



NATIONAL ELECTRIC POWER  
REGULATORY AUTHORITY



# **2019-20**

## **Performance Evaluation Report**

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**DISTRIBUTION COMPANIES**

ALONG WITH COMPARISON OF LAST  
FOUR YEARS  
(2015-16, 2016-17, 2017-18 & 2018-19)

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## **EXECUTIVE SUMMARY**

According to the Performance Standards (Distribution) Rules (PSDR) 2005, each distribution company is required to submit to NEPRA an Annual Performance Report (APR) in a prescribed format. The APRs for the year 2019-20, 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.

Based on the data submitted by the distribution companies (DISCOs), a comprehensive report namely “Performance Evaluation Report (PER)” indicating the compliance level with Performance Standards by the distribution companies is prepared. The report provides the analysis of data for the FY 2019-20 along with comparison of last four years i.e. 2015-16, 2016-17, 2017-18 and 2018-19. It is noted with concern that in FY 2019-20, no any noticeable improvement in the performance of distribution companies has been observed. Similarly, the issue of data authenticity still remains there.

During analysis of the data submitted by the distribution companies for the year 2019-20, following major observations have been noted:

**T&D Losses and Recovery:** It is a matter of concern that DISCOs could not take such measures to bring improvement in this critical area. It has been noted with serious concern that during FY 2019-20, DISCOs contributed loss of around **Rs. 59 Billion** due to their inefficiency in T&D losses and **Rs. 160 Billion** in recovery. The reported figures of T&D losses indicate that except GEPCO and FESCO, none of the DISCO could meet the regulator’s expectations. Particularly, QESCO, PESCO, SEPCO and HESCO have shown the worst performance among all DISCOs in this regard. As far as recovery is concerned, all DISCOs could not achieve the figure of 100%. However, LESCO, GEPCO, MEPCO, FESCO, K-Electric and IESCO have shown their recoveries more than 90%.

**Time Frame for New Connection:** It is alarming that power demand is not being generated despite availability of ample generation in the country and non-provision of new connections to the eligible consumers within the prescribed time frame is one of the factor contributing to this less power demand. The submitted data shows that GEPCO, FESCO, QESCO and SEPCO have failed to provide more than 95% of the applied connections within the time frame as prescribed in PSDR 2005. Further, GEPCO’s performance remained poor in this regard.

**Load Shedding:** NEPRA has serious reservations over the authenticity of data regarding load shedding being carried out by DISCOs in their service territories. Although the duration of load shedding has been decreased in FY 2019-20 as compared to previous years, but it can be eliminated if DISCOs avail 100% of their allocated quota of power. During the reported period, it came to the knowledge of NEPRA that DISCOs are carrying out load management as per AT&C losses criteria. But it is a matter of concern that criteria set by the DISCOs is not in line with the requirements of NEPRA Performance Standards.

**Consumer Complaints:** NEPRA being a regulator vigilantly observes the interests of consumers, therefore, DISCOs are being persistently advised to improve their complaint handling mechanism and provide relief to consumers to the maximum level. In this regard, NEPRA regularly monitors the

complaint handling mechanism of distribution companies and issue directions to resolve the consumer complaints timely. But unfortunately, NEPRA team during visits of different DISCOs found complaint centers in poor and deteriorated conditions. Further, NEPRA has serious reservations over the data submitted by the distribution companies which shows that SEPCO did not receive any single complaint in a day in any of its complaint center. Similarly, PESCO, QESCO, FESCO, MEPCO and HESCO also received only 2 to 3 complaints per day in each of their complaint centers in FY 2019-20

**Safety:** NEPRA considers the safety as most important parameter for measuring the performance of DISCOs. From the reports provided by DISCOs, it is evident that around **160** fatal accidents of employees and public occurred in year 2019-20. NEPRA Authority took serious notice and decided to conduct investigations under Section 27A of the NEPRA Act. Accordingly, investigations against K-Electric, PESCO, HESCO, SEPCO and FESCO have been conducted, whereas, remaining DISCOs are also in plan. NEPRA has been continuously pushing the DISCOs to perform better in this regard.

It is relevant to state that during the FY 2019-20, NEPRA continued monitoring activities including data verification and found that the data submitted by the distribution companies is significantly fudged. Accordingly, NEPRA took serious actions and legal proceedings against MEPCO were initiated due to non-compliance with Performance Standards and Codes of Conduct and also due to misreporting of data. After following all due legal process including hearing opportunities, MEPCO was penalized with the fine of Rs. 06 Million. Previously in the FY 2018-19, PESCO and IESCO were penalized with the fine amounts of Rs. 06 Million and 04 Million respectively. Therefore, this year NEPRA has also decided to abandon the exercise of Performance Ranking of distribution companies till the time, reliable data is received. For this purpose, NEPRA has initiated the efforts to move DISCOs towards the adoption of AMI/AMR system and K-Electric is taking lead as compared to all other DISCOs.

Inspite of constant instructions and monitoring by the regulator, DISCOs did not show any distinguishable performance in FY 2019-20 and continued in the businesses as usual. Therefore, major reforms like privatization of DISCOs need to be carried out.

## **1. 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 31<sup>st</sup> 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 Service 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 comparison with the compliance report to Authority for the previous year.

This report contains analysis of performance parameters through descriptive & 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 connection in permitted time period,
- Total number of consumers who made complaints about Voltage,
- Average duration of load shedding (hrs.),
- Total Consumer Service Complaints received by DISCO during the year,
- Fault Rate (faults/km) of distribution system,
- Electrical incident 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:

Power system losses can be divided into two categories i.e. technical & non-technical losses. Technical losses are naturally occurring losses, whereas, non-technical losses are caused by the external actions to the power system. Losses in the distribution of electricity cannot be eliminated but can be minimized by proper planning of the distribution systems.

Table 1 indicates the figures of T&D losses as reported by DISCOs and the targets set by NEPRA through their respective tariff determinations. An overall picture is also given which depicts that weighted average of 2.23% losses occurred in excess as compared to the weighted average of allowed limit by NEPRA in FY 2019-20.

Name of DISCO	Actual Reported (%)	Allowed in Tariff (%)	Breach of Target (%)
(1)	(2)	(3)	4=(2-3)
<b>PESCO</b>	38.9	31.95	6.95
<b>IESCO</b>	8.69	8.60	0.09
<b>GEPCO</b>	9.51	10.03	-0.52
<b>FESCO</b>	9.60	10.10	-0.50
<b>LESCO</b>	12.40	10.88	1.52
<b>MEPCO</b>	15.20	15.00	0.20
<b>QESCO</b>	26.70	17.50	9.2
<b>SEPCO</b>	36.30	29.75	6.55
<b>HESCO</b>	28.90	22.59	6.31
<b>K-Electric</b>	19.73	17.76	1.97
<b>W. Av:</b>	<b>18.20</b>	<b>15.97</b>	<b>2.23</b>

TABLE 1

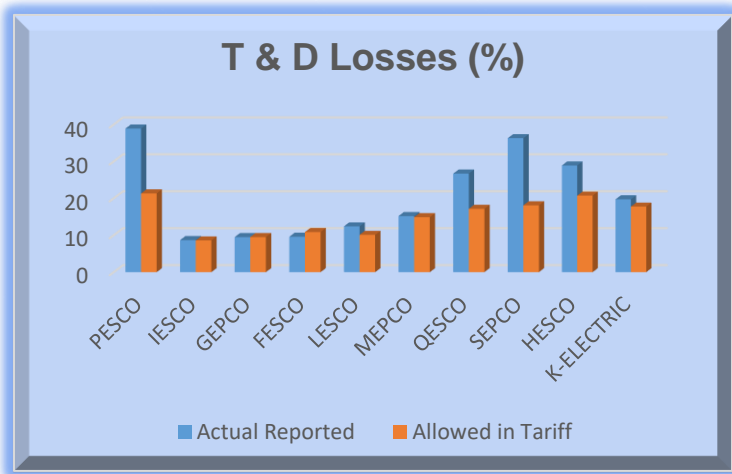


FIGURE 1

The data provided by distribution companies for the year 2019-20 shows that GEPCO and FESCO have met with Regulator's expectations followed by IESCO, MEPCO, LESCO and K-Electric with slight difference. Whereas, the performances of QESCO, PESCO, SEPCO and HESCO remained worse in this regard in FY 2019-20 as their %ages pertaining to breach of NEPRA target are on higher side which leads to increase in circular debt.



