



**NATIONAL ELECTRIC POWER REGULATORY
AUTHORITY**

**PERFORMANCE
EVALUATION**
Report

2020-21

DISTRIBUTION COMPANIES
ALONG WITH COMPARISON OF LAST FOUR YEAR
(2016-17, 2017-18, 2018-19 & 2019-20)

Contents

EXECUTIVE SUMMARY:	2
INTRODUCTION:	5
2. ANALYSIS:	6
2.1 Transmission and Distribution (T&D) Losses:	6
2.2 Recovery (%)	8
2.3 System Average Interruption Frequency Index (SAIFI-No.):	10
2.4 System Average Interruption Duration Index (SAIDI-Minutes):	11
2.5 Time Frame for New Connection: (% of Pending Ripe Connections):	12
2.6 Load Shedding (Hours):	13
2.7 Nominal Voltage (% of consumers whose voltage remained beyond prescribed limit):	14
2.8 Consumer Service Complaints:	15
2.9 SAFETY (No. of Fatalities for both Employees and Public):	16
2.10 Fault Rate (No. of Faults/KM):	18
3. COMPARISON OF DATA FOR FY2019-20 WITH LAST FOUR YEARS (2016-17, 2017-18, 2018-19, & 2019-20):	19
3.1 Transmission and Distribution (T&D) Losses (%):	19
3.2 Recovery (%):	20
3.3 System Average Interruption Frequency Index (SAIFI):	21
3.4 System Average Interruption Duration Index (SAIDI):	22
3.5 Time Frame for New Connection (% of Pending Ripe Connections):	23
3.6 Load Shedding (Hours):	24
3.7 Nominal Voltages (No. of Consumers who made complaints about Voltages):	25
3.8 Consumer Service Complaints:	26
3.9 SAFETY (Total No. of fatal Accidents for both Employees and General Public):	27
3.10 Fault Rate (No. of Faults/KM) :	28

EXECUTIVE SUMMARY:

Each distribution company is required to submit to NEPRA an Annual Performance Report (APR) in a prescribed format, according to performance standards (distribution) Rules (PSDR) 2005. The APRs for the year 2020-21, submitted by the distribution licensees, were reviewed on the basis of parameters namely, transmission and Distribution (T&D) Losses, Recovery, System Average Interruption Frequency Index (SAIFI), System Average Interruption duration Index (SAIDI), Time frame for New Connection, Load Shedding, Nominal Voltage, Consumer Complaints, Safety, and Fault Rate.

A comprehensive report namely “Performance Evaluation Report (PER)” indicating the compliance level with performance standards by the distribution companies is prepared based on the data submitted by the distribution companies (DISCOs). The report provides the analysis of data for the FY 2020-21 along with the comparison of last four years i.e. 2016-17, 2017-18, 2018-19, and 2019-20.

While analyzing the data provided by distribution companies, it is observed that in FY 2020-21 there are some remarkable improvements by some of the distribution companies especially from recovery point of view compared to last years. Whereas, the performance of DISCOs in other areas seems not distinguishable as no significant improvement is observed. Parameter wise detail is as under:

T&D Losses: T&D losses is an important parameter and most debatable in the power sector. NEPRA being a Regulator has been instructing and directing the DISCOs for taking effective measures to maintain their losses closer as possible to the NEPRA targets. But unfortunately, majority of DISCOs have breached the NEPRA determined targets except FESCO and GEPCO which are below the marked losses by NEPRA. Whereas other DISCOs have breached the limits set by NEPRA and contributed a loss of around Rs. 71 billion to national exchequer. Particularly, PESCO, HESCO, SEPCO and QESCO have shown the below par performance among all DISCOs in this behalf. Moreover, MEPCO followed by IESCO, K-Electric and LESCO remained close to the NEPRA targets. It is pertinent to highlight that NEPRA has allowed huge investment/O&M funds every year to DISCOs, so that proper and timely steps including removal of system constraints, reduction in length of feeders, automated metering and preventive maintenance etc. can be taken by DISCOs. However, DISCOs have remained reluctant to undertake such projects/works.

Recovery: Distribution Companies has to realize that maximum collection of revenues is the only reason to maintain their financial health. The same can also play an effective role in reducing the burden of circular debt. While considering the data submitted by DISCO, it is noted that PESCO, IESCO, FESCO, GEPCO and MEPCO have achieved the targets set by NEPRA and even crossed those limits by recovering the debt of previous years. Whereas LESCO and K-Electric are close to the target of 100%. However, QESCO, SEPCO and HESCO are lagging far behind in achieving their target recoveries in FY 2020-21, which has resulted in a loss to national exchequer i.e. Rs. 39.4 Billions. It is relevant to state that the low recovery ratios have effectively crumbled the revenues beyond acceptable levels.

Time frame of New Connection: It is alarming that electricity demand is not being met despite abundant generation in the country, and one pertinent aspect is the failure to provide additional connections to the eligible consumers within the allowed time frame. It is important to note that more than 95% of the applied connections must be given connections within the time frame defined in PSDR 2005. Whereas the data submitted by the DISCO is concerning and in this regard,

the performance of QESCO, GEPCO, FESCO, and K-Electric remained poor as they failed to achieve the set targets with huge margin. However, PESCO and SEPCO are closer to target of 95%. Further IESCO, LESCO, MEPCO, and HESCO have submitted that they have provided more than 95% of applied connections in year 2020-21. It is important to highlight that non-provision of new connections to the consumers within the prescribed time frame causes huge financial loss to the national exchequer. From June, 2021 to Dec, 2021, the analysis reveals that this loss is increasing every month from Rs. 1.4 Billion to 2.5 Billion. Had these connections been provided to the consumers within stipulated time, there would have a chance to reduce burden of capacity payments.

Load Shedding: NEPRA has strong reservations about the accuracy of data pertaining to load shedding being carried out by DISCOs in their service territories. Although, the load shedding has been reduced in duration in FY 202-21 as compared to previous years particularly in IESCO, FESCO, GEPCO, LESCO and MEPCO, however, the same can be avoided completely by availing 100% of electricity quota allocated to DISCOs. It is relevant to state that DISCOs especially PESCO, QESCO, SEPCO and HESCO are deliberately drawing less power as compared to their allocated quota on the pretext of AT&C based load shedding, which is in clear violation of NEPRA laws and has never been recognized by the NEPRA. NEPRA being a regulator vigorously monitor the situation and has issued strict directions to DISCOs to avoid undue load shedding at least in urban areas. The same issue has also been taken by the Authority with all Chairmen BODs of DISCOs and Secretary Ministry of Energy (Power Division) by sending an advisory showing the performance of respective DISCO in this regard. The Authority further directed DISCOs to initiate the process pertaining to installation of AMI/AMR meters along with ABC cable in high loss areas in order to control theft and improve recovery. The Authority has also observed that AT&C based load shedding was introduced back in 2017 when there was generation shortage in the country, however, the continuity of same policy does not appear to be beneficial for the power sector. It is also a fact that good paying consumers of the same feeder are badly suffering due to this policy.

Consumer Complaints: Being a regulator, NEPRA keeps a close eye on customers' interests, and DISCOs have been repeatedly emphasized to enhance their complaint processing mechanisms and give maximum relief to consumers. In this context, NEPRA reviews the complaint handling mechanisms of distribution companies on a regular basis and issues directives to ensure that customer concerns are promptly resolved. Unfortunately, the NEPRA team while on visit of customer centers of DISCOs revealed the complaint centers in poor and degraded conditions. Furthermore, NEPRA has reservations about the distribution companies' data, which suggests that SEPCO did not get a single complaint in any of its complaint centers in a single day. Similarly, PESCO, FESCO, QESCO and HESCO received 2 to 3 complaints per complaint center per day.

Safety: NEPRA always considers the safety as most important impediment in the assessment of DISCO's performance. DISCOs are being persistently instructed to comply with prescribed safety standards in letter and spirit. FY 2020-21 has presented a bleak picture in terms of the number of deaths, both for employees and the general public, which amounted 176 in all distribution companies and highest in last five years. The data also shows a shocking statistics of K-Electric, HESCO and IESCO having highest number of deaths i.e. 39, 32 and 22 respectively. The NEPRA Authority took serious note of the rising number of fatalities in distribution companies, and decided to initiate investigations against all distribution companies under Section 27A of the NEPRA Act. So far K-Electric, PESCO, HESCO, SEPCO, GEPCO, FESCO, IESCO, QESCO and MEPCO have been investigated and accordingly, legal proceedings were initiated. After following all due process, fines of Rs. 205 Million have been imposed on KE, PESCO, HESCO, SEPCO, GEPCO and FESCO, whereas, proceedings against IESCO, QESCO and MEPCO are

underway. Keeping in view the importance of human life, the Authority also directed DISCOs to compensate the victim families of public persons for which it has been held responsible with the equal amount given to its employee. Furthermore, DISCOs are being directed to provide a job to next of kin of bereaved families of public persons.

Performance of distribution companies throughout this period does not meet the objectives of power sector reforms in letter and spirit. It is on record that more than Rs. 350 Billion have been allowed to DISCOs in last seven years i.e. from 2013-14 to 2019-20 for reduction in losses, network improvement, and customer facilitation etc. However, even 1% T&D loss has not been reduced based on overall DISCO's average. The Regulator observes that under the given scenario, the existing set up would not be able to deliver, therefore, it is recommended that structural changes/reforms like Ban on Unions, Bifurcation/Trifurcation of Larger DISCOs and Privatization of DISCOs through Public Private Partnership mode may be carried out to save the sector.

INTRODUCTION:

As per rule 7 of Performance Standards (Distribution) Rules (PSDR) 2005, each distribution company has to submit to the Authority an Annual Performance Report every year, before 31st of August of the succeeding year in the prescribed format.

The Annual Performance Reports should include at least the following information:

- a) System Performance Reports
- b) Consumer Services Performance Reports
- c) Distribution Companies Written Report on Performance and Plans for Improvement

Rule 7(2) of PSDR states that the Annual Performance Report Should also contain all relevant information with respect to compliance with these Rules during the year, including a comparisons with compliance report to Authority for previous year.

