	15.28	11.83	3.45
QESCO	29.77	14.04	15.73
SEPCO	34.91	16.68	18.23
HESCO	27.62	18.06	9.56
K-Electric	15.99	14.58	1.41
W.AVG:	**18.08**	**12.15**	**5.93**

Table 01: Transmission and Distribution Losses

The data related to actual T&D losses of DISCOs has been considered as given in Circular Debt Report for the month of June, 2024 except KE. The figure of KE's actual losses has been reported by itself and the same has been shown.

NEPRA has consistently emphasized the need for improved governance in DISCOs to reduce T&D losses, a major contributor to circular debt. However, in FY 2023-24, DISCOs' performance deteriorated, with T&D losses rising to 18.08%, up from 16.38% in FY 2022-23. Despite NEPRA setting a target of 12.15% for T&D losses, the actual losses exceeded the target by a significant 5.93%.

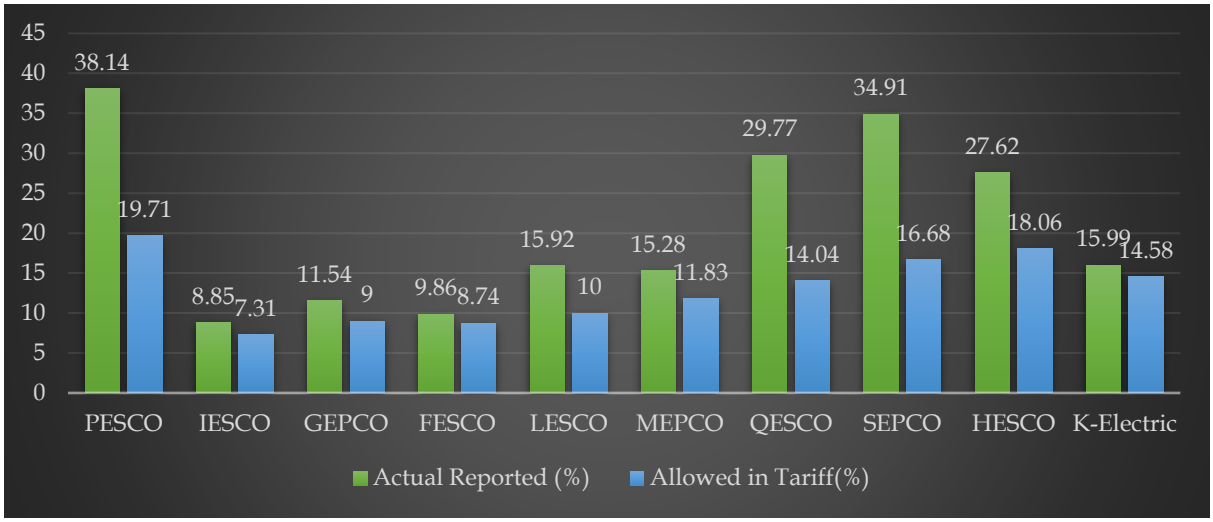

Figure 01: Transmission and Distribution Losses

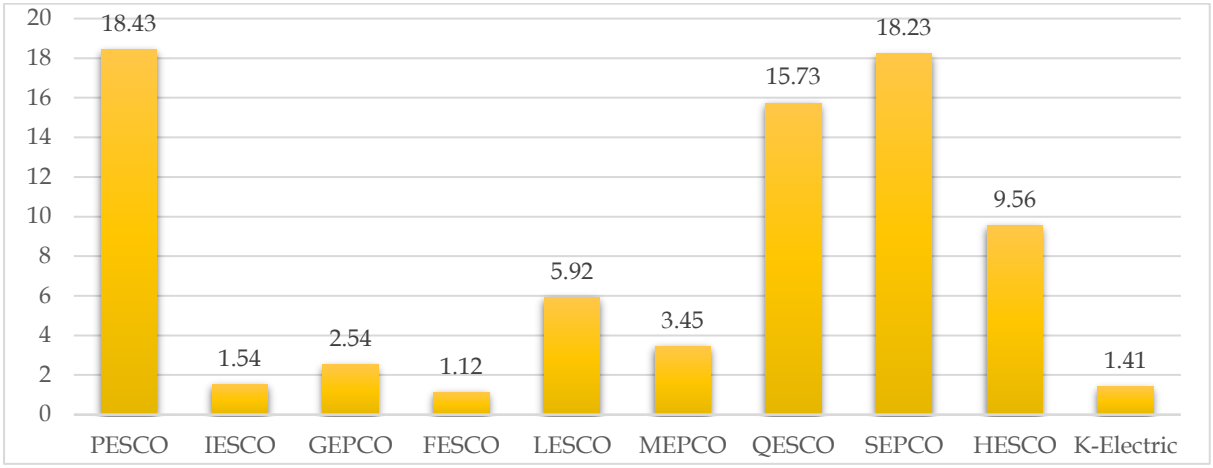

Figure 02: Breach of NEPRA T&D Targets (Transmission & Distribution losses)

The data presented above highlights that no DISCO has fully met NEPRA's targets. While IESCO, FESCO, and K-Electric are close to achieving their targets, GEPCO and MEPCO are still notably below the benchmark. More concerning is the significant underperformance of LESCO, PESCO, QESCO, SEPCO, and HESCO, which has been a major factor in the rising circular debt.

2.1.1 Financial loss due to breach of T&D loss target by Distribution Companies

Name of DISCO	Total Energy (M. kWh)	Total Financial Loss (Rs. Mln)
PESCO	2,611.66	96,032.81
IESCO	186.91	5,981.28
GEPCO	301.67	9,095.54
FESCO	176.27	4,932.23
LESCO	1,492.77	47,571.13
MEPCO	683.23	22,504.73
QESCO	904.25	37,135.94
SEPCO	734.67	28,745.12

HESCO	489.53	23,215.19
K-Electric	222.39	6,418.93
Total	7,803.36	281,632.89

Table 02: Financial Loss due to breach of T&D loss target

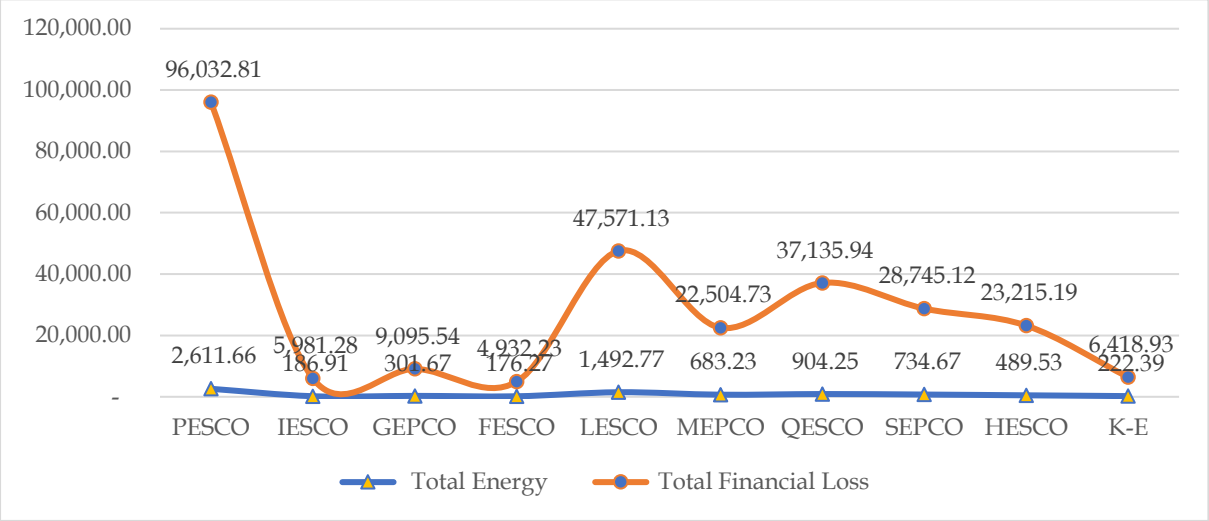

Figure 03: Financial Loss due to breach of T&D loss target

The financial impact of failing to meet T&D loss targets, amounting to Rs. 281.632 Billion for the reported period, is illustrated in the table and graph above. This loss has been calculated including KE, however, the contribution of DISCOs is around Rs. 276 Billion.

2.2 Billing & Collection:

Bill collection is crucial for maintaining a reliable electricity supply and improving financial stability. Effective revenue recovery helps reduce fiscal deficits and generate funds for utility expansion. Recognizing its importance, NEPRA has made billing and collection a key performance indicator for DISCOs, setting a target of 100% recovery to ensure financial health and sustainability.

Name of DISCO	Actual Recovery (%)	Target (%)	Breach of Target (%)
PESCO	91.91%	100%	8.09%
IESCO	97.03%	100%	2.97%
GEPCO	96.21%	100%	3.79%
FESCO	97.61%	100%	2.39%
LESCO	96.11%	100%	3.89%
MEPCO	97.20%	100%	2.80%
QESCO	31.79%	100%	68.21%
SEPCO	65.41%	100%	34.59%
HESCO	76.40%	100%	23.60%
K-Electric	91.54%	100%	8.46%
W. Avg:	92.18%	100%	7.82%

Table 03: Recovery (%)

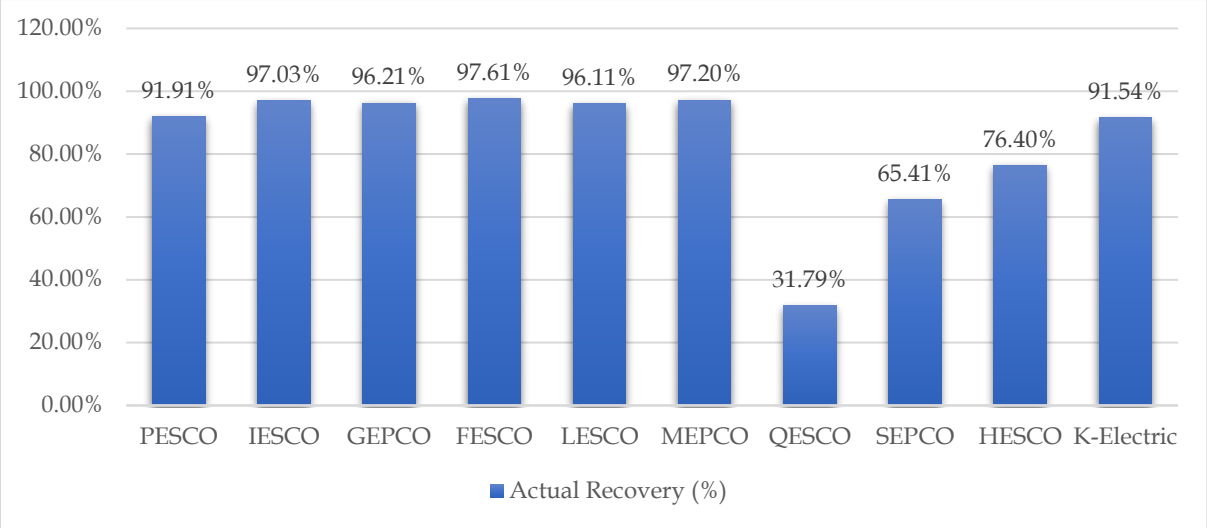

Figure 04: Recovery (%)

Figure 05: Less Recovery (%)

The data related to actual recovery % has been drawn from the Circular Debt Report for the month of June, 2024 except KE. Whereas the figure of KE's actual recovery has been reported by itself and the same has been used.