**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 2019-20)	Energy Lost (M. kWh) (FY 2019-20)	Applicable Tariff with QTR & FCA	Financial Loss (Million Rs.)
1	2	3	4=(2/100)*3	5	6=4*5
PESCO	6.95	14,792	1028.04	21.907	22,521.27
IESCO	0.09	11,435	10.29	15.343	157.88
GEPCO	-0.52	10,991	-57.15	15.401	(880.17)
FESCO	-0.50	14,510	-72.55	17.258	(1,252.07)
LESCO	1.52	23,528	357.63	16.382	5,858.69
MEPCO	0.20	19,325	38.65	17.657	682.44
QESCO	9.20	6,604	607.57	17.995	10,933.22
SEPCO	6.55	4,253	278.57	21.377	5,954.99
HESCO	6.31	5,471	345.22	22.927	7,914.85
K-Electric	1.97	17,787	350.40	19.799	6,937.57
Total			2886.67		58,828.67

**TABLE 2**

Table 2 illustrates the financial loss suffered by National Exchequer due to breach of NEPRA Targets by the Distribution Companies i.e. around **Rs. 59 Billion**. During analysis of DISCO wise financial loss, it is observed that PESCO has contributed highest followed by QESCO and HESCO.

**Note:** Above financial impact is calculated by considering notified rates of each DISCO along with Quarterly Tariff Adjustments and Fuel Price Adjustments.

**2.2 Recovery (%):**

Increase in revenue can improve fiscal deficits and provide investable funds for expansion of these public utilities. Considering its importance, NEPRA has made this parameter an essential component for DISCO's performance criteria. DISCOs are encouraged to achieve the rate of 100% recovery.

Name of DISCO	Actual Recovery (%)	Target (%)	Breach of Target (%)
(1)	(2)	(3)	4=(2-3)
PESCO	87.70	100	12.3
IESCO	90.30	100	9.7
GEPCO	94.36	100	5.6
FESCO	94.18	100	5.8
LESCO	94.60	100	5.4
MEPCO	94.21	100	5.8
QESCO	80.60	100	19.4
SEPCO	56.60	100	43.4
HESCO	70.10	100	29.9
K-Electric	92.14	100	7.9
Av:	90.98	100	9.02

**TABLE 3**

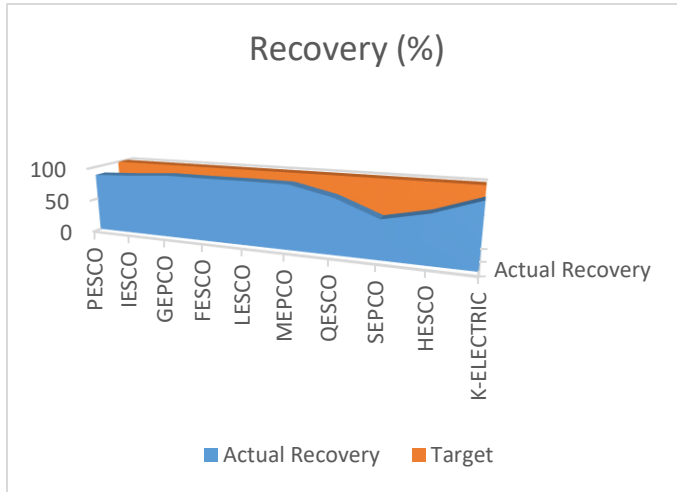


FIGURE 2

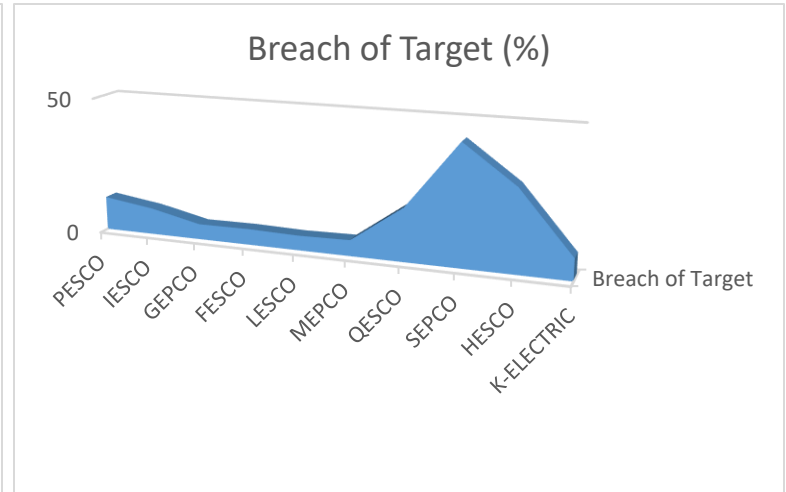


FIGURE 3

Taking a closer look of table 3, it is noted that none of the DISCO has achieved the milestone of 100% recovery. In FY 2019-20, LESCO has shown highest recovery followed by GEPCO, MEPCO, FESCO, K-Electric and IESCO by showing their recoveries as 94.60%, 94.36%, 94.21%, 94.18%, 92.14% and 90.30%. Further, QESCO has touched the number of 80% because of getting subsidy amount. However, SEPCO and HESCO performed poorly by containing figures of 56.60% and 70.10% respectively. Overall weighted average of **90.98%** recovery has been achieved by DISCOs against 100%.

### 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.)
(1)	(2)	(3)	4=(2-3)
PESCO	160627.34	140798.28	19,829.06
IESCO	200958	181405	19,553.00
GEPCO	168125.75	158644.21	9,481.54
FESCO	229297.52	215959	13,338.52
LESCO	387400.95	366469.06	20,931.89
MEPCO	239409.94	225540.41	13,869.53
QESCO	8052.2	6488.7	1563.50
SEPCO	47900	27100	20,800
HESCO	65248.5	45707.1	19,541.4
K-Electric	254886	234856	20,030
Total	1761906.2	1602967.76	158,938.44

TABLE 4

Table 4 illustrates the loss of revenue which was not recovered by the distribution companies due to their poor management. A total loss of around **Rs. 160 Billion** was borne by the National Exchequer in FY 2019-20 which is very alarming and one of the main reason of continuous growing circular debt in Pakistan. It is also observed that QESCO and have incurred very small loss as compared to other DISCOs during the year 2019-20.



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

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

According to Rule 4 (a) of Performance Standards (Distribution) Rules 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). However, keeping in view the repeated requests of distribution companies and law & order situations in different areas of country, NEPRA Authority decided to set the targets for DISCOs by observing their historical data of last five years.

Accordingly, the Authority has set the targets of SAIFI for all DISCO except IESCO and GEPCO for FY 2019-20 based on the methodology i.e. 5% reduction over the mean value of their historic data of last five years. Please note that IESCO and GEPCO have already shown the compliance with prescribed standard of SAIFI. Further, the issue of collecting authentic data is a challenge for NEPRA which is being handled by carrying out regular monitoring of DISCOs.