This report contain analysis of performance parameters through descriptive and graphical representation based on the data reported by each distribution company for last five years. The analysis is based on the following parameters:-

- Transmission & Distribution Losses
- Recovery in percentage
- System Average Interruption Frequency Index (SAIFI)
- System Average Interruption Duration Index (SAIDI)
- Percentage consumers who were not given new connections in permitted time period
- Total number of consumers who made complaints about voltages
- Average Duration of load shedding (hrs.)
- Total Consumer services complaints received by DISCO during the year
- Fault Rate (faults/km) of distribution system
- Electrical incidents resulting in death or permanent serious injury/Disability to the member of staff or public

2. ANALYSIS:

2.1 Transmission and Distribution (T&D) Losses:

It is a fact that the unit of electrical energy generated by power station does not match with the units distributed to the consumers. Some percentage of the units is lost which is known as transmission & distribution (T&D) loss. There are two types of T&D losses: Technical and Non-Technical. The technical losses are occurred due to lengthy distribution lines, inadequate size of conductors of distribution lines, installation of distribution transformers away from load transformers, low power factor for primary and secondary distribution system, and bad workmanship etc. All these reasons can be eliminated through proper design and planning of distribution system and through strict governance. Whereas, non-technical losses are caused by external actions to the power system.

NEPRA considers this parameter is of paramount importance and always give strict targets T&D losses to DISCOs in order to achieve single digit figure.

Name of DISCO	Actual Reported (%)	Allowed in Tariff (%)	Breach of Target (%)
PESCO	38.20	27.90	10.30
IESCO	8.55	8.50	0.05
GEPCO	9.23	9.83	-0.60
FESCO	9.30	9.76	-0.46
LESCO	11.96	10.03	1.93
MEPCO	14.97	14.96	0.01
QESCO	27.96	17.36	10.60
SEPCO	35.30	25.06	10.24
HESCO	28.20	21.29	6.91
K-Electric	17.54	16.80	0.74
W.AV:	17.50	14.85	2.65

Table 1: Transmission and Distribution (T&D) Losses

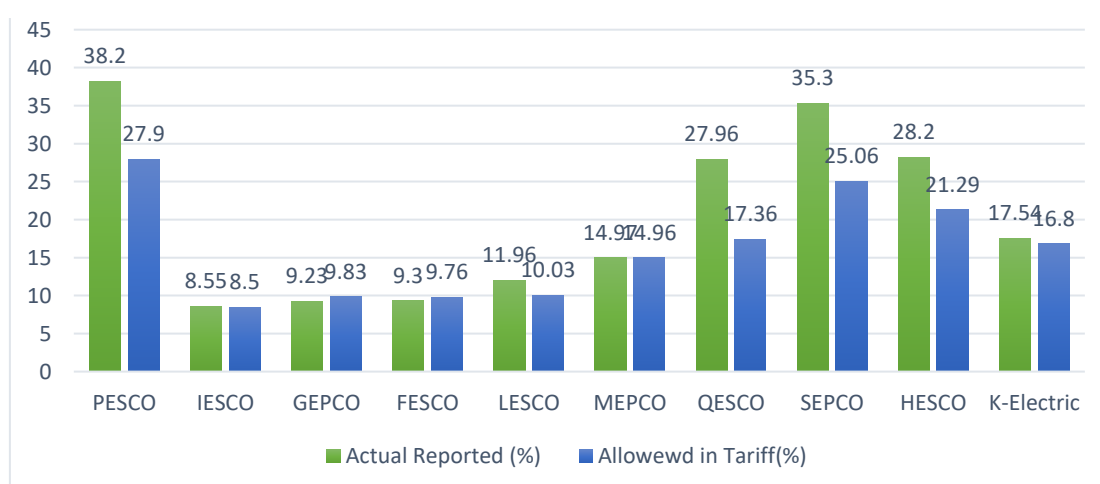


Figure 1: Transmission and Distribution (T&D) Losses

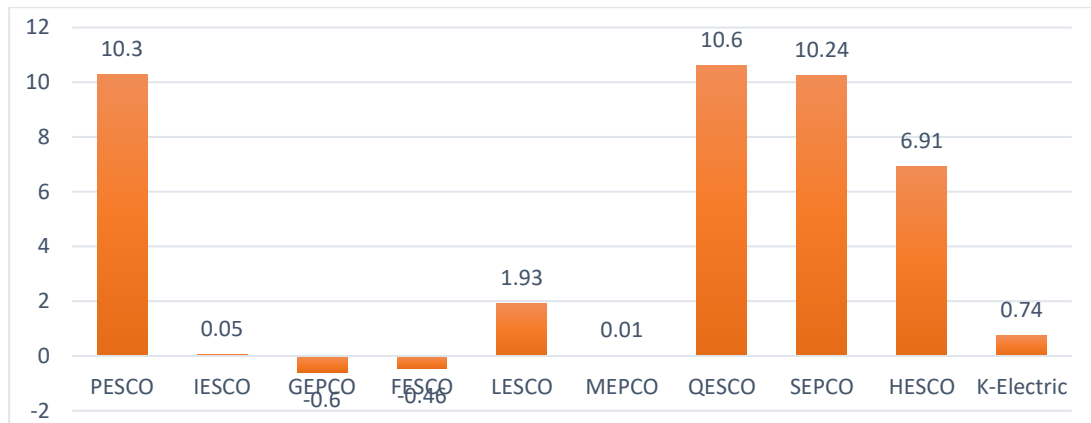


Figure 2: Breach of T&D Loss Target

Above Figure and table indicates the data reported by the DISCOs and targets set by NEPRA through their respective tariff determinations. An overall picture is also given which depicts that weighted average of 2.65% losses occurred in excess as compared to the weighted average of allowed limit by NEPRA in FY 2020-21.

The data provided by distribution companies for the year 2020-21 shows that GEPCO and FESCO have met the regulator's expectations followed by MEPCO, IESCO, LESCO and K-Electric with slight difference. Whereas, the performance of PESCO, QESCO, SEPCO and HESCO remained worse in this regard in FY 2020-21 as their percentages pertaining to breach of NEPRA targets are on higher side which results in ongoing increase of circular debt.

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

Name of DISCO	Breach of Target %	Energy Purchased by DISCOs from CPPA(M. kWh) (FY-2020-21)	Energy Lost (M. kWh) (FY-2020-21)	Applicable Tariff with QTAs & FPAs	Financial Loss (Million Rs.)
1	2	3	4=(2/100)*3	5	6=4*5
PESCO	10.30	15542	1600.83	20.23	32,384.79
IESCO	0.05	11965	5.98	14.75	88.21
GEPCO	-0.60	12032	-72.19	15.61	-1,126.89
FESCO	-0.46	15985	-73.53	16.40	-1,205.89
LESCO	1.93	25388	489.99	15.70	7,692.84
MEPCO	0.01	20541	2.05	16.72	34.28
QESCO	10.60	6629	702.67	19.10	13,420.99
SEPCO	10.24	4291	439.39	20.88	9,174.46
HESCO	6.91	5591	386.34	22.43	8,665.61
K-Electric	0.74	19421.33	143.72	12.81	1,841.05
Total			3625.25		70,969.45

Table 2: Financial Loss due to breach of T & D Loss

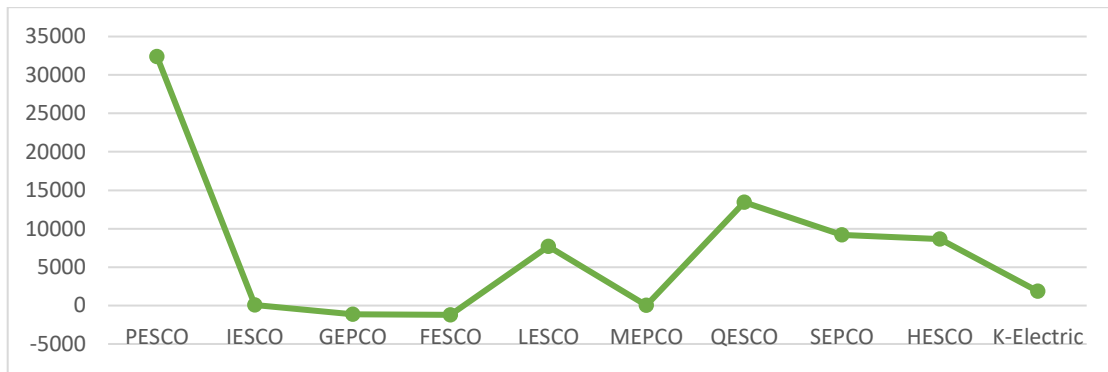


Figure 3: Financial Loss due to breach of T&D Loss

Table 2 and Figure 3 illustrate the financial loss suffered by National Exchequer due to breach of NEPRA targets by the distribution companies i.e. around **Rs.71 Billion**. During analysis of DISCO wise financial loss, it is observed that PESCO has contributed highest followed by QESCO.

Note: Above financial impact is calculated by considering notified rates of each DISCO including quarterly Tariff Adjustment and Fuel Price Adjustments.

2.2 Recovery (%)

Increased in revenue can help to reduce fiscal deficits and provide investable funds for public utility expansions. NEPRA has made this a mandatory component to evaluate DISCO's performance. DISCOs are encouraged to achieve a rate of 100% recovery.

Name of DISCO	Actual Recovery (%)	Target (%)	Breach of Target (%)
PESCO	102.5	100	2.5
IESCO	116.87	100	16.87
GEPCO	106.00	100	6.00
FESCO	102.00	100	2.00
LESCO	98.72	100	-1.28
MEPCO	103.61	100	3.61
QESCO	39.80	100	-60.2
SEPCO	64.70	100	-35.3
HESCO	76.70	100	-23.3
K-Electric	94.80	100	-5.20
W. Avg:	98.08	100	1.92

Table 3: Recovery

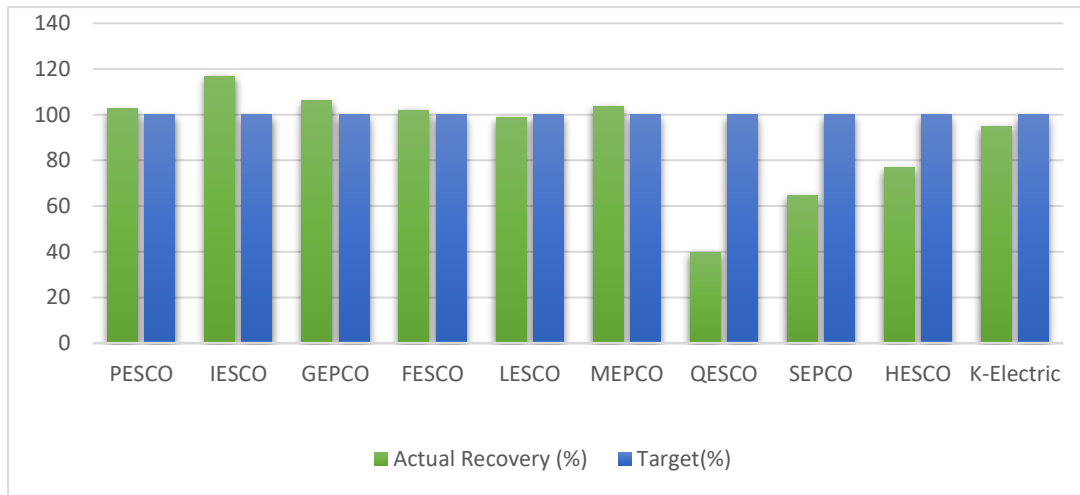


Figure 4: Recovery



Figure 5: Breach of Target

Taking the closer look of data submitted by DISCOs in table 3, it is noted that PESCO, IESCO, FESCO, GEPCO and MEPCO have achieved the targets set by NEPRA and even crossed them due to recovery of the debt of pervious year. Whereas LESCO and K-Electric are closer to the NEPRA targets. However, QESCO, SEPCO and HESCO are lagging behind the targets.