Upon reviewing the data, none of the DISCOs achieved the target of 100% recovery in FY 2023-24. IESCO, GEPCO, FESCO, LESCO and MEPCO came closest, with recovery rates between 96% and 97%. PESCO and K-Electric have also executed more than 90% recoveries. However, HESCO has showed little improvement, with recovery rates of 76.40%. Whereas, QESCO & SEPCO had the poorest performance, with a recovery rate of just 65.41% and 31.76%, even lower than the previous year.

NEPRA sets tariffs based on 100% receivables and does not tolerate inefficiencies. The overall recovery rate of 92.18% in FY 2023-24 is concerning, especially in the context of rising circular debt, high T&D losses, and the growing per-unit cost of electricity. Urgent corrective measures are needed to improve recovery rates and reduce the financial strain on the sector.

2.2.1 Financial loss due to breach of recovery targets by Distribution Companies

Name of DISCO	Billing (Million Rs.)	Collection (Million Rs.)	Loss (Million Rs.)
PESCO	383,863.15	352,826.05	31,037.10
IESCO	522,164.54	506,677.09	15,487.45
GEPCO	468,535.50	450,775.19	17,760.31
FESCO	619,117.59	604,290.82	14,826.77
LESCO	1,014,707.83	975,243.57	39,464.26
MEPCO	686,612.57	667,364.01	19,248.56
QESCO	152,935.44	48,613.49	104,321.95
SEPCO	110,416.81	72,227.92	38,188.89
HESCO	155,825.14	119,046.10	36,779.04
K-Electric	753,181.00	689,493.00	63,688.00
Total	**4,867,359.57**	**4,486,557.24**	**380,802.33**

Table 04: Financial Loss Due to Breach of Recovery Targets

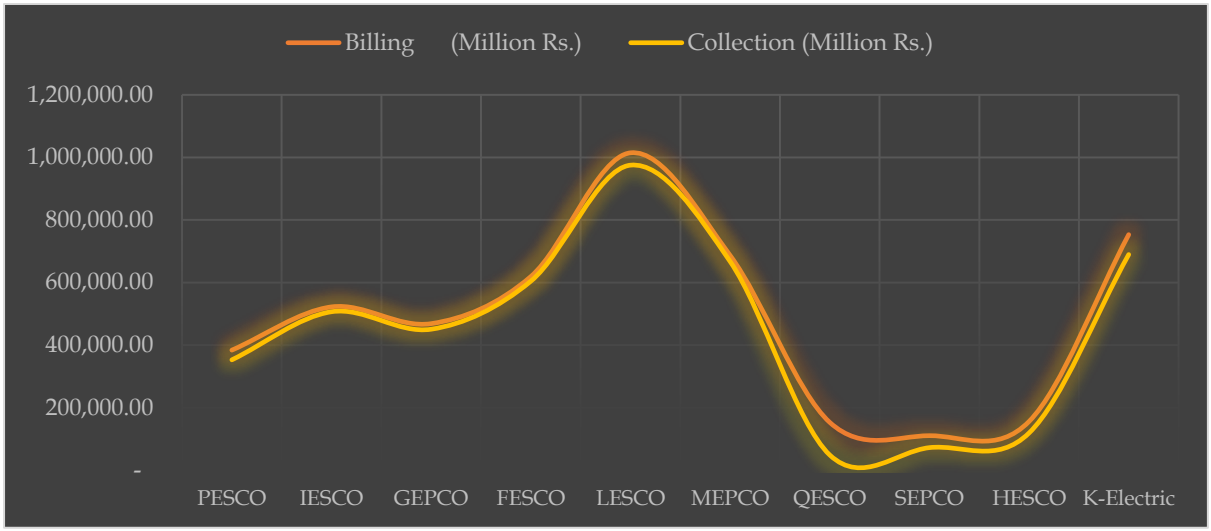

Figure 06: Comparison of Billing v/s Collection in DISCOs

Figure 07: Financial Loss Due to Breach of Recovery Targets

The table and graphs highlight the revenue losses faced by DISCOs due to poor governance and management. In FY 2023-24, DISCOs collected Rs. 4,486.557 billion against a billed amount of Rs. 4,867.359 billion, resulting in a revenue shortfall of approximately Rs. 380.802 billion about 150% higher than the previous year's loss of Rs. 236 billion. The share of all DISCO's revenue loss is around Rs. 315 billion out of the total loss of Rs. 380 billion. This loss will be absorbed by the National Exchequer or the consumers in term of surcharges. QESCO was the largest contributor to this shortfall, followed by K-Electric, LESCO, SEPCO, and HESCO. The failure to recover such a significant amount has significantly exacerbated the growing circular debt.

2.3 System Average Interruption Frequency Index (SAIFI):

SAIFI measures the average number of power interruptions a customer experiences annually, serving as a key indicator of distribution system reliability. As per Rule 4(a) of the Performance Standards (Distribution) Rules 2005, DISCOs must ensure their SAIFI does not exceed 13 interruptions per consumer per year.

Name of DISCO	Reported Figure (NO.)	Target by NEPRA (No.)	Breach of Target
PESCO	180.59	13	Far Away
IESCO	16.33	13	Near to Limit
GEPCO	55.86	13	Far Away
FESCO	34.66	13	Near to Limit
LESCO	28.19	13	Near to Limit
MEPCO	31.57	13	Near to Limit
QESCO	97.89	13	Far Away
SEPCO	80.86	13	Far Away
HESCO	131.41	13	Far Away
K-Electric	71.31	13	Far Away

Table 05: System Average Interruption Frequency Index (SAIFI)

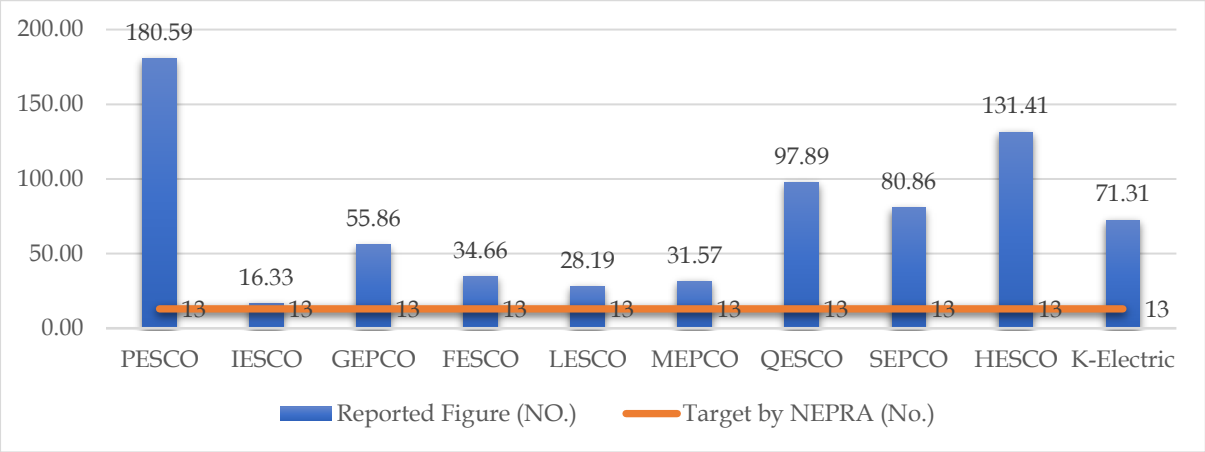

Figure 08: System Average Interruption Frequency Index (SAIFI)

The data shows that none of the distribution companies met the SAIFI standard of 13, as mandated by the Performance Standards Rules. While IESCO, FESCO, LESCO, and

MEPCO are close to the target, whereas PESCO, GEPCO, QESCO, SEPCO, HESCO, and K-Electric fall significantly short of NEPRA's reliability thresholds. Despite substantial budgets allocated by NEPRA for investment and O&M, no meaningful improvements were observed in FY 2023-24. Consumers continue to suffer from unannounced outages, often attributed to faults. Additionally, the accuracy of outage data is questionable, as DISCOs lack automated systems to properly record and monitor outages, particularly in low-tension (LT) systems.

2.4 System Average Duration Frequency Index (SAIDI):

The System Average Duration Frequency Index (SAIDI) is a key metric used to assess the reliability of electrical power systems, measuring the average duration of power interruptions experienced by consumers over a given period, typically expressed in minutes per year. According to Rule 4(b) of the Performance Standards (Distribution) Rules 2005, a distribution company must ensure that its SAIDI does not exceed fourteen (14) minutes per year per consumer. This metric provides an essential measure of service reliability for utilities, regulators, and consumers.

Name	Reported Figure (Min.)	Target by NEPRA (Min)	Breach of Target
PESCO	13,744.31	14	Far Away
IESCO	915.03	14	Far Away
GEPCO	4,216.56	14	Far Away
FESCO	1,200.08	14	Far Away
LESCO	3,178.75	14	Far Away
MEPCO	3,726.61	14	Far Away
QESCO	8,008.12	14	Far Away
SEPCO	1,378.66	14	Far Away
HESCO	7,463.13	14	Far Away
K-Electric	4,168.73	14	Far Away

Table 06: System Average Interruption Duration Index (SAIDI)

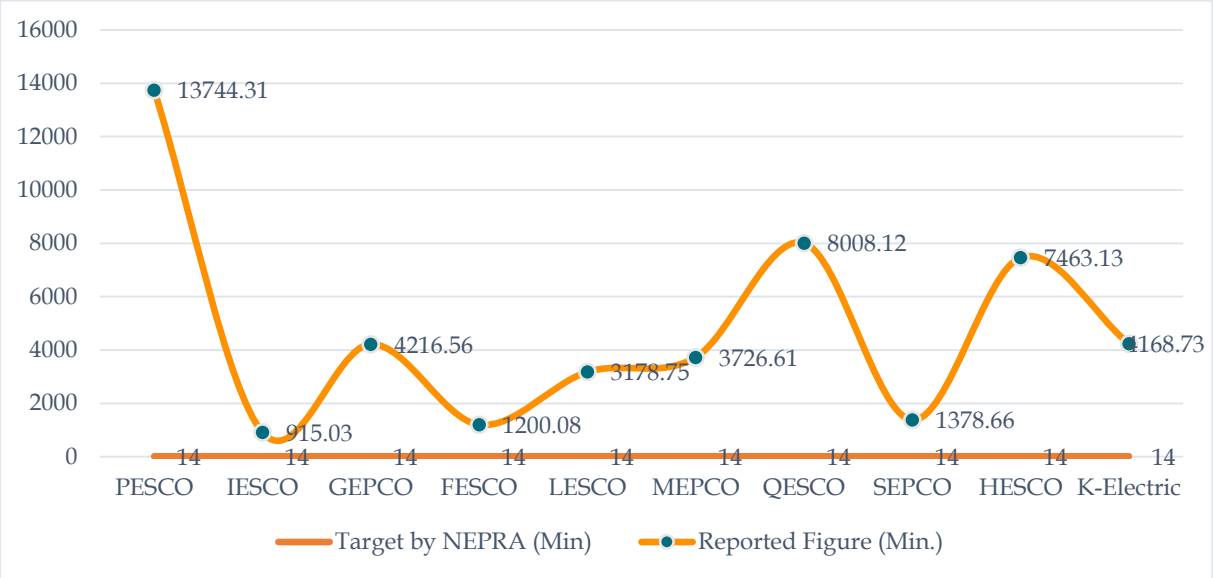

Figure 09: System Average Interruption Duration Index (SAIDI)

The table and graph above highlight that all DISCOs fall significantly short of the 14-minute SAIDI standard for service interruption duration. This is concerning, especially given the substantial investments approved for these companies. Despite the funding, there has been little to no improvement in performance, with some DISCOs showing a decline in operational effectiveness compared to the previous year.