Name of DISCO	Reported Figures (No.)	Target set by NEPRA (No.)	Breach of Target (No.)
(1)	(2)	(3)	4=(2-3)
PESCO	187.93	239.44	0
IESCO	0.06	13	0
GEPCO	25.64	13	12.64
FESCO	35.65	35.34	0.31
LESCO	33.03	39.52	0
MEPCO	375.98	134.61	241.37
QESCO	99.12	81.9	17.22
SEPCO	478	61.22	416.78
HESCO	162.85	115.67	47.18
K-Electric	27.56	16.22	11.34

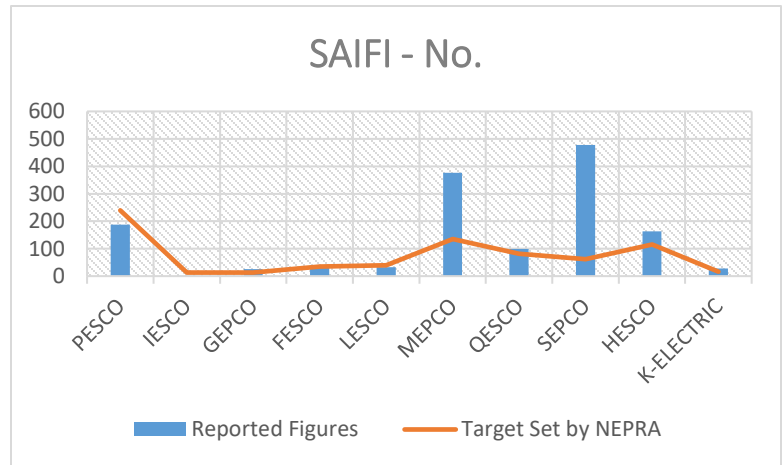


FIGURE 4

TABLE 5

Above table highlights the DISCO's performance with respect to power supply interruptions faced by their consumers. The data reported by the DISCOs related to SAIFI in FY 2019-20 is compared with targets set by NEPRA and observed that PESCO, IESCO and LESCO have complied with NEPRA targets. FESCO is also very close to meet the same, whereas, remaining DISCOs need to work on it by carrying out maintenance activities on regular basis.

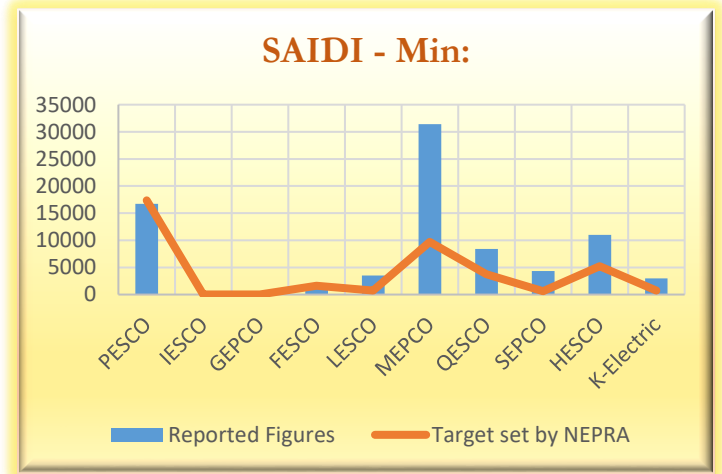
## 2.4 System Average Interruption Duration Index (SAIDI – Minutes):

SAIDI is also a Key Performance 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). However, as like SAIFI, the Authority has set the targets of SAIDI for all DISCO except IESCO and GEPCO for FY 2019-20 based on the methodology i.e. 10% reduction over the mean value of their historic data of last five years.

Name of DISCO	Reported Figures (Min.)	Target set by NEPRA (Min.)	Breach of Target (Min.)
(1)	(2)	(3)	4=(2-3)
PESCO	14,924.40	15,100.93	0.00
IESCO	1.36	14.00	0.00
GEPCO	42.40	14.00	28.40
FESCO	1,331.10	1,402.03	0.00
LESCO	3,593.73	554.98	3,038.75
MEPCO	31,920.87	8,439.82	23,481.05
QESCO	8,375.85	3,188.62	5,187.23
SEPCO	4,095.00	484.33	3,610.67
HESCO	9,751.00	4,450.88	5,300.12
K-Electric	2,655.00	649.48	2,005.52

**TABLE 6**



**FIGURE 5**

Table 6 represents the figures of SAIDI in FY 2019-20 vis a vis targets set by NEPRA and subsequent breach of the targets. Except PESCO, IESCO and FESCO, none of the DISCO has complied with Regulator's targets. Further, it is observed that MEPCO is too far from the NEPRA target followed by HESCO, QESCO and SEPCO. Notwithstanding that, IESCO has submitted that the average duration of each interruption faced by its consumer is 1.36 minutes in 2019-20 which is far away from ground realities.

It is pertinent to mention that NEPRA has taken stern actions against DISCOs upon submission of such fudged data and has imposed fine of Millions of Rupees. Authenticity of data is very important for decision making in regulation of power sector. For this purpose, NEPRA regularly monitors/verify the data submitted by distribution companies.

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

Table represents the %age of consumers who were not provided new connections within the prescribed time frame in FY 2019-20 despite they made payments of demand notices. The data submitted by DISCOs is compared with the limit envisaged in Performance Standards (Distribution) Rules 2005, wherein, Rule 4 (c) states that “a distribution company shall provide electric power service to at least 95% of new connections to its eligible consumers.

This is observed that all DISCOs except GEPCO, FESCO, QESCO and SEPCO have provided more than 95% of the applied connections. GEPCO's performance seems poor in this regard followed by FESCO, QESCO and SEPCO.

It is important to note that NEPRA is vigorously pursuing the compliance of this parameter and also verifying the data submitted by DISCOs particularly those who have claimed 100% provision of applied connections. In case of any misreporting, legal proceedings are initiated leading to imposition of fines.

Name of DISCO	% of Eligible Consumers Who were not provided new connections within Prescribed Time Frame	Allowed Limit in PSDR 2005 (%)	Breach (%)
(1)	(2)	(3)	4=(2-3)
PESCO	2.01	5	0
IESCO	0	5	0
GEPCO	22.9	5	17.9
FESCO	17.43	5	12.43
LESCO	1.85	5	0
MEPCO	5.44	5	0.44
QESCO	17.72	5	12.72
SEPCO	13.39	5	8.39
HESCO	3.78	5	0
K-Electric	9.62	5	4.62

TABLE 7

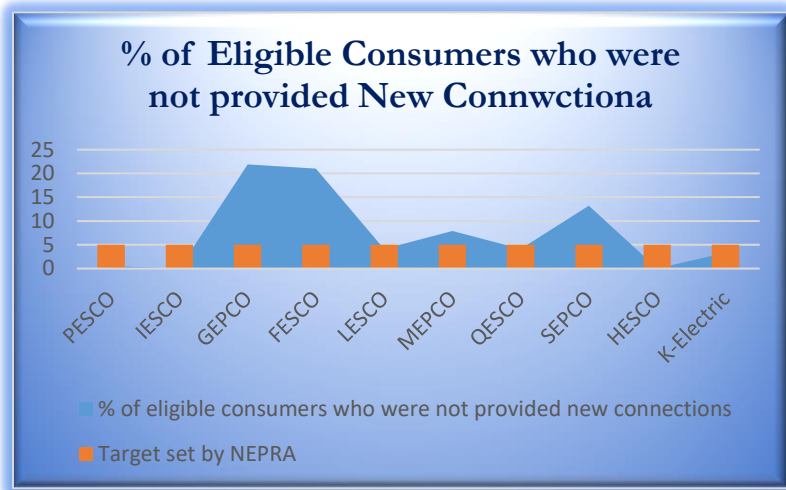


FIGURE 6

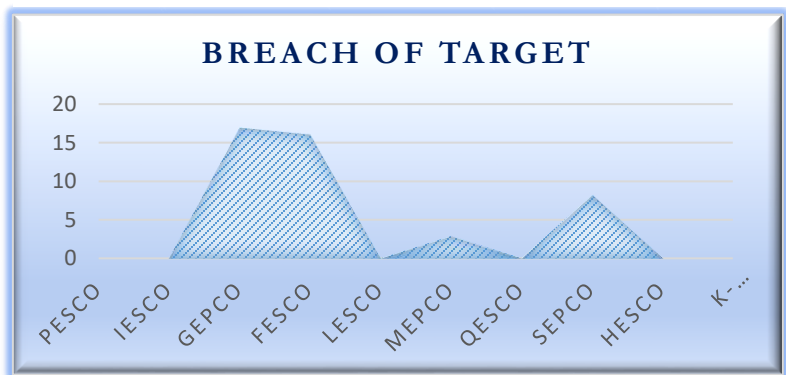


FIGURE 7

## 2.6 Load Shedding (Hours):

Below mentioned table indicates the figures of average daily load shedding carried out by the distribution companies during the FY 2019-20.