2.2.1 Financial Loss due to breach of Recovery Targets by DISCOs:

Name of DISCO	Billing (Million Rs.)	Collection (Million Rs.)	Loss (Million Rs.)
PESCO	176816.03	181273.88	-4457.85
IESCO	220540	257742	-37202
GEPCO	190363	202195	-11832
FESCO	241630	246363	-4733
LESCO	431602	426072.24	5529.76
MEPCO	272576.03	282404.12	-9828.09
QESCO	85509.5	34003.6	51505.9
SEPCO	50100	32400	17700
HESCO	70839.8	54302.4	16537.4
K-Electric	315873	299673	16200
Total	2055849.36	2016429.2	39420.12

Table 4: Financial Loss Due To Breach of Targets

Table 4 illustrate the loss of revenue which was not recovered by the distribution companies due to their poor management/governance. A total loss of Rs. 39.4 Billion was borne by National Exchequer in FY 2020-21 which is very alarming and a major reason of continuous growing circular debt in Pakistan.

2.3 System Average Interruption Frequency Index (SAIFI-No.):

SAIFI is a key performance Indicator and is normally used to assess the performance of company as a whole. It can be simply interpreted as “It is average number of times that a consumer experiences an outage during a year.”

According to Rule 4(a) of Performance Standards (Distribution) Rule 2005, a distribution company shall ensure that the System Average Interruption Frequency Index (SAIFI) of supply of power per consumer per annum does not exceed thirteen (13).

Name	Reported Figure (NO.)	Target by NEPRA (No.)	Breach of Target
PESCO	193.7	13	Far Away
IESCO	0.05	13	Within Limit
GEPCO	24.78	13	Near to Limit
FESCO	35.53	13	Near to Limit
LESCO	34.66	13	Near to Limit
MEPCO	471	13	Far Away
QESCO	97.96	13	Away
SEPCO	441.04	13	Far Away
HESCO	137.1	13	Far Away
K-Electric	28	13	Near to Limit

Table 5: System Average Interruption frequency Index

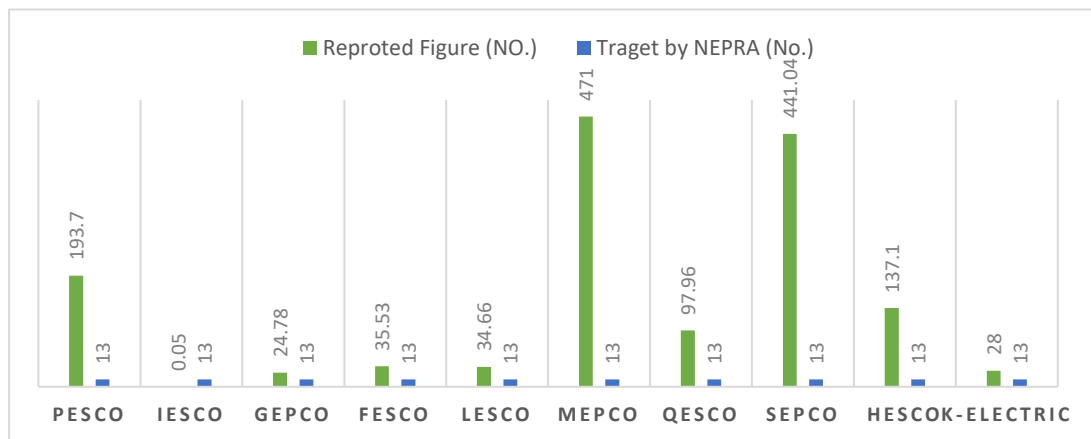


Figure 6: System Average Interruption frequency Index

Table and Graph with respect to SAIFI indicate that all DISCOs except IESCO have not complied with the limit of SAIFI during year 2020-21. However, IESCO's data seems impractical. IESCO has submitted that its SAIFI in 2020-21 remained 0.05 number, which means that IESCO's consumer did not experience any single interruption in a year 2020-21 on average basis and the same needs to be verified. Similarly, the data submitted by GEPCO, FESCO, LESCO and K-Electric appears near to the limit set by NEPRA. This

shows that these DISCOs can achieve the target of SAIFI by taking measures in terms of preventive maintenance of their distribution system. The data submitted by these four DISCOs illustrates that each consumer of GEPCO, FESCO, LESCO and K-Electric experienced only 24, 35, 34 & 28 number of interruptions respectively on average basis in a year which also needs to be verified. The performance of MEPCO remained worst in this regard followed by SEPCO, PESCO, and HESCO as their SAIFI figures are far away from limits prescribed in PSDR 2005. Whereas, QESCO's reported figure also remained away from SAIFI limit. It is pertinent to highlight that the Authority has already directed to verify the data submitted by IESCO through field formations and also authenticate the mechanism of SAIFI & SAIDI calculations.

2.4 System Average Interruption Duration Index (SAIDI-Minutes):

System Average Interruptions Duration Index (SAIDI) is key point indicator used to gauge the company's performance in terms of duration (minutes) of outages for which consumer suffered in a year.

According to Rule 4(b) of Performance Standards (Distribution) Rules 2005, a distribution company shall ensure that the System Average Duration Index (SAIDI) of supply of power per consumer per annum does not exceed fourteen (14).

Name	Reported Figure (NO.)	Target by NEPRA (No.)	Breach of Target
PESCO	14821	14	Far Away
IESCO	1.36	14	Within Limit
GEPCO	40.33	14	Near to Limit
FESCO	1252.7	14	Far Away
LESCO	3821.84	14	Far Away
MEPCO	39733	14	Far Away
QESCO	8176.2	14	Far Away
SEPCO	3893.3	14	Far Away
HESCO	7852.2	14	Far Away
K-Electric	2564.66	14	Far Away

Table 6: System Average Interruption duration index

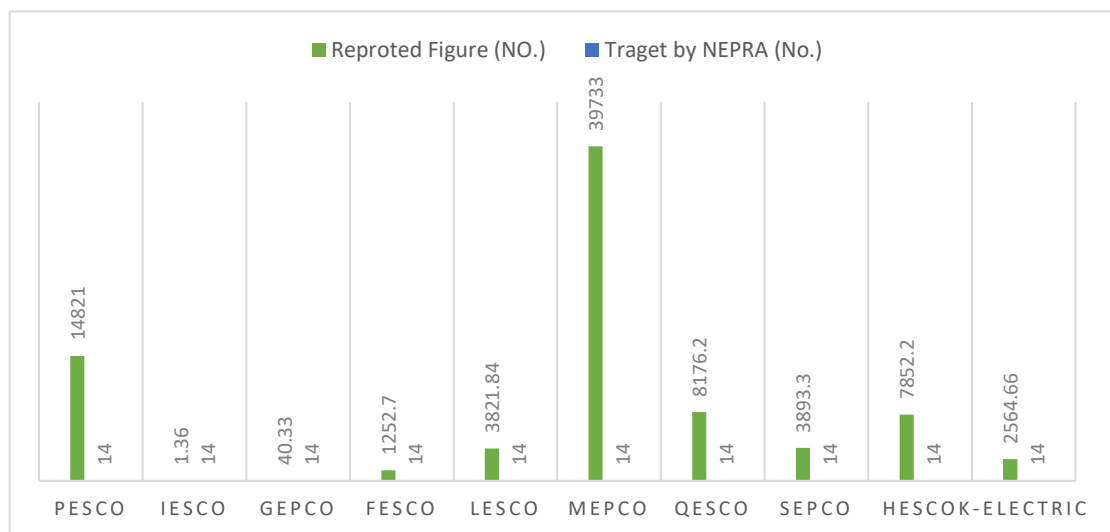


Figure 7: System Average Interruption duration Index

SAIDI related table and graph indicate that none of the DISCO except IESCO met with NEPRA target of 14 minutes. IESCO's data shows that the duration of outage faced by its consumer was only 1.36 minutes averagely in year 2020-21, which seems not based on grounds facts. Similarly, the data submitted by GEPCO is near to limit. GEPCO has submitted that its consumer experienced 40 minutes duration of outage on average basis for FY 2020-21. Remaining DISCOs such as PESCO, FESCO, LESCO, MEPCO, QESCO, SEPCO, HESCO and K-Electric are far away from the set limit of SAIDI.

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

According to Rule 4 (c)-Time frame for New Connection (OS3) of Performance Standards (Distribution) Rules 2005; A distribution company shall provide electric power services to at least 95% of new connections to its eligible consumer as specified in the Consumer Eligibility Cafeteria laid down by the Authority pursuant to section 21(2) (b) of Act in each of the categories within the time limits specified by NEPRA from the date of application for new connection.