2.5 Time Frame for New Connection (% age of Pending Ripe Connections):

According to Rule 4(c) of the Performance Standards (Distribution) Rules 2005, distribution companies must provide electricity services to at least 95% of eligible consumers within the specified timeframe. This requirement, set under section 21(2)(b) of the Act, ensures that new connections are installed promptly after application. The following summary presents the data provided by DISCOs regarding the timely provision of new connections:

Name of DISCO	% Eligible consumers who were not provided new connections within the prescribed time frame	Allowed Limit in PSDR 2005(%)	Breach (%)
PESCO	1.70	5.00	0.00
IESCO	13.64	5.00	8.64
GEPCO	5.01	5.00	0.01
FESCO	13.62	5.00	8.62
LESCO	2.81	5.00	0.00
MEPCO	8.76	5.00	3.76
QESCO	6.32	5.00	1.32
SEPCO	0.57	5.00	0.00
HESCO	0.06	5.00	0.00
K-Electric	3.58	5.00	0.00

Table 07: % Eligible consumer who were not provided new connection within prescribed time frame

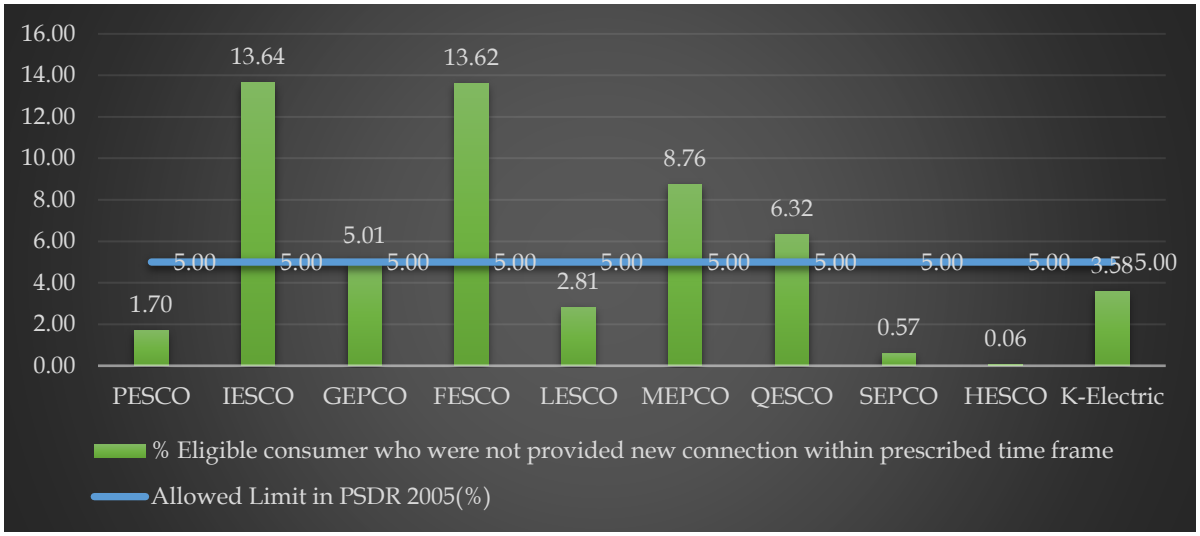

Figure 10: % Eligible consumers who were not provided new connection within prescribed time frame

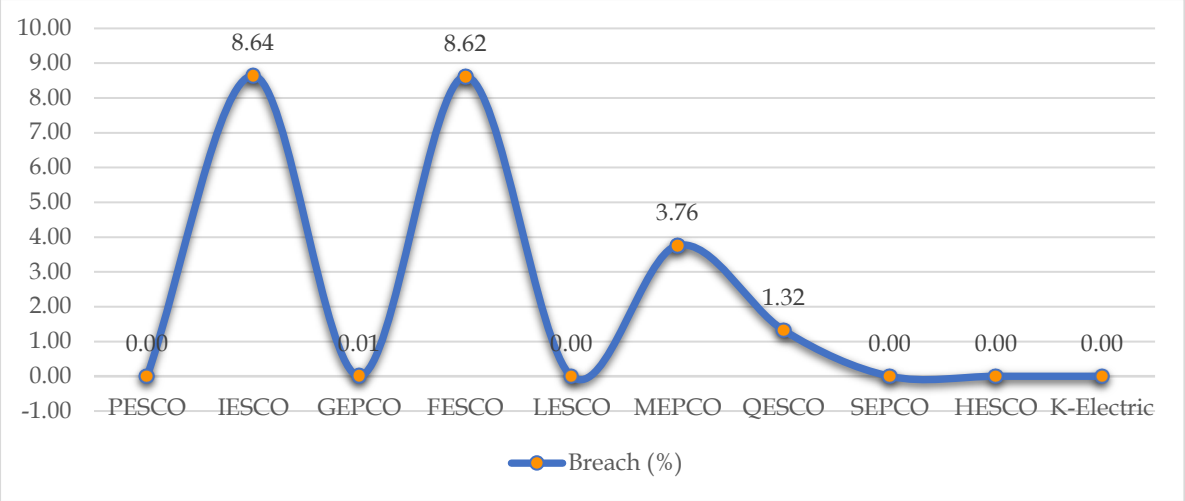

Figure 11: Breach of Targets (%)

The table above shows the percentage of consumers who did not receive new connections within the required timeframe for FY 2023-24. According to the data submitted by DISCOs, PESCO, LESCO, HESCO, SEPCO, and K-Electric exceeded the 95% threshold, meeting NEPRA's standard. GEPCO and QESCO were close but fell slightly short of the target. However, IESCO, FESCO, and MEPCO failed to meet the requirement, as they could not provide new connections to 13.64%, 13.63%, and 8.76% of eligible consumers, respectively, despite timely payments.

NEPRA closely monitors progress through its Online Data Exchange Portal, where DISCOs submit monthly data on pending connections, unserved load (MW), and the duration of delays. The following provides the latest DISCO-wise data as of June 2024.

Name of DISCO	Domestic		Commercial		Industrial		Agri		Other		Number of Pending Applications	
	Total No.	Load (kW)	Total No.	Load (kW)	Total No.	Load (kW)	Total No.	Load (kW)	Total No.	Load (kW)	Total No.	Load (kW)
PESCO	1,781	4,829	166	1,103	26	94,724	14	361	20	1,025	2,007	102,042
IESCO	2,824	7,015	389	1,537	3	427	1	38	12	468	3,229	9,485
GEPCO	8,867	18,232	361	1,673	3	210	6	127	1	2	9,238	20,244
FESCO	16,594	49,459	665	2,843	29	1,787	21	236	47	1,704	17,356	56,029
LESCO	42,111	90,538	1,880	6,768	124	74,979	59	640	7	145	44,181	173,070
MEPCO	54,579	131,910	2,457	8,163	53	3,220	44	797	66	2,225	57,199	146,315
QESCO	1,128	2,820	294	1,029	5	805	-	-	167	3,842	1,594	8,496
SEPCO	7	322	4	38	20	4,988	6	161	3	227	40	5,736
HESCO	706	1,543	86	360	55	31,199	20	924	27	4,451	894	38,477
K-Electric	1,351	3,402	342	5,330	13	2,507	-	-	418	1,940	2,124	13,179
Total	**129,948**	**310,070**	**6,644**	**28,844**	**331**	**214,846**	**171**	**3,284**	**768**	**16,029**	**137,862**	**573,073**

Table 08: DISCO/Category wise progressive total no. of pending connections as on June, 2024

Name of DISCO	Total Nos.	Total Load (MW)	Pending connections after expiry of time limit given in NEPRA PSDR 2005					
			Up to 1 month	Up to 2 months	Up to 3 months	Up to 6 months	Up to 1 year	above 1 year
PESCO	2,007	102.04	1,875	56	2	19	8	47
IESCO	3,229	9.485	3,202	5	20	1	1	0
GEPCO	9,238	20.244	9,238	0	0	0	0	0
FESCO	17,356	56.029	17,332	14	10	0	0	0
LESCO	44,181	173.070	32,883	11,285	7	6	0	0
MEPCO	57,199	146.315	31,484	25,715	0	0	0	0
QESCO	1,594	8.496	1,427	6	14	66	42	39
SEPCO	40	5.736	17	1	3	10	4	5
HESCO	894	38.477	791	25	13	12	5	48
K-Electric	2,124	13.179	1,923	44	19	33	37	68
Total	**137,862**	**573.07**	**100,172**	**37151**	**88**	**147**	**97**	**207**

Table 09: DISCO wise aging of no. of pending ripe connections as on June, 2024

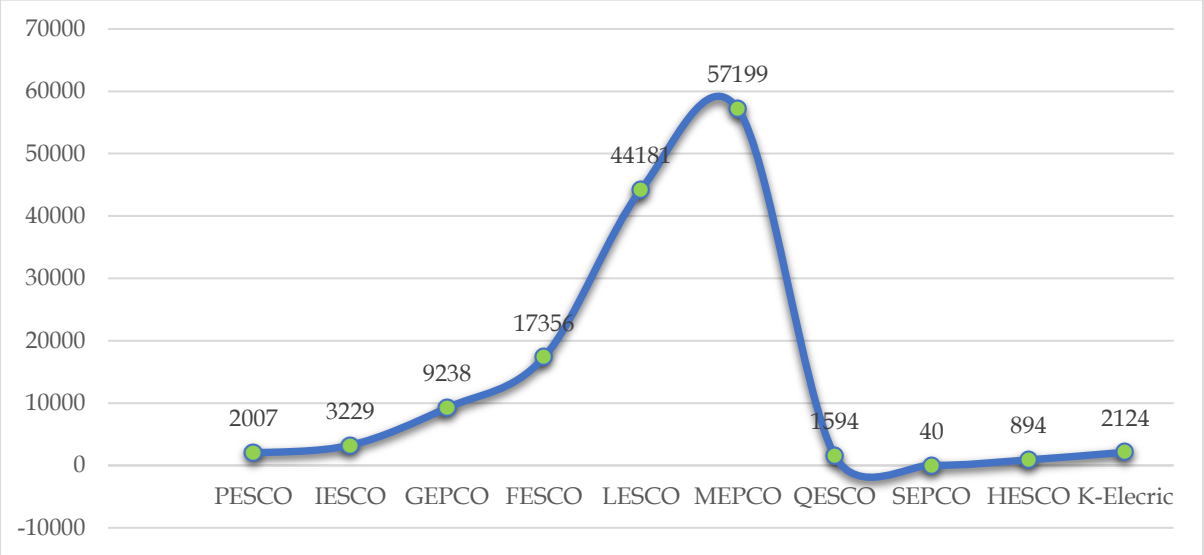

Figure 12: DISCO No. of pending ripe connections as on June, 2024

The tables above indicate that a total of 137,862 eligible consumers did not receive new connections, despite timely payments, resulting in an unmet demand of over 573 MW. This is concerning, especially given the available generation capacity. Most of the pending connections, both in number and load (MW), are from the domestic sector, though the industrial sector also represents a significant share in MW.