Name of DISCO	Reported Figures of Average Daily Load Shedding Hours
PESCO	2.92
IESCO	1.83
GEPCO	0
FESCO	0
LESCO	3
MEPCO	0.32
QESCO	6
SEPCO	2.33
HESCO	5.67
K-Electric	2.73

TABLE 8

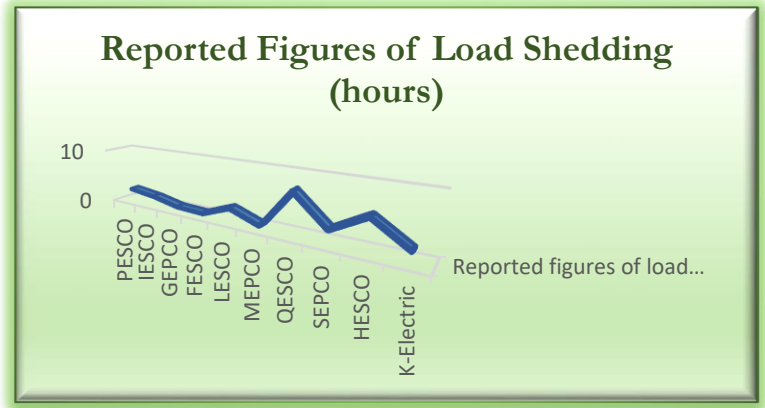


FIGURE 8

The figures reported by the DISCOs except QESCO and HESCO represent that they carried out load shedding for averagely 2 to 3 hours on daily basis, whereas, QESCO and HESCO have reported as 6.0 and 5.67 hours. Overall, this indicates that duration of load shedding in the country significantly decreased due to ample power generation.

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 the requirements of Performance Standards (Distribution) Rules 2005, wherein, Rule 4 (f) states that

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

- 1) Supply to consumers in rural areas; and residential consumers in urban areas where separate feeders exist;*
- 2) Supply to consumers other than industrial, in urban areas;*
- 3) Supply to agriculture consumers where there is dedicated power supply;*
- 4) Supply to industrial consumers;*
- 5) Supply to schools & hospitals;*
- 6) Supply to defense and strategic installations.”*

Keeping in view the requirements of Performance Standards, distribution companies are advised 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.

## 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 voltage.

Name of DISCO	No. of consumers who made complaint about voltage	Total No. of consumers in DISCO	% of complainants w.r.t total no. of consumers	Allowed % in PSDR 2005
(1)	(2)	(3)	4=(2/3)*100	(5)
PESCO	9,640	3,438,306	0.28	5
IESCO	10,114	3,052,057	0.33	5
GEPCO	10,433	3,649,340	0.29	5
FESCO	5,241	4,280,179	0.12	5
LESCO	4,197	5,187,194	0.08	5
MEPCO	6,623	6,399,022	0.10	5
QESCO	3,519	621,020	0.57	5
SEPCO	1,100	788,868	0.14	5
HESCO	186	1,143,293	0.02	5
K-Electric	262,170	2,955,251	8.87	5

TABLE 9

Following are the nominal voltages for the distribution system:

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

From the data given above, it is observed that all DISCOs except K-Electric have provided the voltages to more than 95% of its consumers. Further, it is surprisingly noted that HESCO only received 186 complaints regarding voltage, which is far away from ground facts.

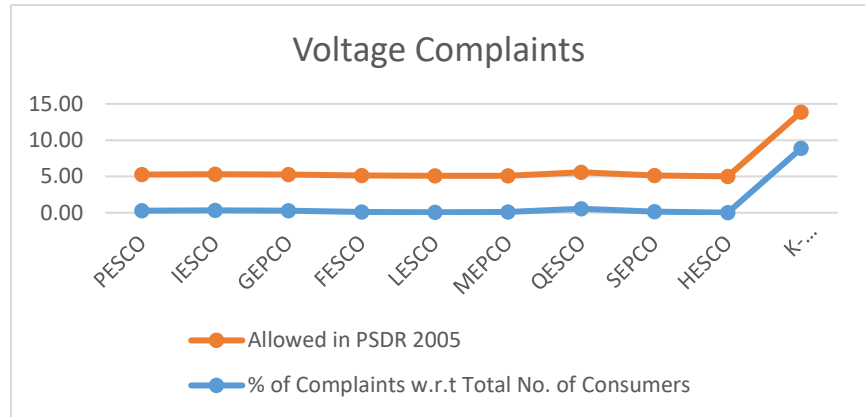


FIGURE 9

It is pertinent to highlight that NEPRA team during visits of different grid stations and Power Distribution Centers (PDCs) of DISCOs physically monitored the voltage levels and found them below the prescribed limits particularly for the feeders of long length. Accordingly, legal proceedings are initiated and penalties are imposed.

## 2.8 Consumer Service Complaints:

Following table depicts the analysis of number of average complaints per day per complaints received and subsequently resolved by the DISCOs in FY 2018-19.

Name of DISCO	Reported Figures of Complaints	Total No. of Complaint Centers in DISCO	No. of complaints per complaint center	Average number of complaints per day per complaint center
(1)	(2)	(3)	4=(2/3)	5=4/365
PESCO	111,303	174	639.67	1.75
IESCO	513,524	124	4,141.32	11.35
GEPCO	255,019	146	1,746.71	4.79
FESCO	335,662	376	892.72	2.45
LESCO	528,442	233	2,267.99	6.21
MEPCO	218,091	217	1,005.03	2.75
QESCO	47,152	75	628.69	1.72
SEPCO	7,598	78	97.41	0.27
HESCO	120,113	88	1,364.92	3.74
K-Electric	2,034,227	30	67,807.57	185.77

TABLE 10

Above table also indicates that SEPCO is the distribution company who did not receive any single complaint in a day in any of its complaint center. Similarly, PESCO, QESCO, FESCO, MEPCO and HESCO have also submitted that only 2 to 3 complaints per day were received by them in each of their complaint centers. However, all this is not based on true facts as NEPRA team is continuously carrying out monitoring activities since 2015-16 and found lot of discrepancies in data submitted by the DISCOs. Further, NEPRA is also in process to make the correct data available at DISCOs by conducting meetings with them in order to develop the computerized data base. It is also fact that all DISCOs have been penalized due to submission of such fudged data.

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

Name of DISCO	No. of fatalities for Employees	No. of fatalities for Public	Total No. of Fatalities Reported	Target
(1)	(2)	(3)	4=(2+3)	(5)
PESCO	14	17	31	0
IESCO	6	11	17	0
GEPCO	3	5	8	0
FESCO	9	3	12	0
LESCO	8	0	8	0
MEPCO	10	3	13	0
QESCO	1	6	7	0
SEPCO	4	9	13	0
HESCO	6	2	8	0
K-Electric	0	43	43	0
Total	61	99	160	0

TABLE 11



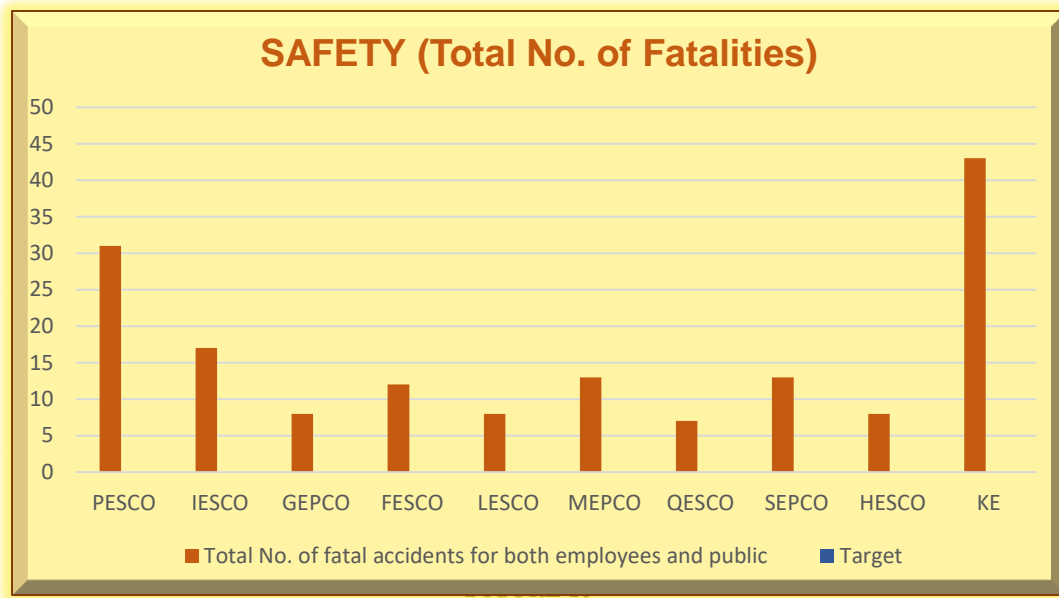


FIGURE 10

FY 2019-20 reveals a terrible picture with respect to number of fatal accidents as a total of **160** fatalities including both employees and public occurred in distribution companies. This clearly shows that DISCOs have failed to comply with Safety Standards as prescribed in Performance Standards (Distribution) Rules 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.