Table represent the %age of consumer who were not provided new connections within the prescribed time frame. The data submitted by DISCOs is compared with the limit envisaged in Performance Standards (Distribution) Rules 2005;

Name of DISCO	% Eligible consumer who were not provided new connection within prescribed time frame	Allowed Limit in PSDR 2005(%)	Breach (%)
PESCO	6.9	5	1.9
IESCO	0	5	0
GEPCO	23.2	5	18.2
FESCO	17.9	5	12.9
LESCO	1.7	5	0
MEPCO	4.6	5	0
QESCO	31.3	5	26.3
SEPCO	8.75	5	3.75
HESCO	0.03	5	0
K-Electric	17.5	5	12.5

Table 7: % Pending Ripe Connections and Breach of Target

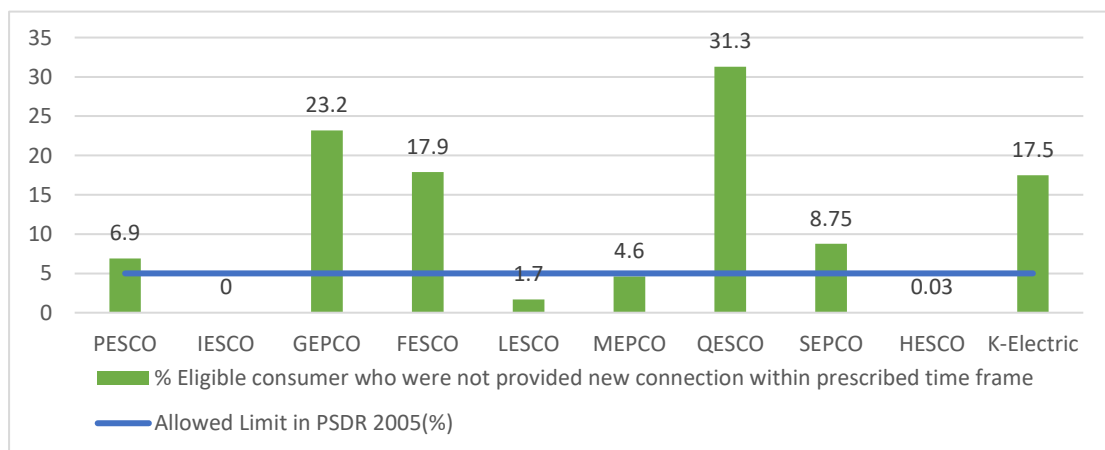


Figure 8: % consumers who were not connected within prescribed time frame

From above table and graph, it is noted that IESCO, LESCO, MEPCO and HESCO have provided 100% of the applied connections. Whereas, remaining companies did not meet the specified limit. PESCO and SEPCO are closer to the target of 95%, however, QESCO's and GEPCO's performance seems very poor in this regard.

It is important to note that NEPRA is vigorously pursuing the compliance of this parameter and also verifying the data submitted by DISCOs on monthly basis. In case of non-compliance or misreporting, stern punitive actions are taken against DISCOs. Moving step ahead, NEPRA has established an online portal and directed DISCOs to submit this pendency data on monthly basis. Accordingly, the reported data as on Dec 31, 2021 has been evaluated and found that hundreds of thousand connections are pending in DISCOs due to which financial loss of averagely Rs. 2 billion on monthly basis is occurred.

2.6 Load Shedding (Hours):

Table 8 indicate the figures of average daily load shedding carried out by the distribution companies during the FY 2020-21.

The figures reported by the DISCOs except QESCO, SEPCO, and HESCO represent that they carried out load shedding for averagely 2 to 3 hours on daily basis, whereas, QESCO, SEPCO and HESCO has reported the same as 6 to 8 hours. The data submitted by PESCO is not based on ground realities as the field verification is different from this data. According to actual data collected from field, around 8 to 12 hours of load shedding is being carried out in PESCO's service territory.

Name	Reported figures of average daily load shedding hours
PESCO	1.8
IESCO	1
GEPCO	0.33
FESCO	0
LESCO	3
MEPCO	0.66
QESCO	8
SEPCO	7.3
HESCO	6
K-Electric	1.94

Table 8: Load Shedding (Hours)

It is further observed that distribution companies are carrying out the load shedding as per AT&C losses criteria which is not in line with requirements Performance Standards (Distribution) Rules 2005 and has never been recognized by NEPRA. Rule 4(f) of PSDR 2005 states that:

“A distribution company shall have plans and schedules available to shed up to 30% of its connected load at any time upon instruction of NTDC. When instructed by NTDC, Distribution Company shall shed the load in the following order

1. *Supply to consumer in rural area; and residential consumer in urban areas where separate feeders exist;*
2. *Supply to consumer other than the industrial, in urban areas;*
3. *Supply to agriculture consumer where there is dedicated power supply;*
4. *Supply to industrial consumer;*
5. *Supply to school & hospital;*
6. *Supply to defense and strategic installation;”*

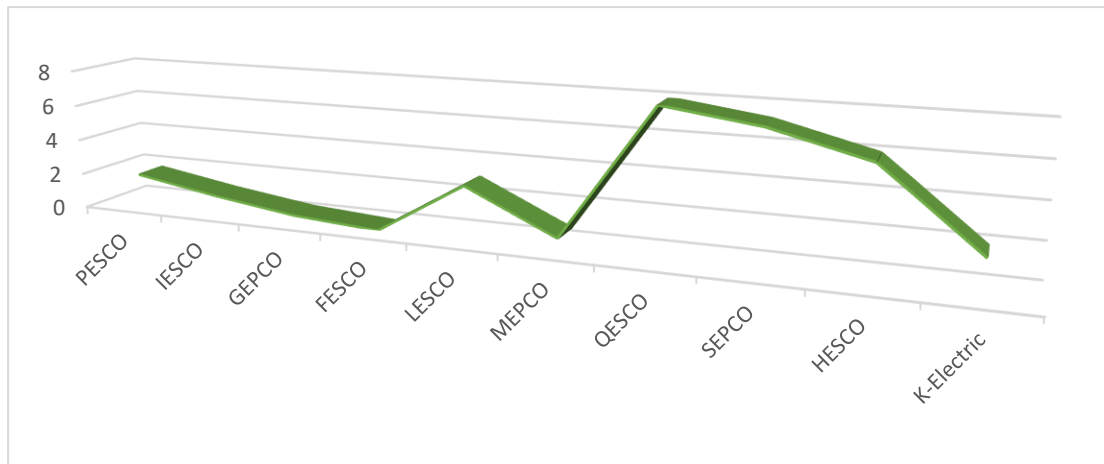


Figure 09: Load Shedding (Hours)

Keeping in view the requirements of performance Standards, distribution companies have been and are being directed to follow the order of load shedding according to different categories of consumers as provided in PSDR 2005. The distribution companies are also directed to submit their proposals regarding gradual decrease in AT&C losses in order to avoid load shedding. Moreover, the data pertaining to AT&C losses for last three years has been critically analyzed and surprisingly observed that no significant improvement has been achieved by the DISCOs especially PESCO, SEPCO, HESCO and QESCO. Therefore, these DISCOs have been directed to initiate actions against the relevant officers/officials who are directly or indirectly involved in such poor performance.

Keeping in view the technological innovations and AMI/AMR projects executed by K-Electric, the Authority directed DISCOs to initiate the process pertaining to installation of AMI/AMR meters at least on PMT level and submit a plan in this regard. So that defaulters may be disconnected on PMT level rather switching off the whole 11kV feeder because good paying consumers are badly suffering from such AT&C policy.

2.7 Nominal Voltage (% of consumers whose voltage remained beyond prescribed limit):

According to Rule 4(d) of Performance Standards (Distribution) Rule 2005, a distribution company shall supply power to at least 95% of its consumers within the range of $\pm 5\%$ of the nominal voltages.

Following are the nominal voltage for distribution system:

- a) 400/230 V
- b) 11 kV
- c) 33kV
- d) 66kV
- e) 132kV

Name of DISCO	No of Consumers made complaint about voltage	Total No. of consumers in DISCO	%of Complaints w.r.t total no. of consumer	Allowed % in PSDR 2005
PESCO	10869.5	3484150	0.312	5
IESCO	9513	3261112	0.292	5
GEPCO	10133	3816224	0.266	5
FESCO	7782	4341618	0.179	5
LESCO	5525	5527859	0.100	5
MEPCO	4308	6518207	0.066	5
QESCO	3273	640530	0.511	5
SEPCO	432	805769	0.054	5
HESCO	189	1173063	0.016	5
K-Electric	219577	3184342	6.896	5

Table 9: Nominal Voltages

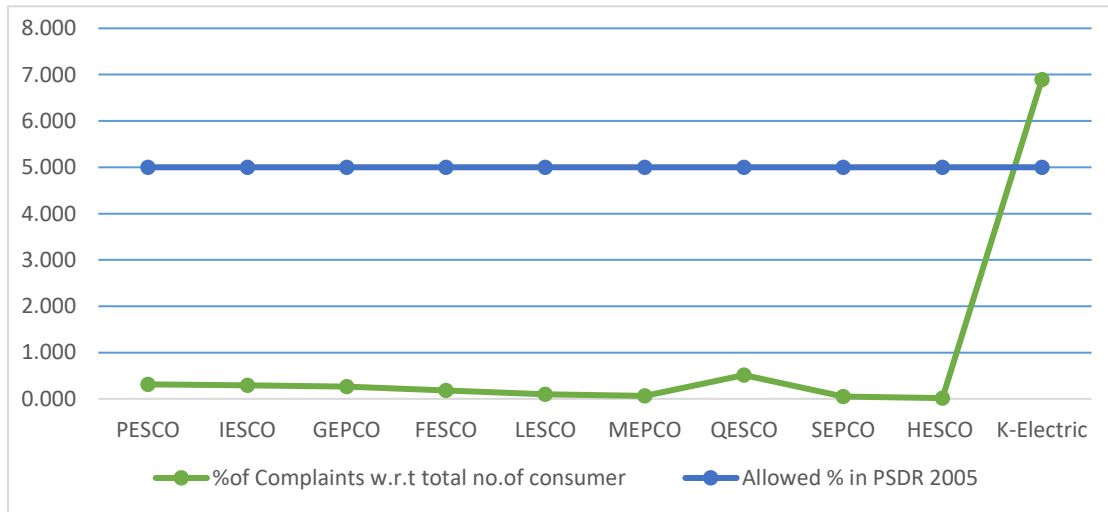


Figure 10: Nominal Voltages

From the data given above, it is observed that all DISCOs except K-Electric have provided the voltage within limits to more than 95% of its consumers. Further it is noted that the figures provided by HESCO SEPCO indicate that both have received only 189 and 432 complaints regarding voltage variations in whole year, which does not appear factual.

2.8 Consumer Service Complaints:

Following table depicts the analysis of number of average complaints per day per complaint center received and subsequently resolved by the DISCOs in FY 2020-21. The number of complaint centers mentioned in the below table have also been provided by the distribution companies.