The failure of DISCOs, particularly PESCO and MEPCO, to meet industrial demand despite the sector's reliability and timely payments points to a critical shortfall in efforts to enhance profitability. While LESCO met the requirement of providing connections to over 95% of eligible consumers, it still has a significant backlog of pending connections, second only to MEPCO.

Additionally, discrepancies between the data in the Annual Performance Report and that submitted through the Online Data Exchange Portal were noted. NEPRA has issued written notices to all DISCOs for clarification on these inconsistencies.

2.6 Load Shedding (Hours):

As per Rule 4(f) of the PSDR 2005, distribution companies are required to have plans and schedules in place to shed up to 30% of their connected load upon NTDC's instructions. Load shedding should follow a specified order:

- *Rural areas and residential consumers in urban areas with separate feeders*
- *Non-industrial consumers in urban areas*
- *Agricultural consumers with dedicated supply*
- *Industrial consumers*
- *Schools and hospitals*
- *Defense and strategic installations*

NEPRA has consistently directed DISCOs to adhere to this order to ensure that no single class of consumers bears an undue burden. The following summarizes the average daily load-shedding hours reported by DISCOs for FY 2023-24 :

Name of DISCO	Reported figures of average daily load shedding hours	Actual Load Shedding being monitored by NEPRA
PESCO	**11**	> 10 hours as per AT&C
IESCO	**2.5**	2 to 3 Hours
FESCO	**0.22**	2 to 3 Hours
GEPCO	**0**	2 to 3 Hours
LESCO	**0.5**	2 to 3 Hours
MEPCO	**0.7**	2 to 3 Hours
QESCO	**10**	> 10 hours as per AT&C
SEPCO	**2.3**	> 8 hours as per AT&C
HESCO	**10.6**	> 8 hours as per AT&C
K-Electric	**8.52**	6 to 8 Hours

Table 10: Average Load Shedding (Hours) daily

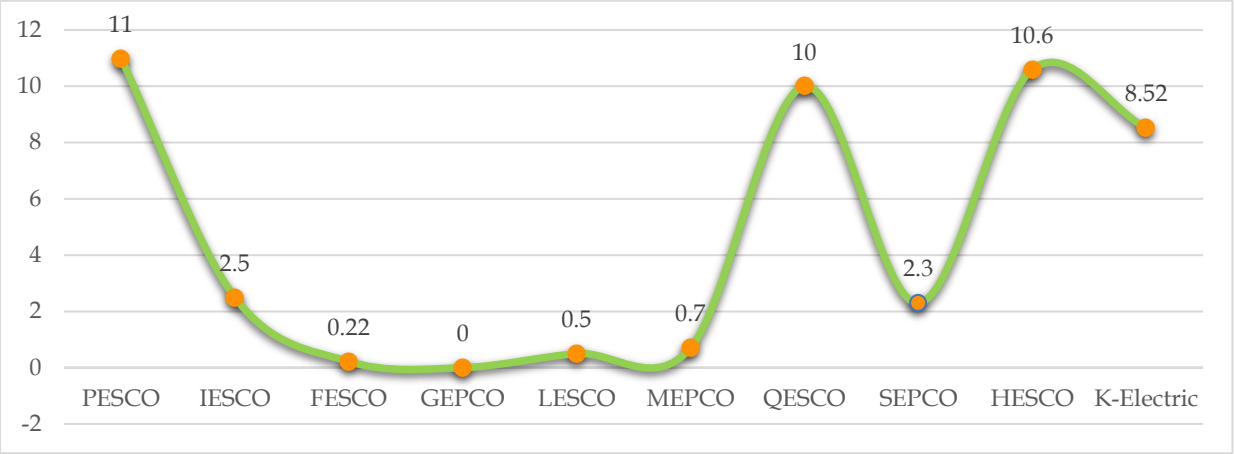

Figure 13: Average Load Shedding (Hours) daily

According to figures reported by DISCOs, the average daily load shedding across IESCO, FESCO, GEPCO, LESCO, MEPCO, and SEPCO ranges from 2 to 3 hours. However, the reported figures for SEPCO appear unreasonable when compared to weekly monitoring by NEPRA and media reports. In contrast, PESCO, QESCO, HESCO, and K-Electric reported load shedding durations of 4 to 10 hours, which aligns with consumer complaints and media reports.

It is also concerning that PESCO, QESCO, SEPCO, HESCO, and K-Electric have continued to base load shedding on AT&C losses, a practice that is not in line with the PSDR 2005 and has never been endorsed by NEPRA. As part of its regulatory role, NEPRA has initiated legal actions and imposed fines on these DISCOs for violating the performance standards. The AT&C-based load shedding was originally introduced to improve recoveries through better governance, but its application has expanded in these companies over time, contrary to the objectives outlined in the National Electricity Policy 2021.

In contrast, K-Electric has made notable progress, significantly reducing AT&C-based load shedding in its territory by approximately 75%. The company's investment plan for FY 2024-2030 aims to eliminate load shedding from 95% of its feeders. NEPRA has directed K-Electric to ensure that any necessary load shedding is carried out at the PMT level, in compliance with PSDR 2005.

NEPRA's regulations specify that DISCOs may only implement load shedding in cases of national generation shortages or transmission constraints. The Authority closely monitors daily load shedding patterns by assessing each DISCO's demand, allocated quotas, and actual power draw. Based upon the monitoring results strict directions are issued to DISCOs in case of any deviation.

2.7 Nominal Voltages (% age of consumers whose voltages remained beyond the prescribed limit):

As per Rule 4(d) of the Performance Standards (Distribution) Rules 2005, a distribution company is required to supply power to at least 95% of its consumers within ±5% of the nominal voltage range. DISCOs have submitted data on consumer complaints related to voltage fluctuations. This data has been analyzed to calculate the percentage of consumers who experienced voltage levels outside the prescribed limits. A summary of these findings is presented below:

Name of DISCO	No of Consumers made complaints about the voltage	Total No. of Consumers in DISCO	% of Complaints w.r.t total no. of consumer	Allowed % in PSDR 2005
PESCO	21,816	3,908,974	0.558	5
IESCO	4,642	3,822,557	0.121	5
GEPCO	9,501	4,596,014	0.207	5
FESCO	7,448	5,228,396	0.142	5
LESCO	5,496	6,589,136	0.083	5

MEPCO	2,982	7,833,402	0.038	5
QESCO	3,350	698,215	0.480	5
SEPCO	845	824,150	0.103	5
HESCO	164	1,243,679	0.013	5
K-Electric	125,050	3,664,781	3.412	5

Table 11: No. of Consumers Complaints made about Nominal Voltages

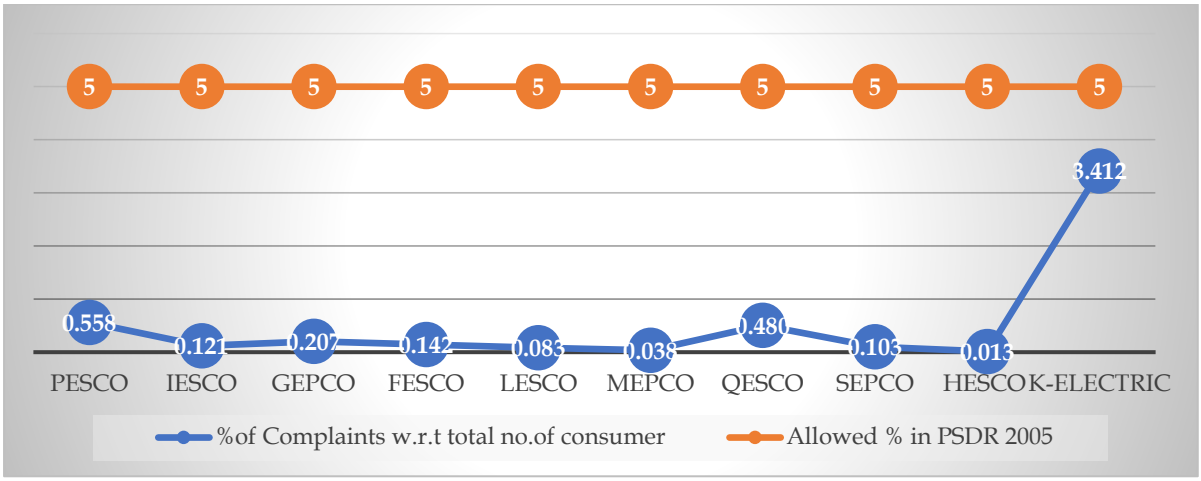

Figure 14: No. of Consumers Complaints made about Nominal Voltages

The data shows that K-Electric had the highest number of voltage-related complaints, with 125,050, followed by PESCO with 21,816 and GEPCO with 9,501. In contrast, SEPCO and HESCO reported very few complaints—845 and 164, respectively. This disparity raises concerns about the accuracy of these figures, suggesting either inadequate complaint management systems or database issues at SEPCO and HESCO. Given their large consumer bases (824,150 for SEPCO and 1,243,679 for HESCO), it seems unlikely that only a small fraction experienced voltage issues. Additionally, the report claims that over 95% of consumers across all DISCOs received voltage within acceptable limits, a figure that appears overly optimistic and warrants further verification.

2.8 Consumer Service Complaints

Consumer service complaints are a vital Key Performance Indicator (KPI) for distribution companies, reflecting their responsiveness and service quality at the subdivision level. Each subdivision is responsible for promptly addressing issues related to power supply, billing, and service disruptions, ensuring customer satisfaction. Monitoring complaint volumes and resolution rates helps companies identify recurring issues, streamline processes, and improve service standards, ultimately enhancing consumer trust and regulatory compliance.

The table and graph below summarize the consumer complaints received by DISCOs in FY 2023-24. The data is analyzed based on the average daily number of complaints per complaint center, with a focus on how many were resolved within the same fiscal year.