If the figures of employees are looked then PESCO is the largest contributor where **14** employees were dead in a year followed by MEPCO with the number of **10**. Averagely 14 fatal accidents in each distribution company in a year is very alarming and need to take immediate measures/steps.

It is pertinent to highlight that NEPRA being Regulator considers the safety as of paramount importance and persistently advises the DISCOs to develop safety culture by adhering the safety standards. Further, investigations under Section 27A of NEPRA amended Act have also been initiated against DISCOs and subsequently fines have been imposed. In addition, DISCOs are directed to conduct detailed surveys and 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/Kilometer):**

Name of DISCO	Total Length of Distribution System (km)	Total No. of Faults	Fault Rate (No. of Faults/km)
(1)	(2)	(3)	4=(3/2)
<b>PESCO</b>	85,334.98	34,470	0.40
<b>IESCO</b>	56,730.44	643,604	11.34
<b>GEPCO</b>	45,403.00	158,275	3.49
<b>FESCO</b>	80,388.00	110,818	1.38
<b>LESCO</b>	48,101.23	268,438	5.58
<b>MEPCO</b>	6,373.6	386,263	60.60
<b>QESCO</b>	63,933.14	64,266	1.01
<b>SEPCO</b>	44,777.97	69,303	1.55
<b>HESCO</b>	46,920.46	45,193	0.96
<b>K-Electric</b>	28,571.00	38,174	1.34

TABLE 12

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 line.

In this regard, the data submitted by DISCOs is given in Table 12. The same is reviewed and observed that PESCO remained an efficient company in FY 2019-20 followed by HESCO and QESCO as they have reported their fault rate less than 1 and equal to 1. Further, the ratio of faults per kilometer for FESCO, SEPCO and K-Electric ranges from 1 to 2. Whereas, MEPCO is worst in this regard as average number of 60 faults were occurred in one kilometer length of its distribution system.

This all leads to uncertainty of the data as on the other hand their data related to unplanned power supply interruptions is on higher side. The aforementioned data can also be hard to believe as most of the time NEPRA team during their visits of different DISCOs found the system in deteriorated condition.

### 3. COMPARISON OF DATA FOR FY 2019-20 WITH LAST FOUR YEARS (2015-16, 2016-17, 2017-18 & 2018-19):

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

Name of DISCO	2015-16	2016-17	2017-18	2018-19	2019-20
IESCO	9.1	9.02	9.13	8.86	8.69
PESCO	33.8	32.6	38.1	36.6	38.9
GEPCO	10.58	10.24	10.01	9.87	9.51
FESCO	10.2	10.6	10.5	9.8	9.6
LESCO	13.9	13.8	13.8	13.2	12.4
MEPCO	16.4	16.9	16.6	15.8	15.2
QESCO	23.8	23.1	22.4	23.6	26.7
SEPCO	37.72	37.8	36.47	37	36.3
HESCO	26.5	30.8	29.8	29.5	28.9
K-Electric	22.24	21.71	20.4	19.1	19.73

TABLE 13

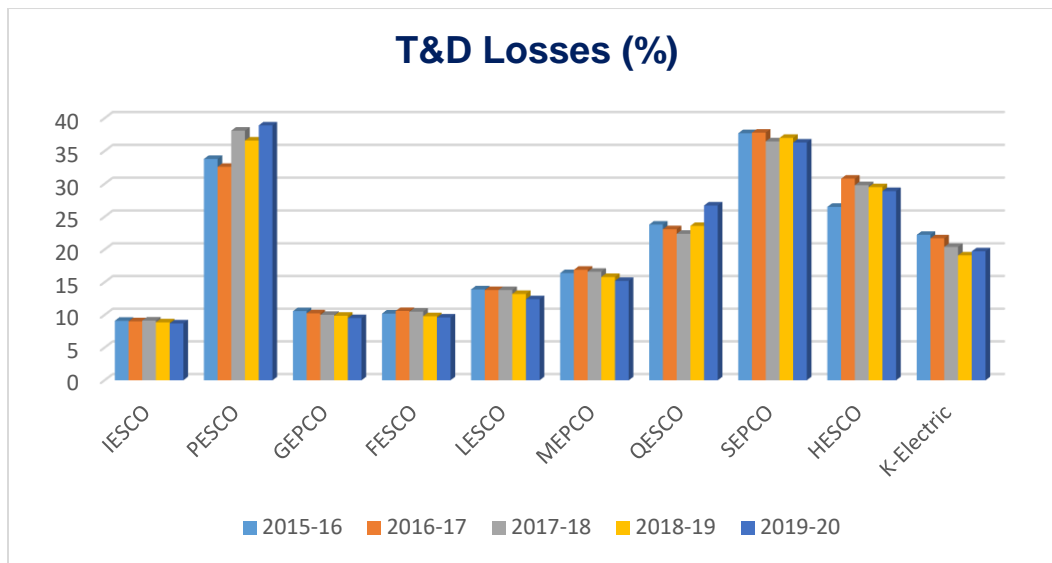


FIGURE 12

Above table and figure indicate the trend of data related to T&D losses of all distribution companies over the period of last five years. Further, it is observed that all DISCOs have improved their T&D losses figures in 2019-20 as compared to 2018-19 except PESCO and QESCO. Overall, all DISCOs have made gradual decrease in their losses during the period of last five years starting from 2015-16 except PESCO, QESCO and SEPCO.

### 3.2 Recovery (%):

Name of DISCO	2015-16	2016-17	2017-18	2018-19	2019-20
IESCO	99.3	99.64	99.1	90	90.3
PESCO	88.6	89.1	89.5	88.6	87.7
GEPCO	99.6	98	97	98	94.36
FESCO	100.06	97.21	97.93	91.03	94.18
LESCO	99.65	100.45	97.8	97.67	94.6
MEPCO	99.99	96.21	99.68	99.8	94.21
QESCO	71.6	43.5	46.1	24.4	80.6
SEPCO	55.2	110.8	60.1	63.9	56.6
HESCO	72.4	95.2	76.7	74.5	70.1
K-Electric	87.63	90.04	91.04	92.6	92.14

TABLE 14

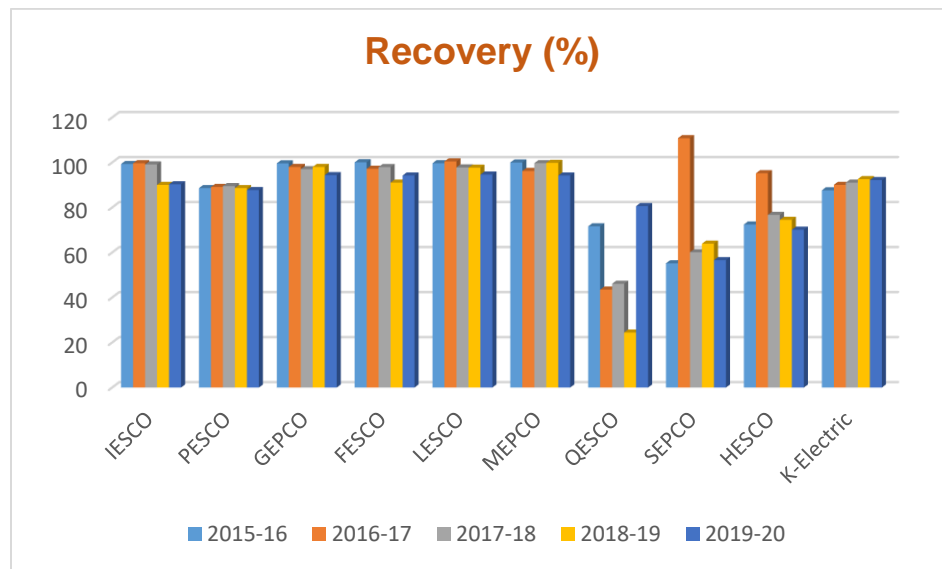


FIGURE 13

Table 14 and its graphical representation illustrate that only FESCO and QESCO have improved their recoveries in FY 2019-20 as compared to 2018-19, whereas, other distribution companies remained downward. Overall, the inconsistency in collection of revenues actually shows the inefficiencies of DISCOs which can be made consistent by applying good governance techniques.