Name of DISCO	Reported Complaints	Total No. of compliant center in DISCO	No. of Complaints per complaint center	Average number of complaints per day per compliant center
PESCO	124363	174	714.730	1.958
IESCO	372326	124	3002.629	8.226
GEPCO	239918	146	1643.274	4.502
FESCO	312514	376	831.154	2.277
LESCO	544663	233	2337.609	6.404
MEPCO	226862	217	1045.447	2.864
QESCO	36827	75	491.027	1.345
SEPCO	21148	78	271.128	0.743
HESCO	126437	88	1436.784	3.936
K-Electric	2018041	30	67268.033	184.296

Table 10: Consumer Service Complaints

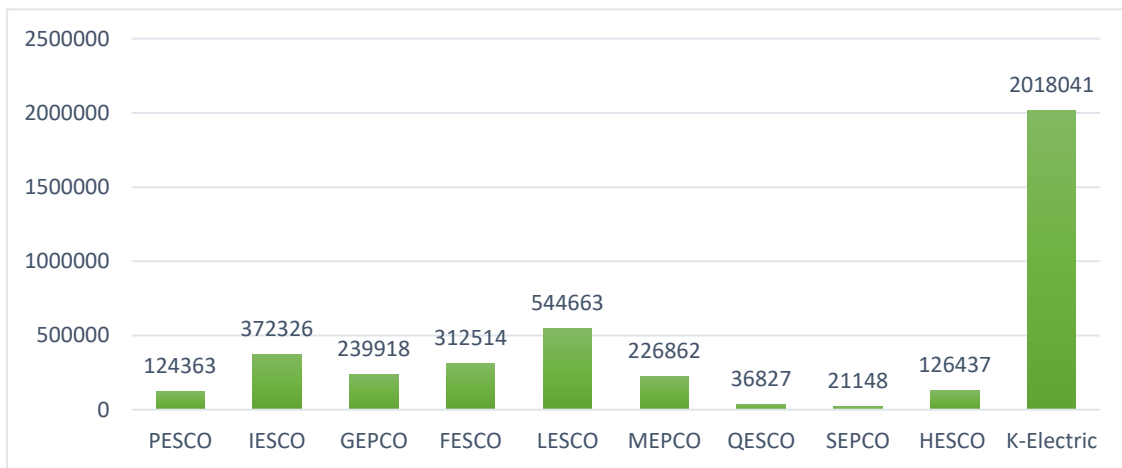


Figure 11: Consumer Service Complaints

Above table indicates that SEPCO did not received a single complaint in a day in each of its complaint center. Whereas PESCO, FESCO, MEPCO, QESCO and HESCO had received 2 to 3 complaints in a single day in each of their complaint centers during the year 2020-21. Apparently, all this is not based on true facts. NEPRA being regulator is continuously monitors the data submitted by DISCOs finds lot of discrepancies. Further, NEPRA is in process to ensure the provision of correct data to be submitted by DISCOs by conducting regular meetings with them. Moreover, in order to develop the computerized data base system, NEPRA has established an online portal, so that accurate and timely data provision can be ensured. It is also a fact that all DISCOs have been penalized due to submission of such incorrect data.

2.9 SAFETY (No. of Fatalities for both Employees and Public):

FY 2020-21 reveals a terrible picture with respect to number of fatal accidents as a total of **176 fatalities** including both employees and public occurred in the service territories of distribution companies which is higher than the last year. This clearly shows that DISCOs have failed to comply with safety standards as prescribed in performance standards

(Distribution) Rule 2005, wherein, Rule 4(g) states that a distribution company shall implement suitable, necessary and appropriate rules, regulations and working practices as outlined in its Distribution Code or applicable documents to ensure the safety of its staff and general public.

Name	No. of fatalities for employees	No. of fatalities for Public	Total No. of fatalities reported
PESCO	7	16	23
IESCO	5	17	22
GEPCO	4	3	7
FESCO	7	2	9
LESCO	9	2	11
MEPCO	6	7	13
QESCO	3	3	6
SEPCO	2	12	14
HESCO	2	30	32
K-Electric	0	39	39
Total	45	131	176

Table 11: SAFETY

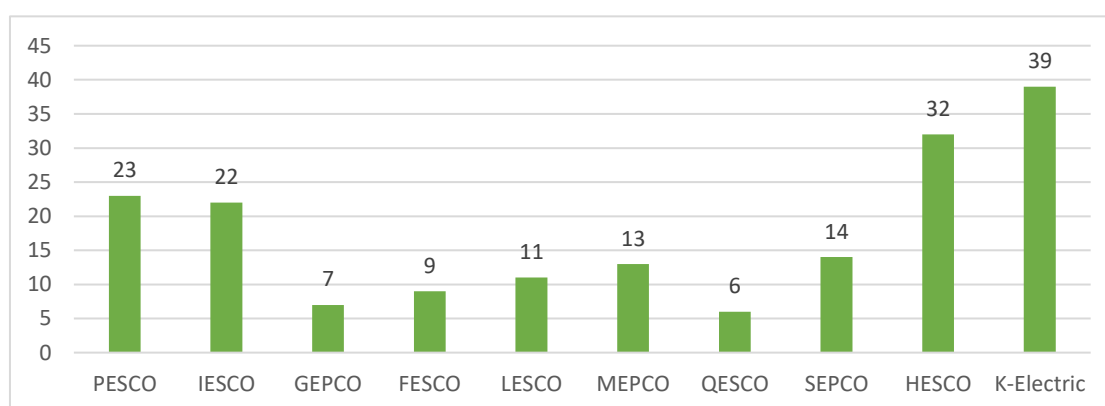


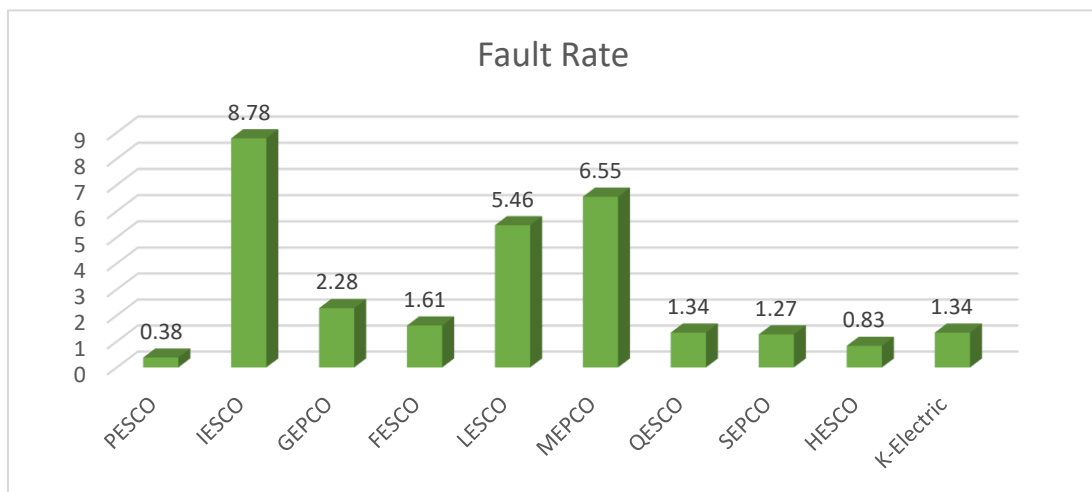
Figure 12: SAFETY

The highest number of deaths were occurred in K-Electric during the FY 2020-21. Further, it is observed that all the fatalities of KE pertains to general public followed by HESCO, IESCO and PESCO with number of 30, 17 and 16 fatalities respectively. With respect to employees, LESCO is the largest contributor where 09 employees were died in a year 2020-21 followed by FESCO and MEPCO with 7 and 6 fatalities respectively. Such a big number of accidents/fatalities in distribution companies is a very alarming and need to take immediate actions to prevent such human losses.

It is pertinent to highlight that NEPRA being Regulator consider the safety as of paramount importance and persistently directs the DISCOs to develop safety culture by adhering the safety standards. NEPRA being regulator has established Health, Safety and Environment (HSE) Department in order to frame safety related legislation, review and update of already existing safety standards and subsequent its implementation in letter & spirit. Furthermore, investigations under section 27A of NEPRA amended Act are also being carried out against DISCOs and subsequently fines are being imposed. In addition, DISCOs are directed to conduct detailed surveys to identify all points of safety hazards and take immediate steps to remove such safety hazards in order to avoid fatal accidents.

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

Name	Total length of Distribution System(Km)	Total No. of Faults	Fault Rate(No. of Faults/km)
PESCO	112417.44	42706	0.37988768
IESCO	57699.55	506493	8.77811005
GEPCO	69339	158380	2.28414024
FESCO	71255.65	114684	1.60947237
LESCO	49304	269287	5.46176781
MEPCO	52090.2	341703	6.55983275
QESCO	55899.07	75032	1.34227636
SEPCO	42868.67	54268	1.26591284
HESCO	46920.46	38795	0.8268248
K-Electric	28792	38656	1.34259517

Table 12: Fault Rate (No. of faults/km)**Figure 13: Fault Rate (No. of faults/km)**

Fault rate is a key performance indicator which is used to measure the distribution company's performance in terms of number of faults occurred in one kilometer length of distribution line.

In this regards, the data submitted by DISCOs is reviewed and observed that PESCO remained the efficient company in FY 2020-21 followed by HESCO, SEPCO, QESCO, K-Electric and FESCO. Whereas IESCO is less efficient company with the result of approx. 8 number of faults/Km. In this regard, it is categorically mentioned that the data submitted by DISCOs is highly objectionable as the ground situation is totally opposite. Here PESCO shows that its system is highly efficient, whereas, its SAIFI & SAIDI are on higher side. Similar situation is observed in case of IESCO which claims that it is super-efficient in terms of SAIFI & SAIDI, however, its fault rate highest among all. DISCOs has to understand that number of faults/tripping data should be in line which is not the case here. This all leads towards the two scenarios whether DISCOs are manipulating the data or they have lack of understanding of PSDR 2005.