Name of DISCO	Reported Complaints	Total No. of complaint center in DISCO	No. of Complaints per complaint center	Average number of complaints per day per complaint center
PESCO	95,097	200	475.48	1.303
IESCO	380,203	116	3,277.61	8.980
GEPCO	84,711	123	688.70	1.887
FESCO	342,806	341	1,005.296	2.754
LESCO	931,626	201	4,634.95	12.699
MEPCO	153,350	190	807.105	2.211
QESCO	41,812	58	720.89	1.975
SEPCO	2,845	64	44.453	0.122
HESCO	94,810	72	1,316.80	3.608
K-Electric	1,276,362	27	47,272.66	129.514

Table 12: Consumer Complaints

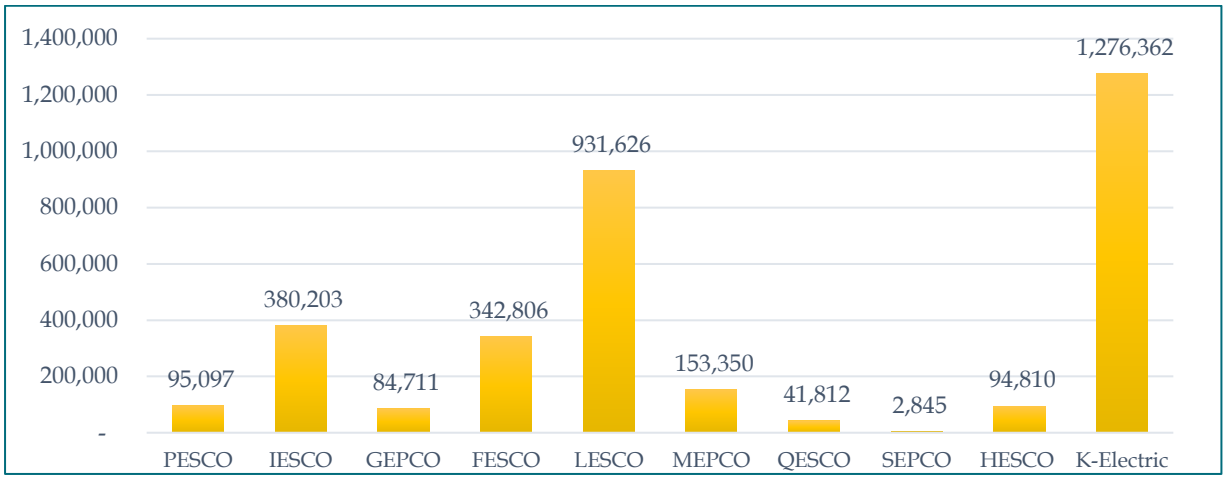

Figure 15: Consumer Complaints

SEPCO reported nearly zero complaints per day per complaint center, suggesting either a lack of a complaint management system or inaccurate data reporting. In contrast, K-Electric recorded an average of 129 complaints daily per center, reflecting a more effective complaint registration and handling process. Meanwhile, PESCO, GEPCO, MEPCO, QESCO, and HESCO each reported only 2-3 complaints per day per center, which may not accurately represent the actual situation, indicating potential gaps in their complaint tracking systems.

NEPRA has repeatedly instructed DISCOs to implement computerized databases for managing complaints. However, many still rely on outdated, manual record-keeping methods, such as printed registers, which are inconsistently maintained and hinder the accurate tracking of consumer complaints.

2.9 Safety (No. of Fatalities for Employee & Public):

Rule 4(g) of the Performance Standards (Distribution) Rules, 2005, mandates that distribution companies implement safety measures for both their employees and the public, in line with their Distribution Code.

The data for FY 2023-24 reveals a troubling total of 140 fatalities, including both employees and members of the public, within the service areas of distribution companies. This indicates a significant failure by DISCOs to comply with established safety standards, underscoring the urgent need for stricter enforcement of safety protocols to prevent such incidents in the future.

Name of DISCO	No. of fatalities for employees	No. of fatalities for Public	Total No. of fatalities reported
PESCO	7	13	20
IESCO	5	21	26
GEPCO	4	5	9
FESCO	4	3	7
LESCO	9	9	18
MEPCO	1	2	3
QESCO	0	9	9
SEPCO	1	4	5
HESCO	1	8	9
K-Electric	2	32	34
Total	**34**	**106**	**140**

Table 13: Safety Accidents

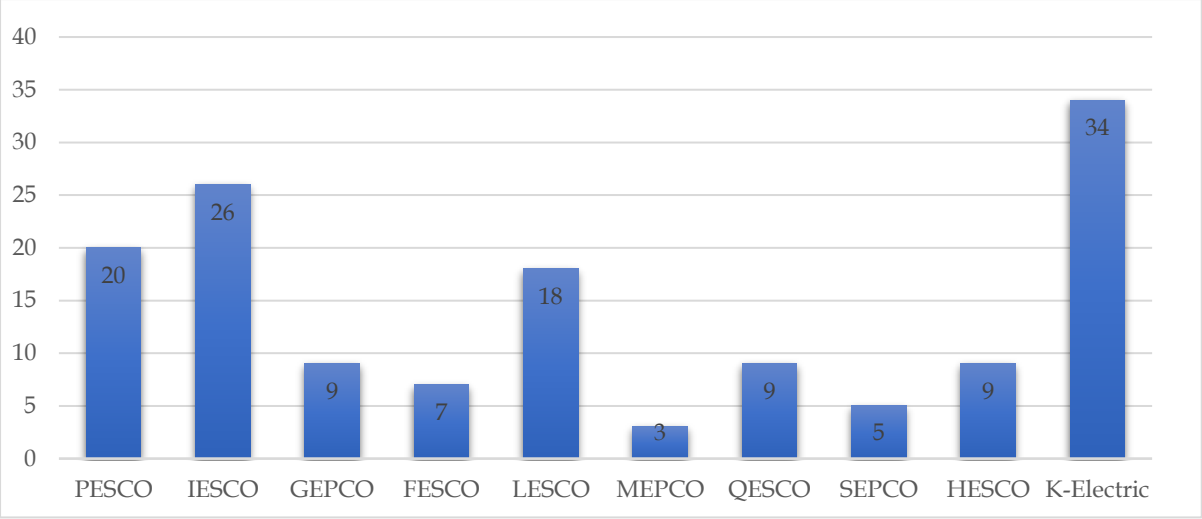

Figure 16: Safety Accidents

The table and graph above highlight that K-Electric reported the highest number of fatalities, followed by IESCO, PESCO, and LESCO in FY 2023-24. KE claims that most of these fatalities occurred due to consumer-related issues, such as illegal connections (kunda) on private premises. NEPRA is investigating each case under Section 27A of

the NEPRA Act to verify these claims. Notably, the majority of fatalities involved the general public, while MEPCO and SEPCO reported the lowest numbers.

As the regulatory authority, NEPRA prioritizes safety and has consistently urged DISCOs to strengthen their safety culture by adhering to established standards. NEPRA's Health, Safety, and Environment (HSE) Department oversees safety regulations, reviews standards, and ensures compliance. Following investigations into fatal accidents, substantial fines have been imposed on DISCOs, and they have been directed to conduct safety surveys—focusing on the earthing and grounding of poles and structures—and implement corrective measures. Furthermore, all DISCOs have been instructed to submit comprehensive safety plans, which NEPRA is currently monitoring.

2.10 Fault Rate (No. of Faults/KM):

The fault rate is a key performance indicator that measures the number of faults per kilometer of the distribution network. It reflects the reliability and quality of the power supply, with a lower fault rate indicating a well-maintained and efficient system. A higher fault rate may signal infrastructure issues, poor maintenance, or environmental factors affecting the network. By monitoring fault rates, distribution companies can identify vulnerable areas, prioritize maintenance, reduce downtime, and enhance service reliability, ultimately improving consumer satisfaction and lowering operational costs.

Name	Total length of Distribution System (km)	Total No. of Faults	Fault Rate (No. of Faults/km)
PESCO	90,996.80	149,934	1.65
IESCO	60,068.55	175,779	2.93
GEPCO	47,010.00	153,521	3.27
FESCO	83,148.31	94,853	1.14
LESCO	51,767.99	272,314	5.26
MEPCO	51,948.7	32,782	0.63
QESCO	73,158.32	102,599	1.40
SEPCO	41,831.33	33,100	0.79
HESCO	47,461.59	66,035	1.39
K-Electric	42,169.00	136,115	3.23

Table 14: Fault Rate (No. of faults/km)

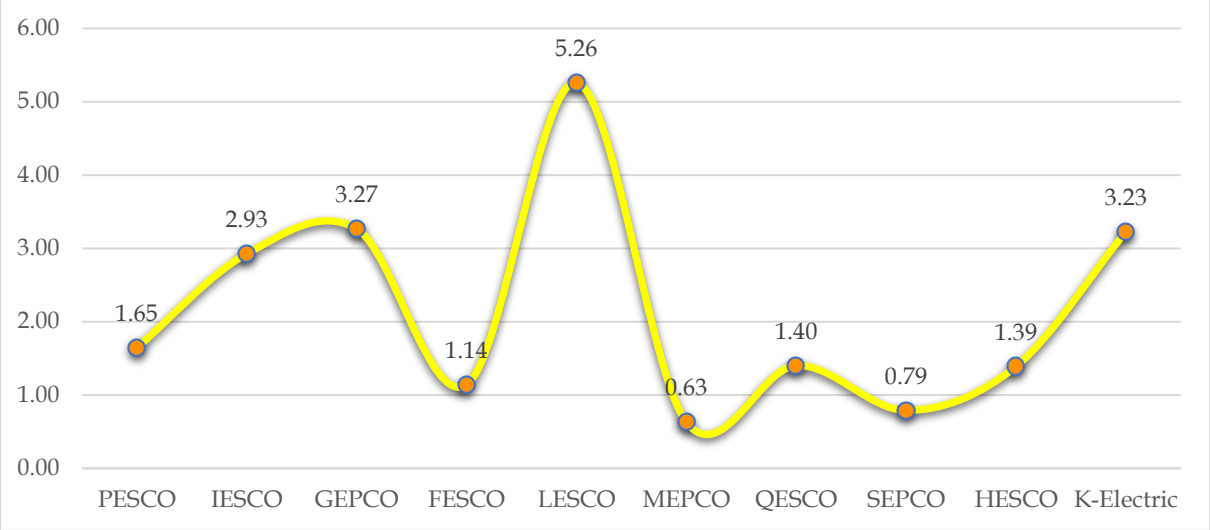

Figure 17: Fault Rate (No. of faults/km)

The table above presents fault ratios per kilometer based on data from DISCOs. However, some reported figures, particularly for MEPCO & SEPCO, appear inflated, suggesting that the system is more efficient than it actually is. In contrast, LESCO and GEPCO reported more realistic fault ratios of 4 to 5 faults per kilometer. While DISCOs have portrayed their systems as highly reliable in FY 2023-24, daily reports and consumer complaints about frequent outages suggest otherwise. Additionally, the reported values for SAIFI and SAIDI seem inconsistent with the fault rate data, highlighting discrepancies in the overall performance metrics. Ideally, these indicators should align to reflect true operational performance.