### 3.3 System Average Interruption Frequency Index (SAIFI – No.):

Name of DISCO	2015-16	2016-17	2017-18	2018-19	2019-20
IESCO	0.03	0.029	0.04	0.05	0.06
PESCO	261.65	160.6	170	189.01	187.93
GEPCO	35.44	3.26	30.97	27.13	25.64
FESCO	32.41	39.99	38.87	36.86	35.65
LESCO	45.79	37.44	32.92	30.19	33.03
MEPCO	203	235	316.22	369.159	375.98
QESCO	107	96.92	95.18	97.98	99.12
SEPCO	216.71	601.37	568.59	516.37	478
HESCO	184	188.4	180.74	170.86	162.85
K-Electric	20.52	19.6	17.55	28.95	27.56

TABLE 15

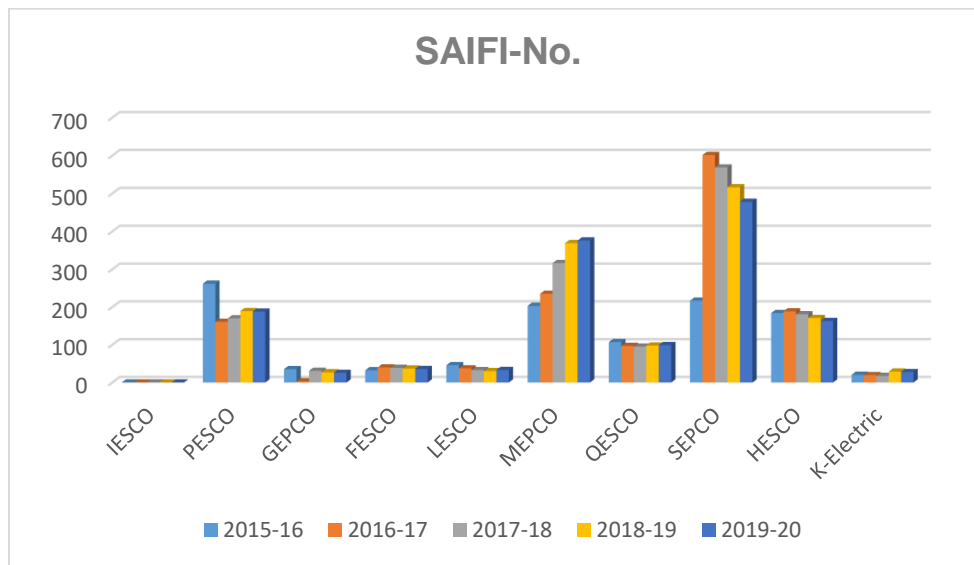


FIGURE 14

While comparing the data of SAIFI for FY 2019-20 as compared to 2018-19, it is observed that PESCO, GEPCO, FESCO, SEPCO, HESCO and K-Electric have shown improvement. Whereas, LESCO, MEPCO and QESCO have shown decline in their performance in this regard. Hence, it can be said that these distribution companies have failed to provide reliable power supply in 2019-20 as compared to 2018-19.

### 3.4 System Average Interruption Duration Index (SAIDI – Min.):

Name of DISCO	2015-16	2016-17	2017-18	2018-19	2019-20
IESCO	0.82	0.79	0.73	1.27	1.36
PESCO	24927.12	14,643	16222.79	16696.51	14,924.40
GEPCO	59.49	55.03	53.67	45.19	42.40
FESCO	1714	1532.04	1951.38	1627.99	1,331.10
LESCO	2926.29	5595.63	4338.23	3538.93	3,593.73
MEPCO	17592	20411.32	26822.35	31419.3	31,920.87
QESCO	7290	8310.4	8287.9	8402.4	8,375.85
SEPCO	1879.37	5666.01	4397.44	4306.74	4,095.00
HESCO	12623	12,799.12	12292.57	10973.67	9,751.00
K-Electric	1210	1142.5	1451.42	2950.22	2,655.00

TABLE 16

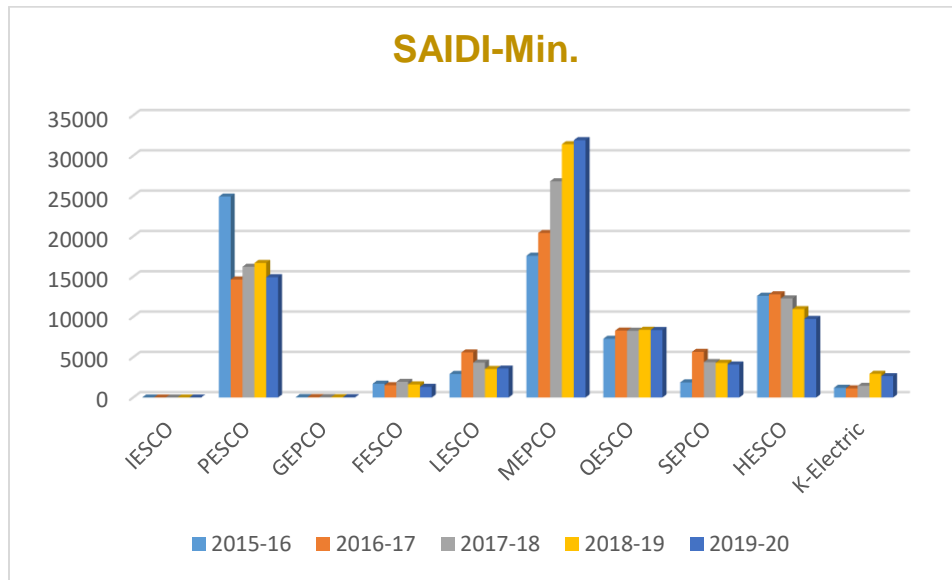


FIGURE 15

Similarly, the figures of SAIDI of all distribution companies indicate that PESCO, GEPCO, FESCO, QESCO, SEPCO, HESCO and K-Electric have improved in 2019-20 as compared to 2018-19, whereas, remaining DISCOs have failed to do the same.

It is also matter of fact that there is no computerized data base mechanism in the distribution companies based upon which it can be said that the data related to SAIFI and SAIDI as submitted by the DISCOs is 100% correct.