3. COMPARISON OF DATA FOR FY2019-20 WITH LAST FOUR YEARS (2016-17, 2017-18, 2018-19, & 2019-20):

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

Name of DISCO	2016-17	2017-18	2018-19	2019-20	2020-21
PESCO	32.6	38.1	36.6	38.9	38.20
IESCO	9.02	9.13	8.86	8.69	8.55
GEPCO	10.24	10.1	9.87	9.51	9.23
FESCO	10.6	10.5	9.8	9.6	9.30
LESCO	13.8	13.8	13.2	12.4	11.96
MEPCO	16.9	16.6	15.8	15.2	14.97
QESCO	23.1	22.4	23.6	26.7	27.96
SEPCO	37.8	36.47	37	36.3	35.30
HESCO	30.8	29.8	29.5	28.9	28.20
K-Electric	21.71	20.4	19.1	19.73	17.54

Table 13: Transmission and Distribution (T&D) Losses

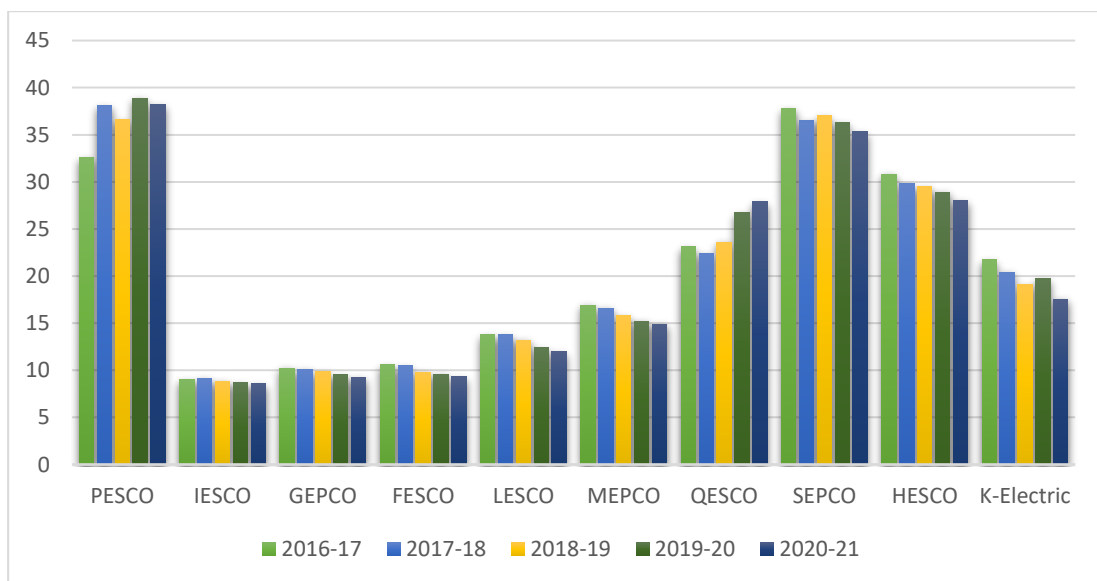


Figure 14: Transmission and Distribution (T&D) Losses

Above table and Figure shows the trend of T&D losses for last four years in comparison to year 2020-21. Further, it is observed that IESCO, GEPCO, FESCO, LESCO, MEPCO, HESCO and K-Electric is following gradually decreasing approach, Whereas PESCO, QESCO and SEPCO are inconsistent in this regard.

3.2 Recovery (%):

Name of DISCO	2016-17	2017-18	2018-19	2019-20	2020-21
PESCO	89.1	89.5	88.6	87.7	102.5
IESCO	99.64	99.1	90	90.3	116.87
GEPCO	98	97	98	94.36	106
FESCO	97.21	97.93	91.03	94.18	102
LESCO	100.45	97.8	97.67	94.6	98.72
MEPCO	96.21	99.68	99.8	94.21	103.61
QESCO	43.5	46.1	24.4	80.6	39.8
SEPCO	110.8	60.1	63.9	56.6	64.7
HESCO	95.2	76.7	74.5	70.1	76.7
K-Electric	90.04	91.04	92.6	92.14	94.8

Table 14: Recovery (%)

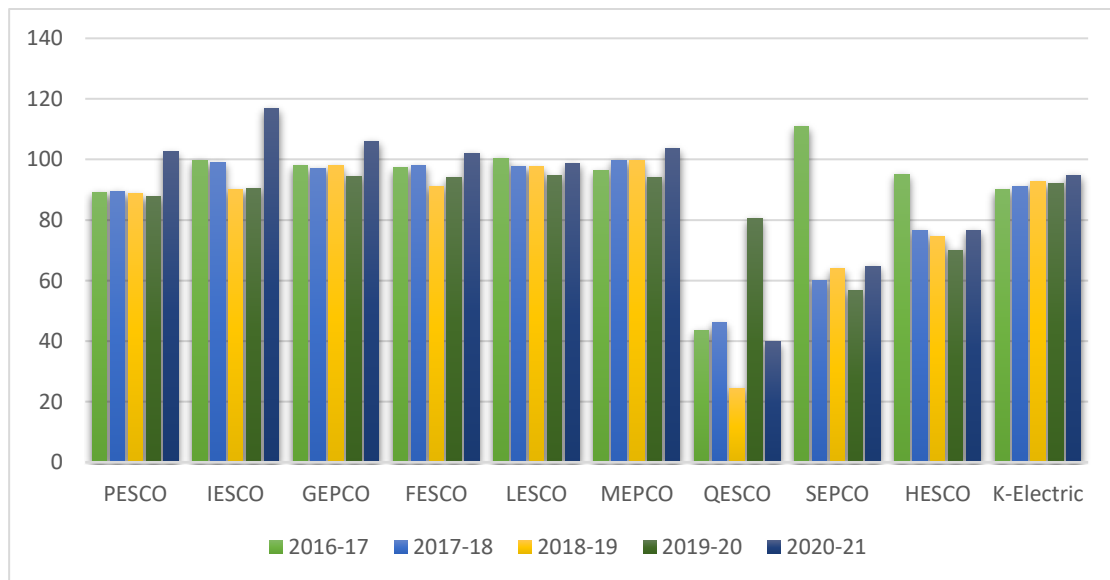


Figure 15: Recovery (%)

The above table and graph illustrate that all the DISCOs have improved their performance as compared to previous years except QESCO and even few DISCOs have crossed the 100% target and collected the previous debts. QESCO's recovery has been decreased to half i.e. from 80 to 39% in 2020-21 as compared to last year 2019-20.

3.3 System Average Interruption Frequency Index (SAIFI):

Name of DISCO	2016-17	2017-18	2018-19	2019-20	2020-21
PESCO	160.6	170	189.01	187.93	193.7
IESCO	0.029	0.04	0.05	0.06	0.05
GEPCO	3.26	30.97	27.13	25.64	24.78
FESCO	39.99	38.87	36.86	35.65	35.53
LESCO	37.44	32.92	30.19	33.03	34.66
MEPCO	235	316.22	369.159	375.98	471
QESCO	96.92	95.18	97.98	99.12	97.96
SEPCO	601.37	568.59	516.37	478	441.04
HESCO	188.4	180.74	170.86	162.85	137.1
K-Electric	19.6	17.55	28.95	27.56	28

Table 15: System Average Interruption Frequency Index (SAIFI)

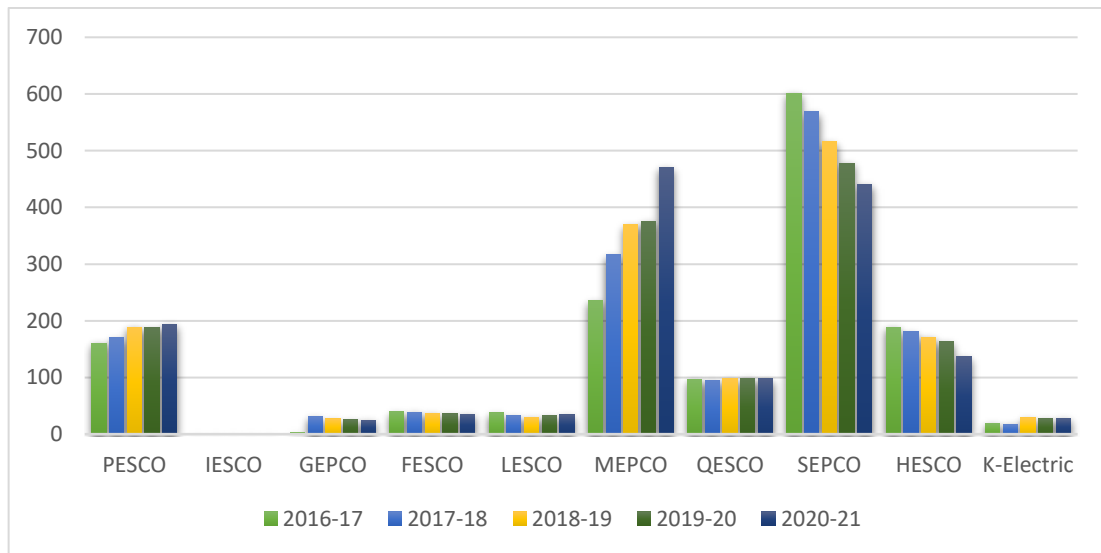


Figure 16: System Average Interruption Frequency Index (SAIFI)

While comparing the data of SAIFI for last five years, it is observed that GEPCO and FESCO are improving gradually and near to targets set by NEPRA. Whereas SEPCO and HESCO are also improving consistently, although their values are far away from set limits. However, the SAIFI values of PESCO, LESCO, and K-Electric have been increased as compared to last year and show the inconsistent trend among last five years. Moreover MEPCO's performance is going to be worst every year as their SAIFI is continuously increasing.