3 COMPARISON OF DATA FOR FY 2022-23 WITH THE LAST FOUR YEARS (2019-20, 2020-21, 2021-22 & 2022-23)

3.1 Transmission and Distribution (T&D) Losses (% age):

Name of DISCO	2019-20	2020-21	2021-22	2022-23	2023-24
PESCO	38.9	38.2	37.23	37.13	38.14
IESCO	8.69	8.55	8.18	8.06	8.85
GEPCO	9.51	9.23	9.07	8.61	11.54
FESCO	9.6	9.3	9.1	8.84	9.86
LESCO	12.4	12	11.5	11.29	15.92
MEPCO	15.2	14.9	14.7	14.22	15.28
QESCO	26.7	27.9	28.1	26.72	29.77
SEPCO	36.3	35.3	35.6	34.39	34.91
HESCO	28.9	28	27.4	27.49	27.62
K-Electric	19.73	17.54	15.3	15.27	15.99

Table 15: Transmission and Distribution (T&D) Losses

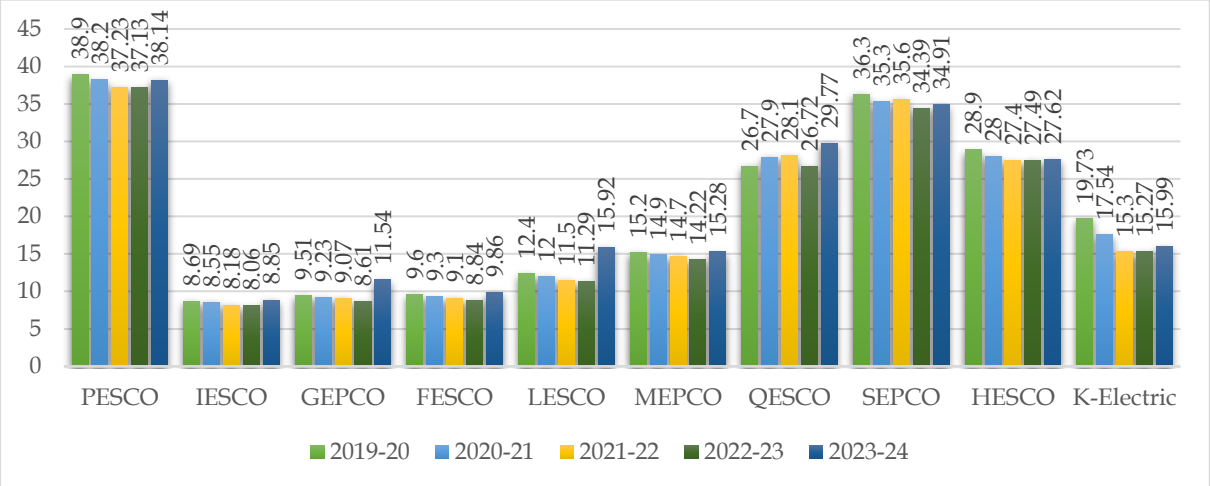

Figure 18: Transmission and Distribution (T&D) Losses

The table and figure above show a mixed trend in T&D losses over the past four years, with no improvements in FY 2023-24. In fact, losses have increased compared to the previous year. DISCOs such as PESCO, QESCO, SEPCO, and HESCO continue to experience relatively high losses over the past five years, indicating persistent inefficiencies in their operations.

3.2 Billing & Collection (% age):

Name of DISCO	2019-20	2020-21	2021-22	2022-23	2023-24
PESCO	87.7	102.5	92.2	92.10	91.91
IESCO	90.3	116.87	95.62	106.32	97.03
GEPCO	94.36	106	99.7	99.86	96.21
FESCO	94.18	102	99.53	98.17	97.61
LESCO	94.6	98.72	97.1	94.30	96.11
MEPCO	94.21	103.61	99.73	98.13	97.20
QESCO	80.6	39.8	35.4	36.90	31.79
SEPCO	56.6	64.7	64.7	68.20	65.41
HESCO	70.1	76.7	75.1	75.90	76.40
K-Electric	92.14	94.8	96.6	92.76	91.54

Table 16: Billing & Collection (%)

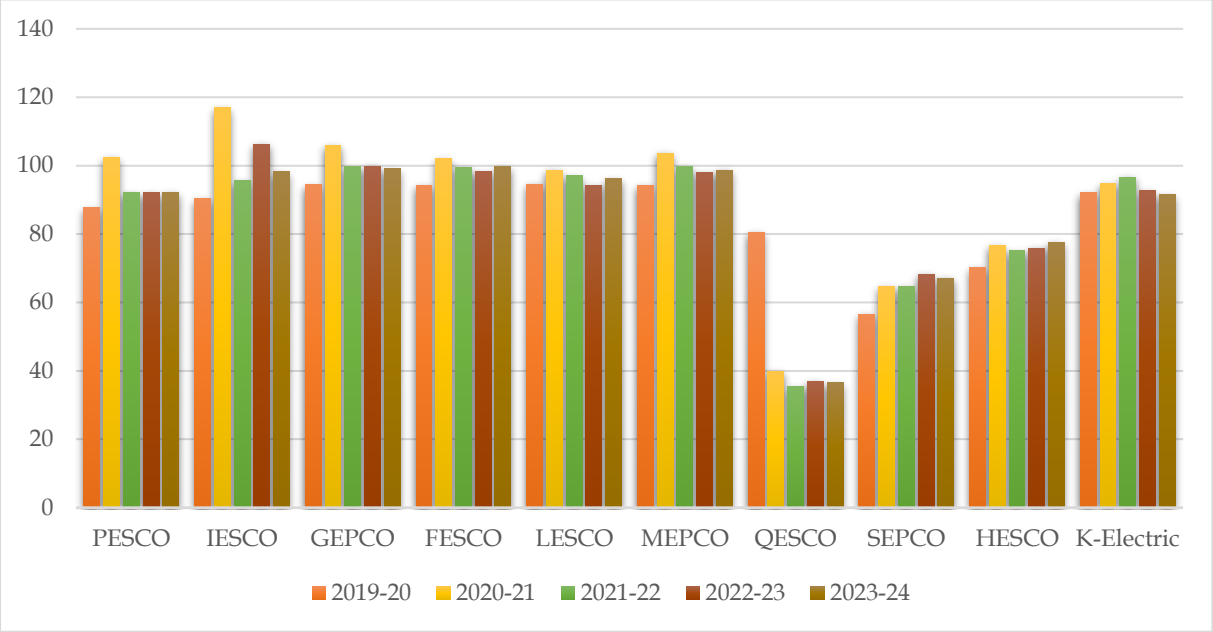

Figure 19: Billing & Collection (%)

The table and graph above show mixed trends in recovery rates, with some DISCOs improving slightly, while others saw slight declines in FY 2023-24. Notably, IESCO, GEPCO, QESCO and SEPCO experienced a decrease ranges from 3 to 6% in recovery rates compared to the previous year.

3.3 System Average Interruption Frequency Index (SAIFI):

Name of DISCO	2019-20	2020-21	2021-22	2022-23	2023-24
PESCO	187.93	193.7	188.92	184.67	180.59
IESCO	0.06	0.05	20.56	17.97	16.33
GEPCO	25.64	24.78	23.02	22.01	55.86
FESCO	35.65	35.53	35.2	34.94	34.66
LESCO	33.03	34.66	32.86	29.13	28.19
MEPCO	375.98	471	43.94	34.26	31.57
QESCO	99.12	97.96	97.11	98.37	97.89
SEPCO	478	441.04	410.7	117.5	80.85
HESCO	162.85	137.1	134.05	133.04	131.41
K-Electric	27.56	28	25.95	25.34	71.31

Table 17: System Average Interruption Frequency Index (SAIFI)

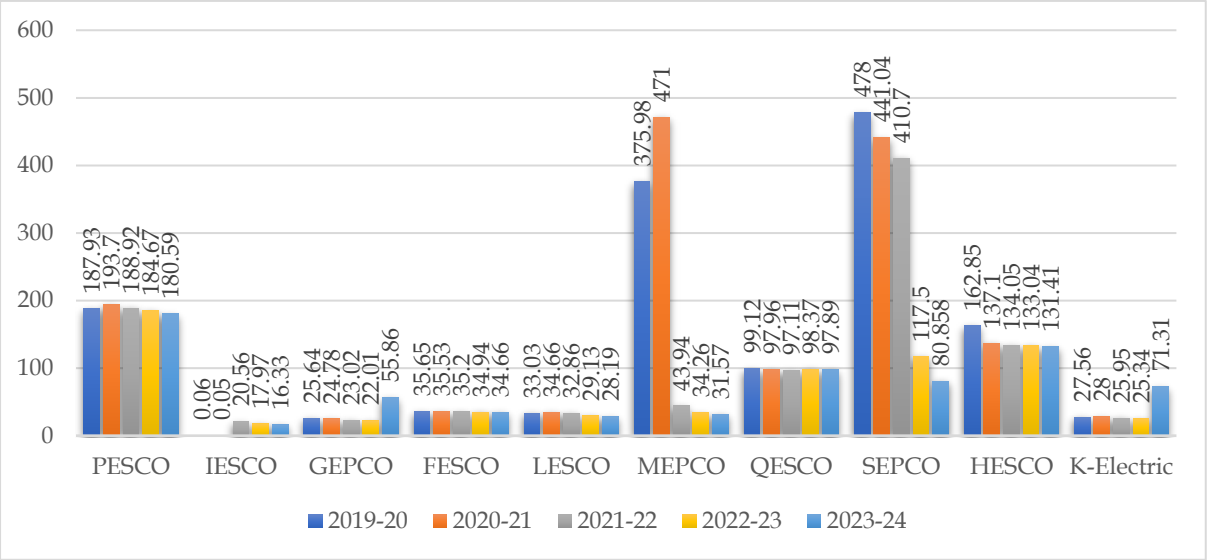

Figure 20: System Average Interruption Frequency Index (SAIFI)

The SAIFI data over the past five years indicates gradual improvements in outage frequency for most DISCOs, with PESCO, LESCO, FESCO, MEPCO, SEPCO, and HESCO showing consistent reductions. However, K-Electric and GEPCO saw a significant increase in SAIFI in FY 2023-24 compared to FY 2022-23.