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

Name of DISCO	2015-16	2016-17	2017-18	2018-19	2019-20
IESCO	0	0	0	0	0
PESCO	3.6	4.2	2.23	0.5	2.01
GEPCO	8.6	12.35	18.79	21.9	22.9
FESCO	19.8	34.7	15.94	21	17.43
LESCO	9.95	5.77	5.23	4.1	1.85
MEPCO	5.7	5.14	5.28	7.9	5.44
QESCO	20.3	20.4	1.31	4.13	17.72
SEPCO	1.23	1.27	4.3	13.2	13.39
HESCO	0	0	0.03	0.003	3.78
K-Electric	1.9	8	4	3.3	9.62

TABLE 17

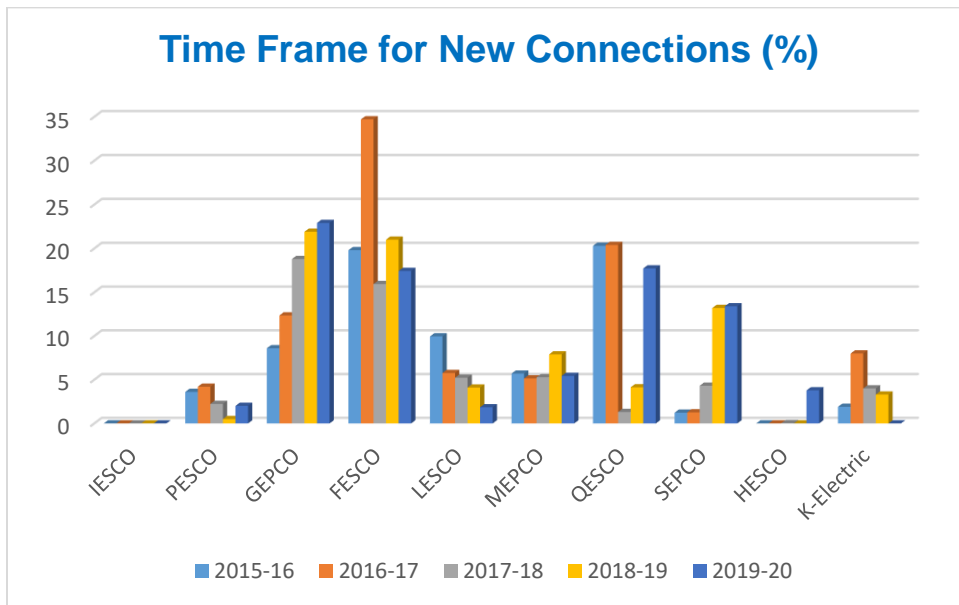


FIGURE 16

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 five years as given above shows variations in terms of increase and decrease in %age which means that DISCO's performance is inconsistent in this regard. If the data for FY 2019-20 is compared with 2018-19, it can be seen that GEPCO, QESCO, SEPCO and K-Electric have failed to improve its performance and reduce the pendency of ripe connections.

### 3.6 Load Shedding (Hours):

Name of DISCO	2015-16	2016-17	2017-18	2018-19	2019-20
IESCO	3.43	3.33	3.125	1.625	1.83
PESCO	2.3	3.2	3.25	1.55	2.92
GEPCO	4	3.25	11	0.5	0
FESCO	3.5	3.23	0.74	0.32	0
LESCO	1.67	2	1.7	2.4	3
MEPCO	3.2	3.35	1.3	0.43	0.32
QESCO	2.83	3.875	5.8	7.33	6
SEPCO	1	2.25	2.25	2.25	2.33
HESCO	3.33	4.5	3.75	5.5	5.67
K-Electric	1.33	2.5	1.26	1.77	2.73

TABLE 18

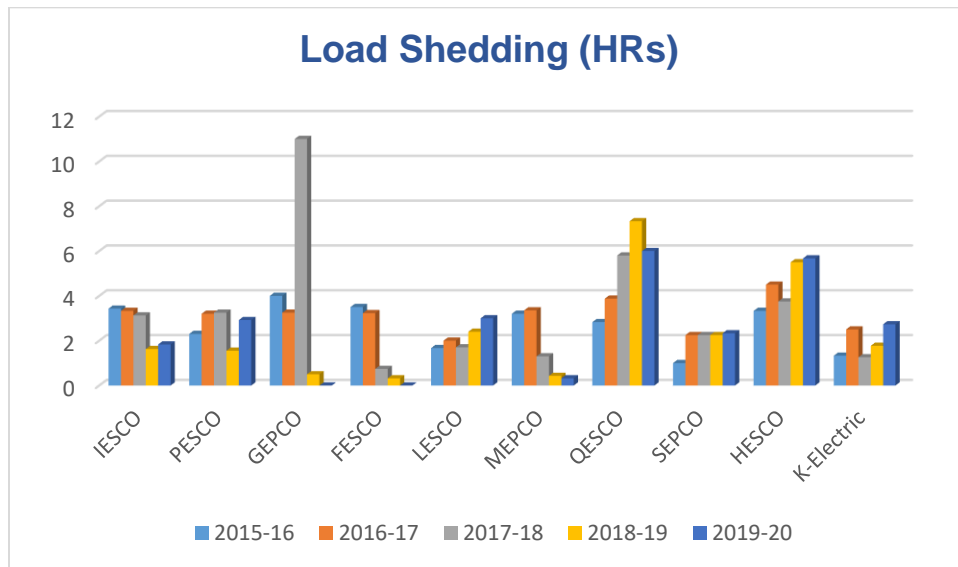


FIGURE 17

Table 18 and Figure 20 indicate the data related to average daily load shedding hours for the period of last five years. FY 2019-20 shows that only GEPCO, FESCO, MEPCO and QESCO have reduced the time duration (hours) of load shedding as compared to 2019-20.

### 3.7 Nominal Voltage (No. of Consumers who made complaint about Voltage):

Name of DISCO	2015-16	2016-17	2017-18	2018-19	2019-20
IESCO	6,508	6,890	6,352	10,079	10,114
PESCO	38,635	19,564	6,812	19,118	9,640
GEPCO	3,906	5,071	5,485	9,604	10,433
FESCO	10,488	4,127	4,572	5,682	5,241
LESCO	17,631	10,887	3,303	12,287	4,197
MEPCO	0	0	0	7,888	6,623
QESCO	4,273	4,355	4,541	4,525	3,519
SEPCO	0	1,033	1,734	928	1,100
HESCO	186	201	212	191	186
K-Electric	253	293	628	3,069	262,170

TABLE 19

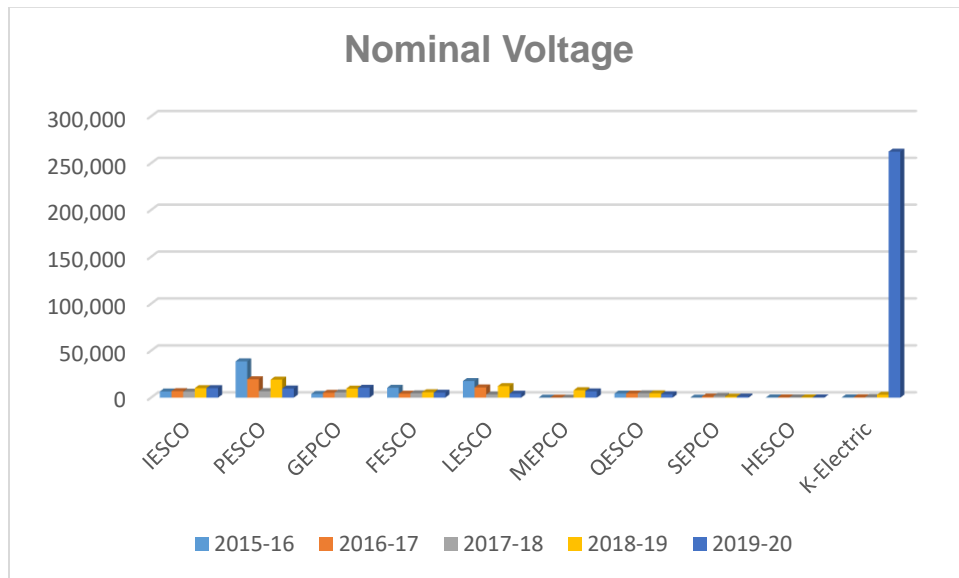


FIGURE 18

Above table and figure show the data related to number of consumers who made complaint about voltage fluctuation in 2019-20. However, it is surprisingly noted that the numbers given by DISCOs are very less as compared to their total number of consumers being served by them. This leads to the indication of dubious data as NEPRA team during its visits of different DISCOs found the voltage levels beyond the prescribed limits.