3.4 System Average Interruption Duration Index (SAIDI):

Name	2016-17	2017-18	2018-19	2019-20	2020-21
PESCO	14643	16222.79	16696.51	14924.4	14821
IESCO	0.79	0.73	1.27	1.36	1.36
GEPCO	55.03	53.67	45.19	42.4	40.33
FESCO	1532.04	1951.38	1627.99	1331.1	1252.7
LESCO	5595.63	4338.23	3538.93	3593.73	3821.84
MEPCO	20411.32	26822.35	31419.3	31920.87	39733
QESCO	8310.4	8287.9	8402.4	8375.85	8176.2
SEPCO	5666.01	4397.44	4306.74	4095	3893.3
HESCO	12799.12	12292.57	10973.67	9751	7852.2
K-Electric	1142.5	1451.42	2950.22	2655	2564.66

Table 16: System Average Interruption Duration Index (SAIDI)

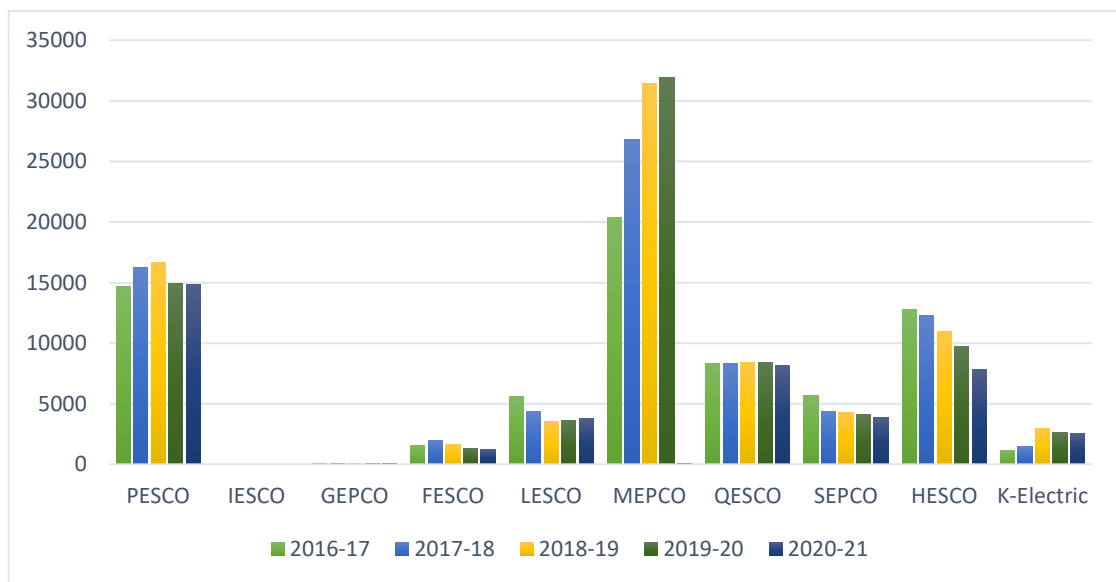


Figure 17: System Average Interruption Duration Index (SAIDI)

From above data, it is observed that all DISCOs have shown slight improvement except IESCO, but still their values are on higher side i.e. in number of hours, however, PSDR 2005 requires DISCO's SAIDI in minutes. IESCO has claimed same as of previous year that its SAIDI is within NEPRA target i.e. 1.36

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

Name of DISCO	2016-17	2017-18	2018-19	2019-20	2020-21
PESCO	4.2	2.23	0.5	2.01	6.9
IESCO	0	0	0	0	0
GEPCO	12.3	18.79	21.9	22.9	23.2
FESCO	34.7	15.94	21	17.43	17.9
LESCO	5.77	5.23	4.1	1.85	1.7
MEPCO	5.14	5.28	7.9	5.44	4.6
QESCO	20.4	1.31	4.13	17.72	31.3
SEPCO	1.27	4.3	13.2	13.39	8.75
HESCO	0	0.03	0.003	3.78	0.03
K-Electric	8	4	3.3	9.62	17.5

Table 17: % of Pending Ripe Connections

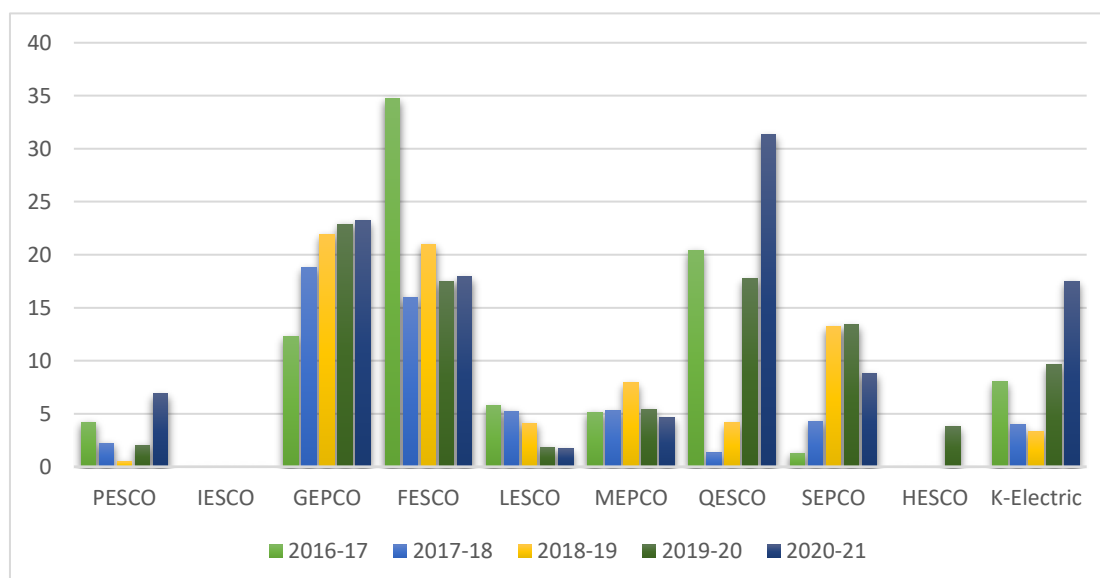


Figure 18: % of Pending Ripe Connections

Aforementioned table and figure represent the data pertaining to %age of consumers who were not provided new connections within the prescribed time frame. The trend of last four year in comparison with FY2020-21 shows variations in terms percentages, which shows the DISCOs performance is inconsistent.

3.6 Load Shedding (Hours):

Name of DISCO	2016-17	2017-18	2018-19	2019-20	2020-21
PESCO	3.2	3.25	1.55	2.92	1.8
IESCO	3.33	3.125	1.625	1.83	1
GEPCO	3.25	11	0.5	0	0.33
FESCO	3.23	0.74	0.32	0	0
LESCO	2	1.7	2.4	3	3
MEPCO	3.35	1.3	0.43	0.32	0.66
QESCO	3.875	5.8	7.33	6	8
SEPCO	2.25	2.25	2.25	2.33	7.3
HESCO	4.5	3.75	5.5	5.67	6
K-Electric	2.5	1.26	1.77	2.73	1.94

Table 18: Load Shedding (Hours)

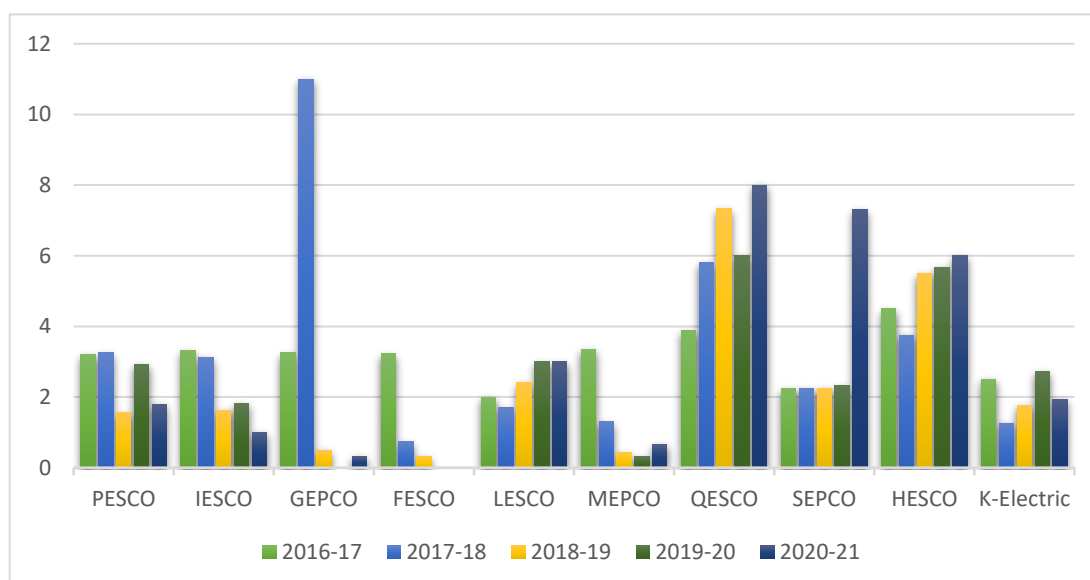


Figure 19: Load Shedding (Hours)

Table 18 and Figure 20 indicate the average daily load shedding hours in each DISCO. The trend analysis shows the variation in data pertaining to load shedding hours submitted by DISCOs. It is a matter of fact that actual load shedding being carried out in DISCOs is much more than the data portrayed by the DISCOs and NEPRA being regulator continuously monitor the situation through NEPRA Regional Offices.

3.7 Nominal Voltages (No. of Consumers who made complaints about Voltages):

Name of DISCO	2016-17	2017-18	2018-19	2019-20	2020-21
PESCO	19564	6812	19118	9640	10869.5
IESCO	6890	6352	10079	10114	9513
GEPCO	5071	5485	9604	10433	10133
FESCO	4127	4572	5682	5241	7782
LESCO	10887	3303	12287	4197	5525
MEPCO	0	0	7888	6623	4308
QESCO	4355	4541	4525	3519	3273
SEPCO	1033	1734	928	1100	432
HESCO	201	212	191	186	189
K-Electric	293	628	3096	262170	219577

Table 19: Nominal Voltages

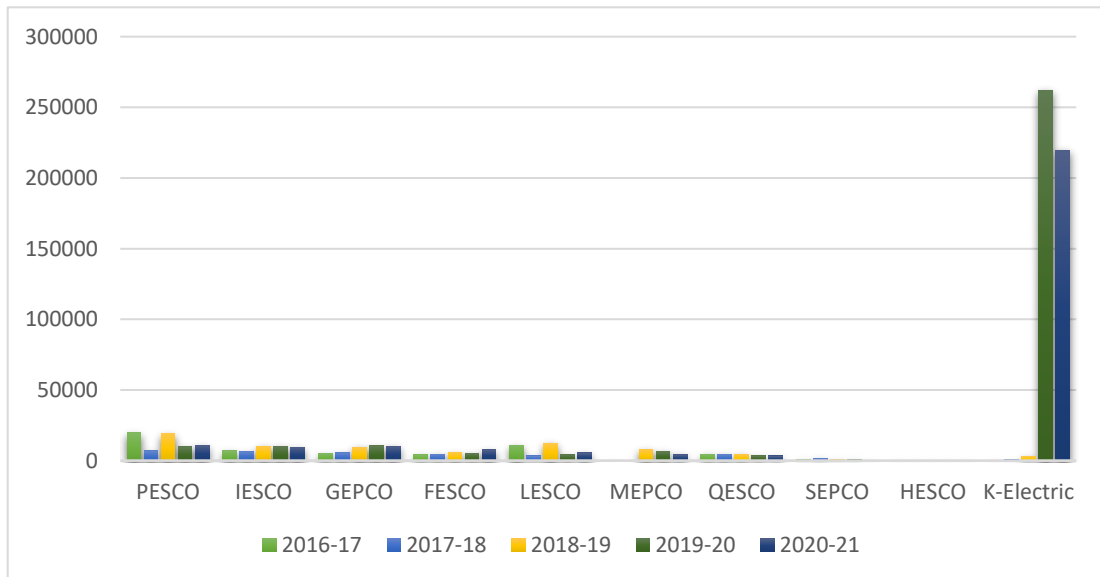


Figure 20: Nominal Voltages

The above data shows the number of consumers who made complaints about voltage fluctuations in FY 2020-21. The numbers of complaints submitted by DISCO is on lower side, however, actual the problem is severe especially in summer season. Further, the data indicate mix trend of increase and decrease of number of complaints. It is important to note that voltage fluctuations can be controlled and better quality of supply can be provided to the consumers through corrective and preventive maintenance of distribution system by the DISCOs.