3.4 System Average Duration Frequency Index (SAIDI):

Name of DISCO	2019-20	2020-21	2021-22	2022-23	2023-24
PESCO	14924.4	14821	14518	14227	13744.31
IESCO	1.36	1.36	1027.01	1006.33	915.03
GEPCO	42.4	40.33	38.98	38.59	4216.56
FESCO	1331.1	1252.7	1243.15	1219.37	1200.08
LESCO	3593.73	3821.84	3747.88	3550.05	3178.75
MEPCO	31920.87	39.733	2794	4723.73	3726.61
QESCO	8375.85	8176.2	8015.17	8083.47	8008.12
SEPCO	4095	3893.3	3593.3	1468.02	1378.664
HESCO	9751	7852.2	7558	7513.7	7463.13
K-Electric	2655	2564.66	1963.6	1911.7	4168.73

Table 18: System Average Duration Frequency Index (SAIDI)

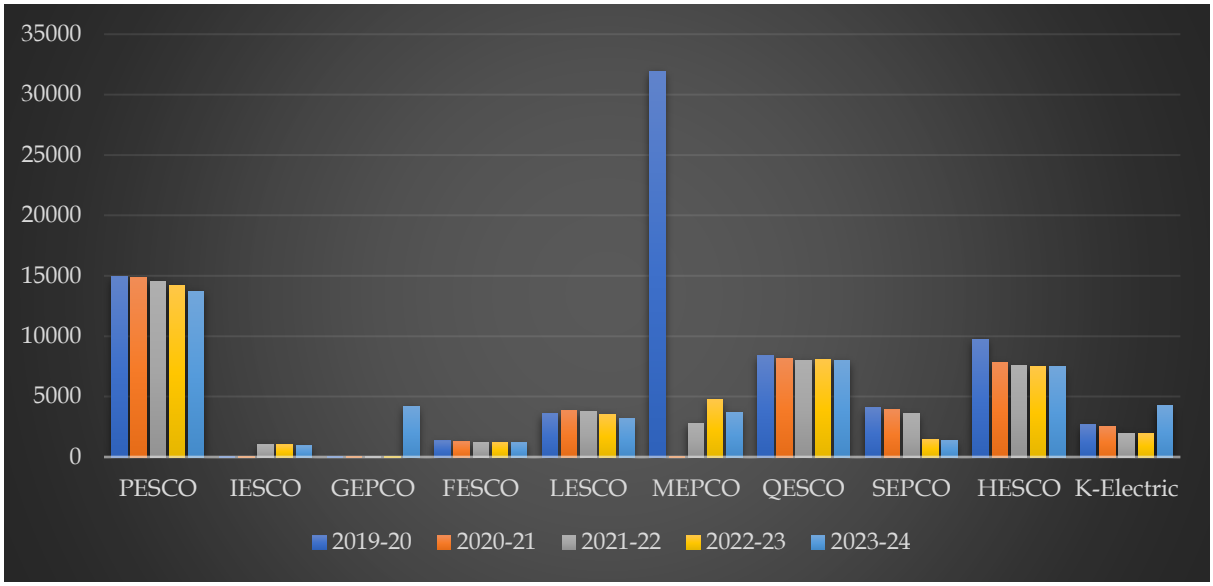

Table 21: System Average Duration Frequency Index (SAIDI)

The SAIDI data over the past five years shows that most DISCOs, including PESCO, FESCO, LESCO, QESCO, SEPCO, and HESCO, have reduced outage durations, with IESCO improving since a peak in 2021-22. However, GEPCO and K-Electric saw significant increases in 2023-24 compared to FY 2022-23. While some DISCOs are making progress, others continue to face challenges, highlighting the need for consistent maintenance and efficient use of O&M funds.

3.5 Time Frame for New Connection (% age of Pending Ripe Connections):

Name of DISCO	2019-20	2020-21	2021-22	2022-23	2023-24
PESCO	2.01	6.9	5.14	8.4	1.7
IESCO	0	0	0	0	13.64
GEPCO	22.9	23.2	25	15.01	5.01
FESCO	17.43	17.9	20.5	34.8	13.62
LESCO	1.85	1.7	1.99	2.28	2.81
MEPCO	5.44	4.6	4.6	7.2	8.76
QESCO	17.72	31.3	37.4	9.3	6.32
SEPCO	13.39	8.75	4.16	6	0.57
HESCO	3.78	0.03	0.038	0	0.06
K-Electric	9.62	17.5	18.6	6.84	3.58

Table 19: Time Frame for New Connection

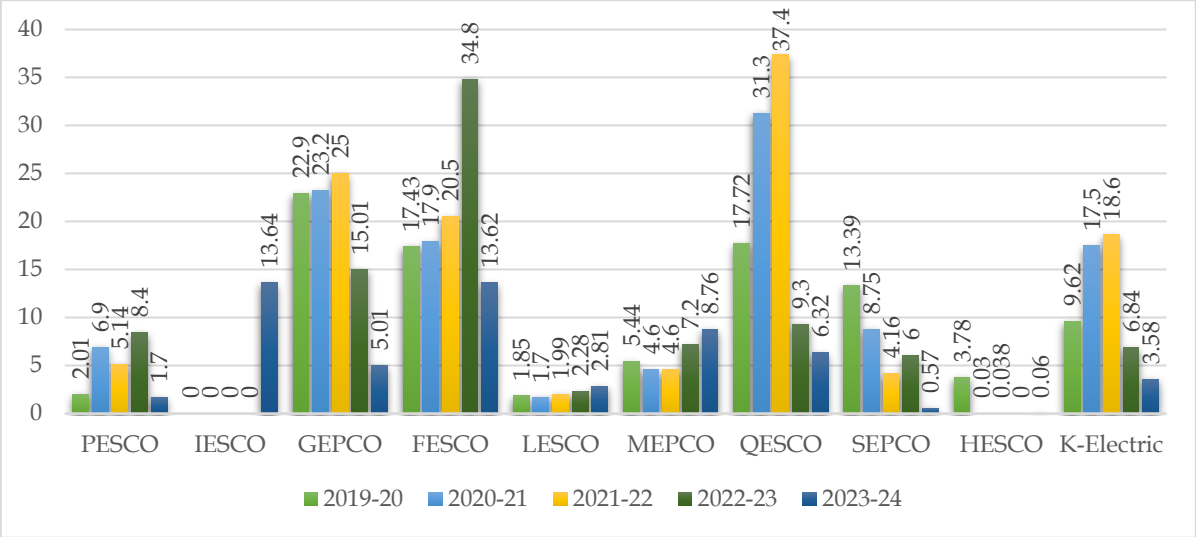

Figure 22: Time Frame for New Connection

The table and figure above show the percentage of pending ripe connections that were not provided within the time limits specified in PSDR 2005. The trend over the past four years reveals inconsistency in DISCOs' performance, with notable variations across years. Some DISCOs, like IESCO and MEPCO, have seen higher pending connection rates compared to the previous year.

3.6 Load Shedding (Hours):

Name of DISCO	2019-20	2020-21	2021-22	2022-23	2023-24
PESCO	2.92	1.8	6	4.5	11
IESCO	1.83	1	2.5	1.5	2.5
GEPCO	0	0.33	0.4	0.85	0.22
FESCO	0	0	1	0.56	0
LESCO	3	3	0.5	0.5	0.5
MEPCO	0.32	0.66	0.6	1.15	0.7
QESCO	6	8	11.3	10.25	10
SEPCO	2.33	7.3	2.3	2.33	2.3
HESCO	5.67	6	8	8.66	10.6
K-Electric	2.73	1.94	2.6	5.21	8.52

Table 20: Load Shedding (Hours)

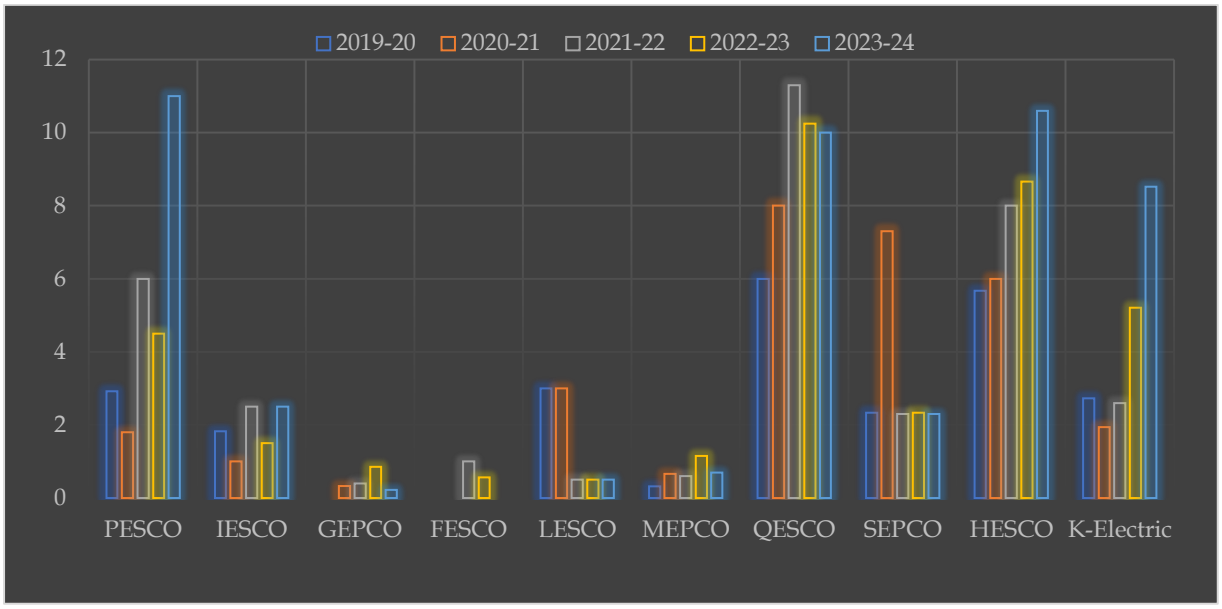

Figure 23: Load Shedding (Hours)

The load-shedding data reveals varied trends across DISCOs. PESCO, HESCO, and K-Electric saw significant increases in load-shedding hours in 2023-24, while IESCO, GEPCO, FESCO, LESCO, and MEPCO experienced relatively lower levels. Overall, it is evident that DISCOs continue to rely on commercially-driven load shedding, causing unnecessary power cuts even for good-paying consumers.

3.7 Nominal Voltages (% age of Consumers whose voltages remained beyond the prescribed limit):

Name of DISCO	2019-20	2020-21	2021-22	2022-23	2023-24
PESCO	9640	10869.5	24594	22721	21816
IESCO	10114	9513	7125	4,890	4642
GEPCO	10433	10133	10600	9725	9501
FESCO	5241	7782	5613	4677	7448
LESCO	4197	5525	5385	5,357	5496
MEPCO	6623	4308	4085	3165	2982
QESCO	3519	3273	2987	3702	3550
SEPCO	1100	432	484	216	845
HESCO	186	189	183	174	164
K-Electric	262170	219577	164505	148138	125050

Table 21: Nominal Voltages

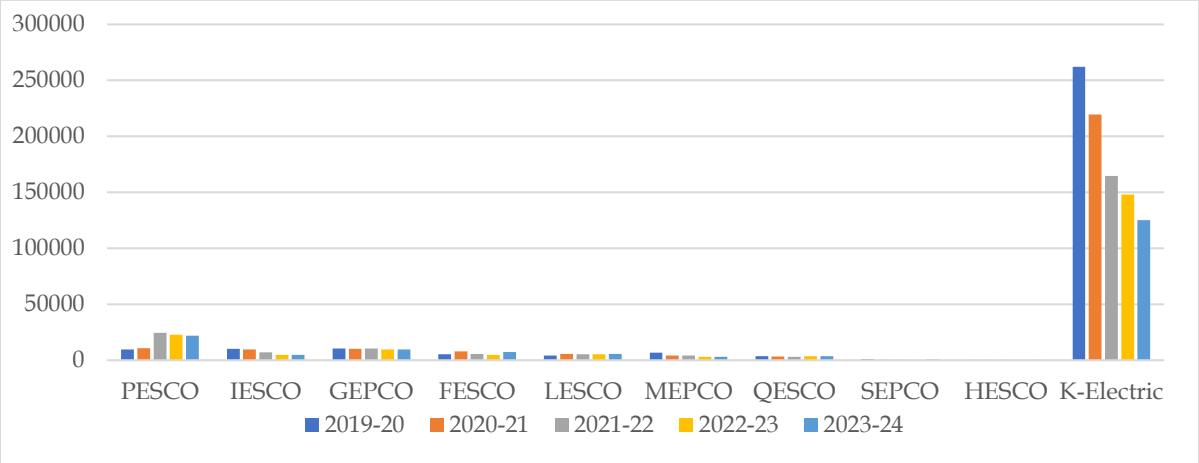

Figure 24: Nominal Voltages

The data shows a decrease in consumer complaints related to voltage fluctuations in FY 2023-24 compared to previous years. However, voltage fluctuations remain a persistent issue, especially during the summer season. To address this, preventive maintenance, timely rehabilitation, and infrastructure upgrades are crucial to improving supply quality and ensuring a more reliable, stable power system that meets consumer expectations.