### 3.8 Consumer Service Complaints:

Name of DISCO	2015-16	2016-17	2017-18	2018-19	2019-20
IESCO	63,831	46,587	43,504	555,437	513,524
PESCO	103,983	441,951	99,729	79,832	111,303
GEPCO	826,226	824,816	820,260	838,502	255,019
FESCO	353,019	496,176	464,662	354,801	335,662
LESCO	1,548,464	1,245,699	6,231,274	548,487	528,442
MEPCO	73,296	74,869	48,425	88,785	218,091
QESCO	5,198	52,211	68,876	48,378	47,152
SEPCO	8,516	9,085	28,900	7,571	7,598
HESCO	56,602	61,925	62,269	90,703	120,113
K-Electric	481,061	2,675,268	1,966,269	1,807,368	2,034,227

TABLE 20

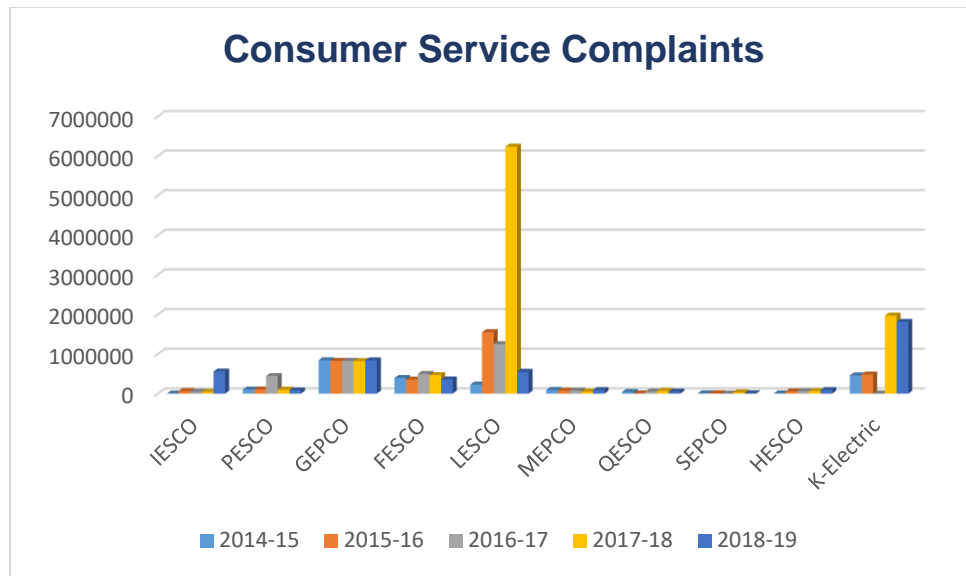


FIGURE 19

The table and figure in this section depict the number of complaints received by the distribution companies over the period of last five years starting from 2015-16. Overall, a mixed trend has been observed in form of increasing and decreasing trends. Further, PESCO, MEPCO, HESCO and K-Electric received more number of complaints in 2019-20 as compared to 2018-19. The lower number of complaints and minimum time for disposal of the same are the actual indicators of customer satisfaction.

### 3.9 Safety (Total No. of Fatal Accidents for both Employees and General Public):

Name of DISCO	2015-16	2016-17	2017-18	2018-19	2019-20
IESCO	19	15	20	29	17
PESCO	23	20	10	16	31
GEPCO	12	16	29	12	8
FESCO	15	15	7	8	12
LESCO	24	29	21	9	8
MEPCO	20	10	17	14	13
QESCO	5	11	6	7	7
SEPCO	17	20	17	12	13
HESCO	24	3	15	12	8
K-Electric	13	8	10	54	43

TABLE 21

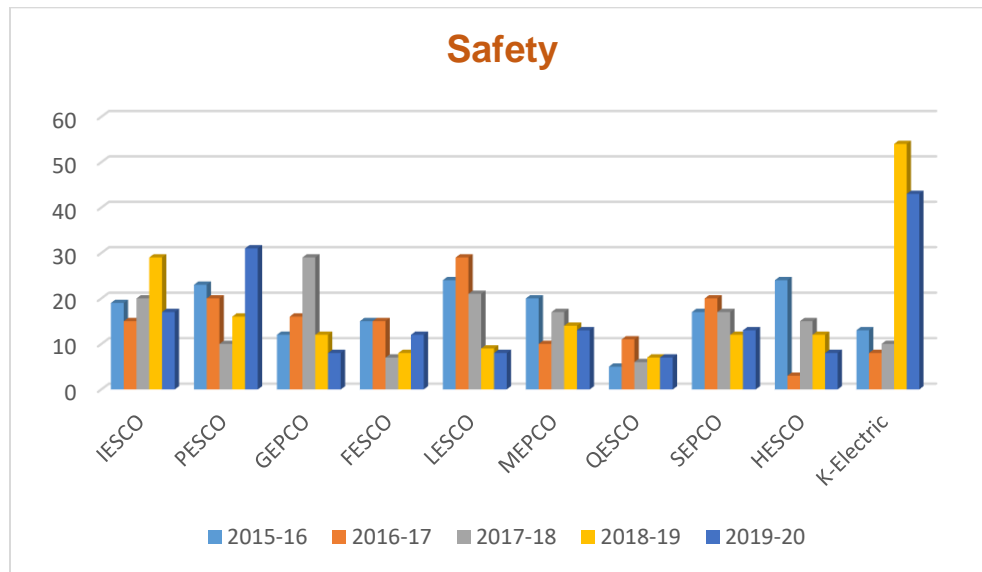


FIGURE 20

It is noted that the number of fatal accidents in 2019-20 has been decreased as compared to 2018-19 from 175 to 160. But 160 itself an alarming and indicates that distribution companies have failed to adhere the safety practices and K-Electric is on top in this regard followed by PESCO and IESCO. DISCOs has to give importance to every single human life and keep safety in their top priority.

### 3.10 Fault Rate (No. of Faults/km):

Name of DISCO	2015-16	2016-17	2017-18	2018-19	2019-20
IESCO	7.2	1.41	8.52	12.09	11.34
PESCO	0.93	0.86	0.45	0.574	0.40
GEPCO	2.97	3.04	3.04	3.327	3.49
FESCO	1.99	1.64	1.11	1.247	1.38
LESCO	10.48	2.99	5.91	6.08	5.58
MEPCO	3.35	4.06	5.82	6.67	60.60
QESCO	0.53	0.49	0.48	0.782	1.01
SEPCO	1.58	3.12	2.49	1.89	1.55
HESCO	0.89	1.696	0.84	0.998	0.96
K-Electric	1.39	0.95	0.85	1.31	1.34

TABLE 22

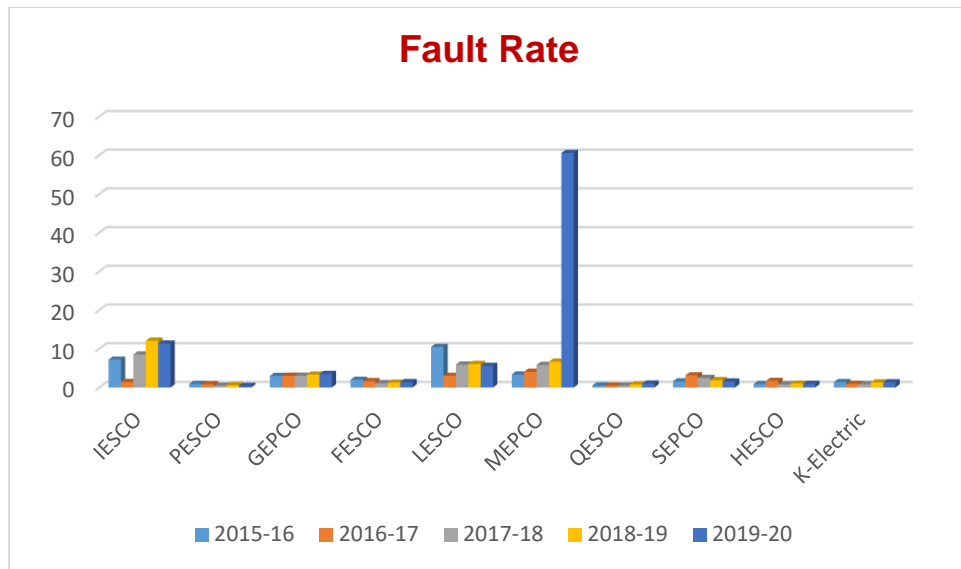


FIGURE 21

While reviewing the data pertaining to Fault Rate for the last five years, it is observed that the neither the results of this parameter are uniform nor showing the gradual improvement. Further, the comparison of data for the FY 2019-20 with the FY 2018-19 indicates that only PESCO, LESCO, SEPCO and HESCO have improved its fault rate whereas, remaining all distribution companies failed to do the same.