3.8 Consumer Service Complaints:

Name of DISCO	2016-17	2017-18	2018-19	2019-20	2020-21
PESCO	441951	99729	79832	111303	124363
IESCO	46587	43504	555437	513524	372326
GEPCO	824816	820260	838502	255019	239918
FESCO	496176	464662	354801	335662	312514
LESCO	1245699	6231274	548487	528442	544663
MEPCO	74869	48425	88785	218091	226862
QESCO	52211	68876	48378	47152	36827
SEPCO	9085	28900	7571	7598	21148
HESCO	61925	62269	90703	120113	126437
K-Electric	2675268	1966269	1807368	2034227	2018041

Table 20: Consumer Service Complaints

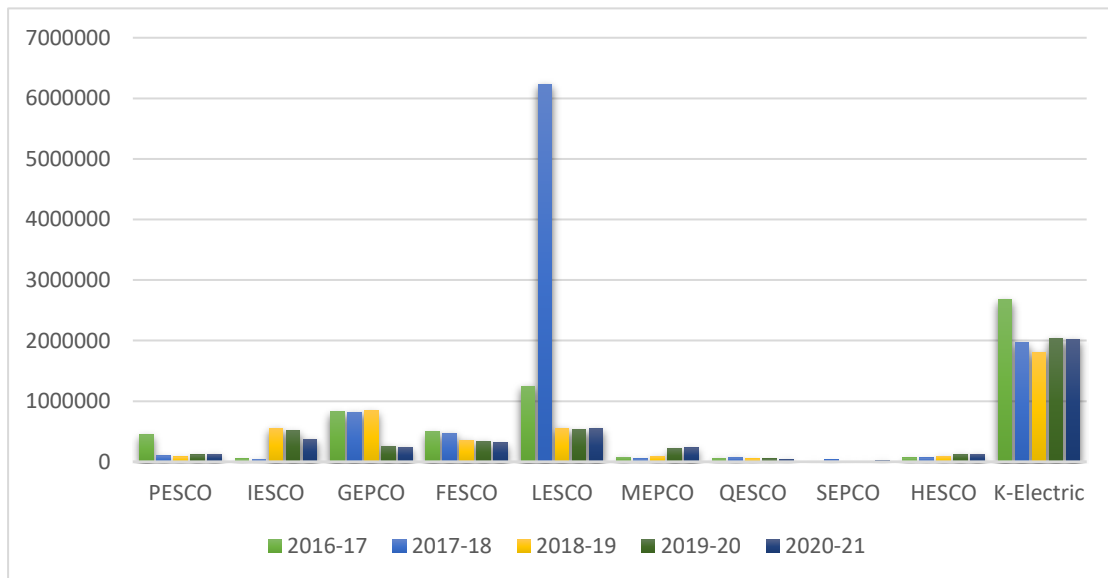


Figure 21: Consumer Service Complaints

The above data depicts the number of complaints received by the distribution companies over the period of last five years. Overall, a mixed trend has been observed in from of increasing and decreasing trend. Further PESCO, LESCO, MEPCO, SEPCO and HESCO had received more number of complaints at their complaint centers in FY 2020-21 as compared to last year i.e. 2019-20. The highest & lowest number of complaints received by K-Electric and SEPCO respectively in year 2020-21.

3.9 SAFETY (Total No. of fatal Accidents for both Employees and General Public):

Name of DISCO	2016-17	2017-18	2018-19	2019-20	2020-21
PESCO	20	10	16	31	23
IESCO	15	20	29	17	22
GEPCO	16	29	12	8	7
FESCO	15	7	8	12	9
LESCO	29	21	9	8	11
MEPCO	10	17	14	13	13
QESCO	11	6	7	7	6
SEPCO	20	17	12	13	14
HESCO	3	15	12	8	32
K-Electric	8	10	54	43	39
Total	147	152	173	160	176

Table 21: Safety (No. of Fatal Accidents)

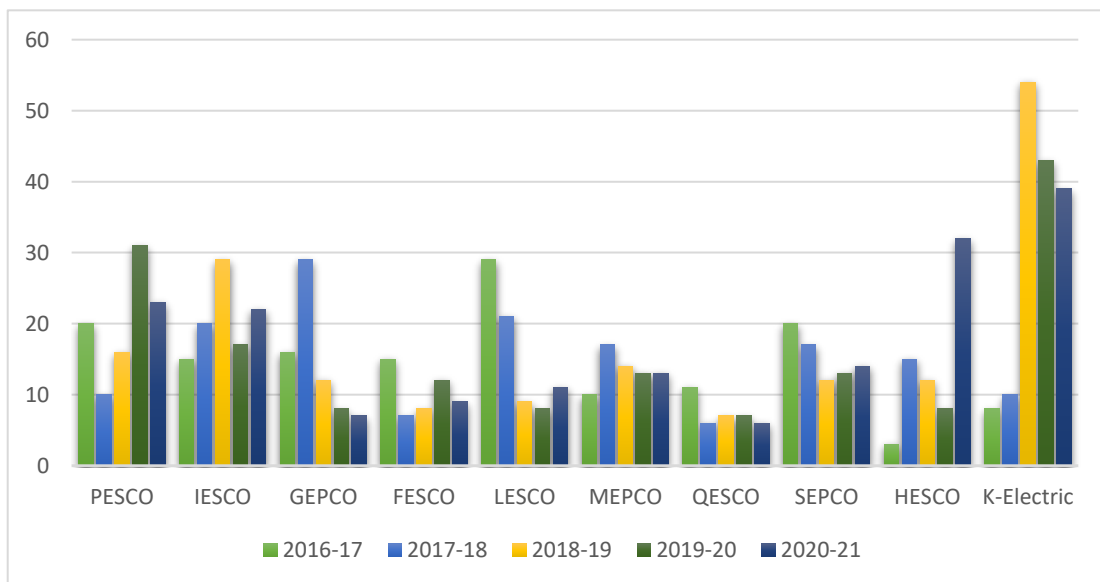


Figure 22: Safety (No. of Fatal Accidents)

While reviewing the above table & graph, it is noted with concern that the number of fatal accidents both for employees and general public have been increased from 160 to 176 in 2020-21 as compared to last year i.e. 2019-20. This increase of 16 number of fatal accidents clearly reveals the seriousness of DISCOs towards the adherence with safety standards as prescribed in Performance Standards, Distribution Code and Power Safety Code. NEPRA being regulator regularly monitors the compliance of DISCOs with respect to safety standards and stern actions in form of investigations, legal proceedings and subsequent imposition of fines are being taken.

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

Name of DISCO	2016-17	2017-18	2018-19	2019-20	2020-21
PESCO	0.86	0.45	0.574	0.4	0.38
IESCO	1.41	8.52	12.09	11.34	8.77
GEPCO	3.04	3.04	3.327	3.49	2.28
FESCO	1.64	1.11	1.247	1.38	1.61
LESCO	2.99	5.91	6.08	5.58	5.46
MEPCO	4.06	5.82	6.67	60.6	6.55
QESCO	0.49	0.48	0.782	1.01	1.34
SEPCO	3.12	2.49	1.89	1.55	1.26
HESCO	1.696	0.84	0.998	0.96	0.82
K-Electric	0.95	0.85	1.31	1.34	1.34

Figure 22: Fault Rate (No. of Faults/KM)

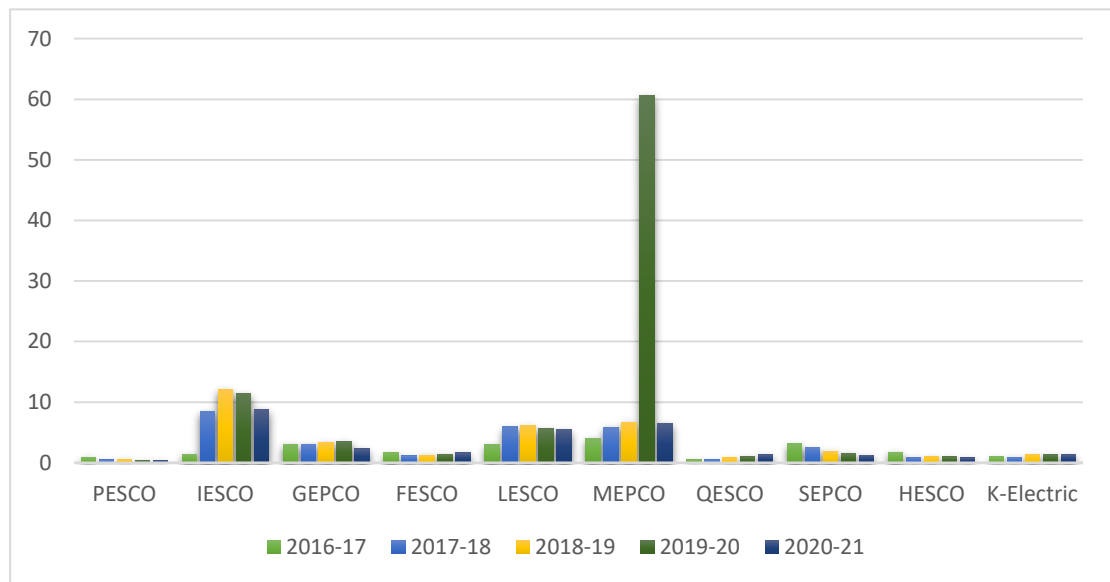


Figure 23: Fault Rate (No. of Faults/KM)

While observing the data pertaining to fault rate for last five years, it is observed that neither the results of this parameter are uniform nor showing the gradual improvements. Further, the comparison of data for the FY 2019-20 with FY 2020-21 indicates that all the DISCOs have improved its fault rate except QESCO and K-Electric.