3.8 Consumer Service Complaints:

Name of DISCO	2019-20	2020-21	2021-22	2022-23	2023-24
PESCO	111303	124363	90084	85090	95097
IESCO	513524	372326	329722	350447	380203
GEPCO	255019	239918	255884	255553	84711
FESCO	335662	312514	356100	345417	342806
LESCO	528442	544663	768076	978393	931626
MEPCO	218091	226862	270443	145160	153350
QESCO	47152	36827	33876	45847	41812
SEPCO	7598	21148	7,480	2961	2845
HESCO	120113	126437	117716	103838	94810
K-Electric	2034227	2018041	1543091	1382155	1276362

Table 22: Consumer Service Complaints

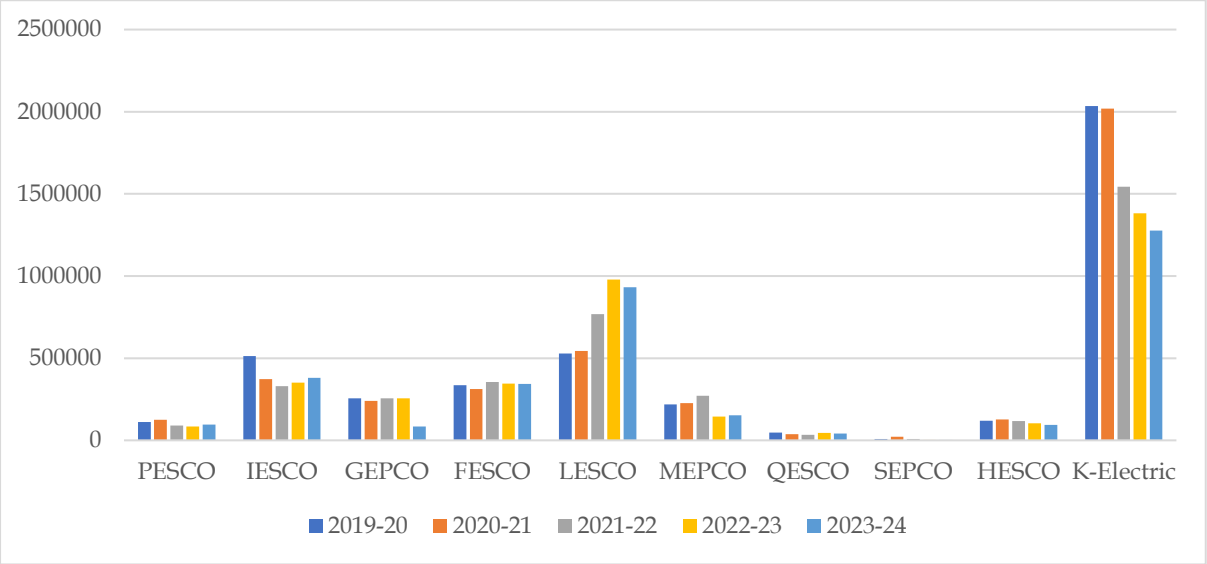

Figure 25: Consumer Service Complaints

The data shows a mixed trend in consumer complaints for FY 2023-24. PESCO, IESCO, and MEPCO saw an increase in complaints, while other DISCOs reported a reduction. This suggests variability in consumer satisfaction and operational challenges across different companies in the past fiscal year.

3.9 Safety (No. of Fatalities for Employee & Public):

Name of DISCO	2019-20	2020-21	2021-22	2022-23	2023-24
PESCO	31	23	39	41	20
IESCO	17	22	27	24	26
GEPCO	8	7	10	9	9
FESCO	12	9	5	6	7
LESCO	8	11	27	11	18
MEPCO	13	13	8	5	3
QESCO	7	6	8	9	9
SEPCO	13	14	10	9	5
HESCO	8	32	35	14	9
K-Electric	43	39	27	33	34
Total	160	176	196	161	140

Table 23: Fatal Accidents

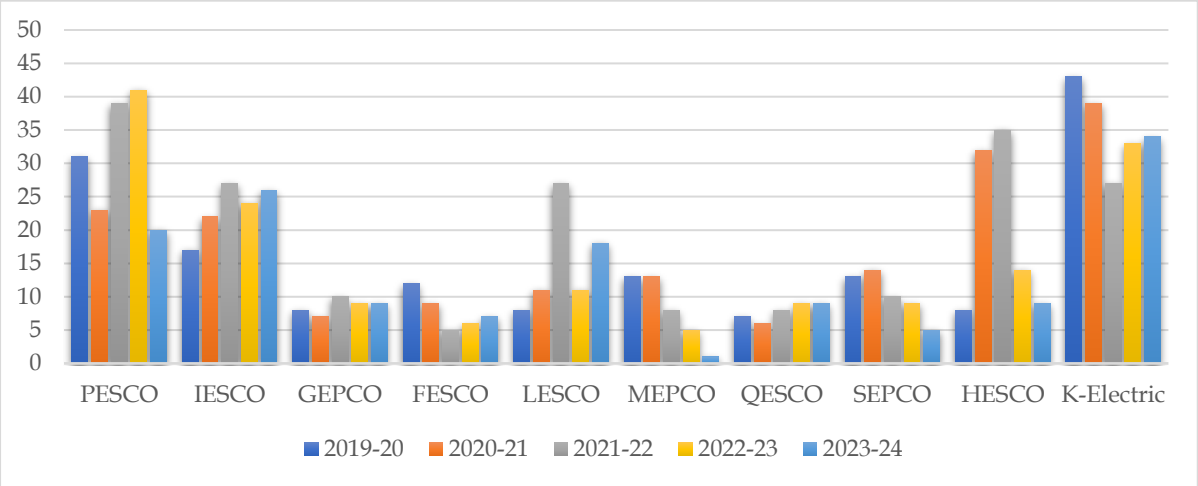

Figure 26: Fatal Accidents

The data reveals a general decline in fatal accidents across DISCOs in FY 2023-24, largely due to ongoing safety compliance efforts. MEPCO performed best, reducing fatalities to three, while K-Electric saw an increase to 34 fatalities, citing incidents within premises or due to consumer misconduct, such as kunda connections. SEPCO and HESCO also showed significant improvements. Despite the overall decline, the fatality rate remains concerning, and DISCOs are urged to implement proactive measures towards achieving zero accidents.

3.10 Fault Rate (No. of Faults/KM):

Name of DISCO	2019-20	2020-21	2021-22	2022-23	2023-24
PESCO	0.40	0.38	0.45	0.43	1.65
IESCO	11.34	8.77	4.91	4.65	2.93
GEPCO	3.49	2.28	3.46	3.27	3.27
FESCO	1.38	1.61	1.13	1.26	1.14
LESCO	5.58	5.46	5.39	5.39	5.26
MEPCO	60.60	6.55	1.06	0.77	0.63
QESCO	1.01	1.34	1.23	1.29	1.40
SEPCO	1.55	1.26	1.18	1.38	0.79
HESCO	0.96	0.82	1.18	1.08	1.39
K-Electric	1.34	1.34	1.34	1.64	3.23

Table 24: Fault Rate

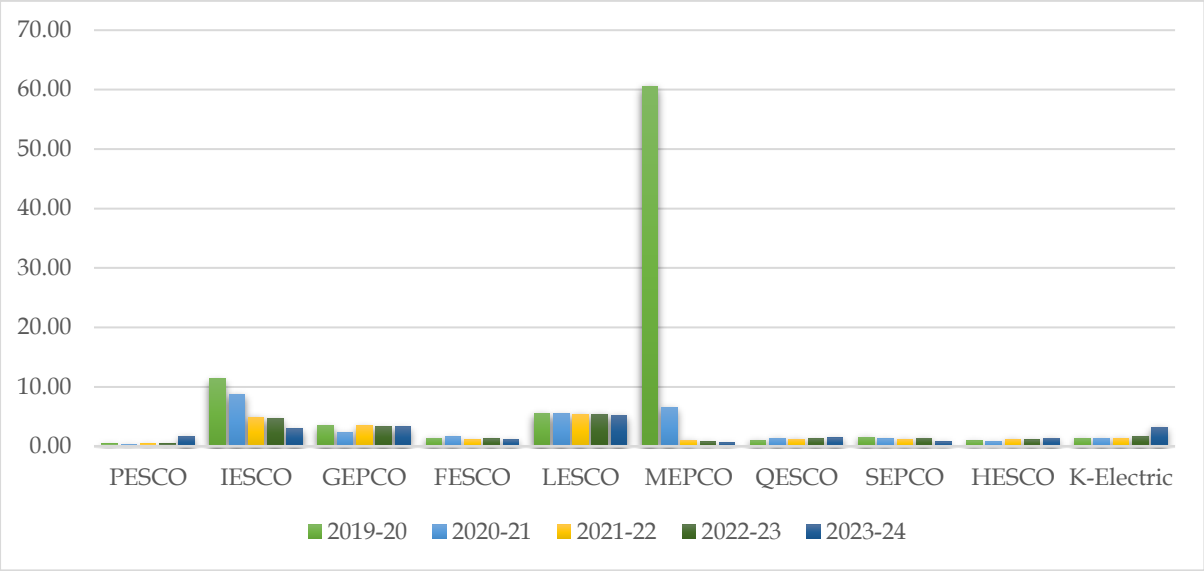

Figure 27: Fault Rate

The fault rate data over the past five years shows an inconsistent trend across DISCOs. Some have improved their fault rates in FY 2023-24, reflecting better maintenance and operational efficiency, while others saw an increase, indicating potential operational challenges. This inconsistency highlights varying levels of effectiveness in fault management. To drive uniform improvement, DISCOs with higher fault rates should adopt best practices and strengthen maintenance protocols.