

PERFORMANCE EVALUATION REPORT OF DISCOS & K-ELECTRIC 2015-16

**In Comparison with
2011-12, 2012-13, 2013-14 and
2014-15**



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EXECUTIVE SUMMARY

Under Performance Standards (Distribution) Rules (PSDR) 2005, each distribution company is required to submit to NEPRA an Annual Performance Report (APR) in the format as prescribed in the PSDR 2005. The APRs for the year 2015-16, submitted by the distribution licensees, were reviewed on the basis of parameters namely, transmission and distribution 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.

It is noted with concern that FY 2015-16 also did not witness any major improvement in the performance of distribution companies (XWAPDA DISCOs and K-Electric) under the Performance Standards (Distribution) Rules (PSDR) 2005. Similarly, the issue of data correctness as reported in previous Performance Evaluation Reports (PERs), remained there. Although, NEPRA has already initiated strict action against such fake reporting by the distribution companies and is trying to bring them within the frame of compliance of Performance Standards based on facts.

Due to the issue of data accuracy, this year also NEPRA has only considered four parameters for the performance ranking of the DISCOs & K-Electric i.e. T&D Losses, Recovery, Time Frame for New Connections and Safety. It is worth mentioning that performance ranking is carried out based on the data submitted by the DISCOs & K-Electric and marks are awarded by considering the compliance level in respect of set standards and NEPRA's targets. Based on the results, IESCO has secured the top slot, followed by GEPCO and then MEPCO. The detail is covered in the chapter of performance ranking included in this Performance Evaluation Report.

During analysis of the data submitted by DISCOs & K-Electric for the year 2015-16, following major observations have been noted:

T&D Losses & Recovery: It has been noted with serious concern that DISCOs and K-Electric contributed around **Rs. 49 billion** and **Rs. 83 billion** loss respectively to national exchequer in 2015-16 due to their inefficiency with respect to T&D losses and recovery targets. The reported figures of T&D losses indicate that except IESCO, none of the DISCO could meet the regulator's expectations. On the other hand, SEPCO has shown the worst performance among all DISCOs in this regard. As far as recovery is concerned, FESCO has achieved 100% target while IESCO, GEPCO, LESCO and MEPCO have also reported more than 99% recoveries. It is worth mentioning that QESCO has improved its recovery from 32.6 percent to 71.6 percent in 2015-16 as compared to 2014-15.

Time Frame for New Connection: While reviewing the data pertaining to the percentage of consumers who were not provided new connections in 2015-16 within the time frame as prescribed in PSDR 2005, it was observed that IESCO & HESCO are faring better and have shown zero pendency of new connections. Further, PESCO, SEPCO and K-Electric have also provided more than 95% of applied connections in 2015-16. However, QESCO's performance is worst in this regard.

Load Shedding: NEPRA has serious reservations over the authenticity of data regarding load shedding being carried out by DISCOs & K-Electric in their service territories. The data

provided by DISCOs & K-Electric shows that DISCOs & K-Electric shed the load from 1 to 4 hours daily which is far away from ground realities. Further, it is a matter of concern that DISCOs and K-Electric are not following the order of load shedding according to different categories of consumers as provided in PSDR 2005.

Consumer Complaints: As a regulator, NEPRA carefully watches the interests of consumers, therefore, DISCOs and K-Electric are being persistently advised to improve their complaint handling mechanism and provide relief to their consumers to the maximum. However, data submitted by DISCOs and K-Electric shows the contradictory situation as the reported figures of number of complaints are not based on factual positions.

Safety: It is also a matter of fact that the number of fatal accidents for employees and general public have reduced in 2015-16 as compared to 2014-15 due to the constant efforts of NEPRA in form of implementation of safety standards as prescribed in PSDR 2005. Although the reported figure i.e. **172** fatalities is still an alarming figure and NEPRA took serious actions and initiated legal proceedings. DISCOs and K-Electric will have to realize that their workplaces are still not fully safe for employees and general public and they will have to take immediate steps to remove all type of safety hazards so that electrical incidents can be avoided.

In spite of persistent directives and monitoring by the regulator, DISCOs and K-Electric did not show any noticeable performance in 2015-16 and continued in the businesses as usual especially in the areas of SAIFI, SAIDI, quality of supply (voltage & frequency), Load Shedding and consumer service complaints.

1. INTRODUCTION

As per rule 7 of Performance Standards (Distribution) Rules (PSDR) 2005¹, 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 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.

The report also includes a chapter on performance ranking of distribution companies including K-Electric.

¹ In exercise of the powers conferred by Section 46 of the Regulation of Generation, Transmission and Distribution of Electrical Power Act, 1997 (XL of 1997), read with Section 34 thereof, the National Electric Power Regulatory Authority, with the approval of the Federal Government made the Performance Standards (Distribution) Rules notified vide S.R.O.45(I)/2005 dated 11th January, 2005.

2. ANALYSIS OF DATA OF DISTRIBUTION COMPANIES - 2015-16

2.1 TRANSMISSION AND DISTRIBUTION (T&D) LOSSES (%):

The difference in the generated energy and distributed energy is known as transmission & distribution loss. Power system losses can be divided into two categories i.e. technical & non-technical losses. Technical losses are naturally occurring losses and consist mainly of power dissipation in electrical system components such as transmission/distribution lines and power transformers. Non-technical losses are caused by the actions external to the power system. The most probable causes of non-technical losses are electricity theft and non-payment by consumers.

Table 1 indicates the figures of T&D losses as reported by distribution companies and the targets set by NEPRA through their respective tariff determinations. The data provided by distribution companies for the year 2015-16 shows that except IESCO, all the DISCOs have breached the targets set by NEPRA. Performance of SEPCO is worse in this regard along with PESCO, K-Electric, QESCO and HESCO. On the other hand, GEPCO & FESCO have shown improvement and slightly missed the targets set by NEPRA.

Reduction of these losses is very critical for sound financial health of distribution companies.

Name of DISCO	Reported Figures (%)	Allowed In Tariff Determination (%)	Breach of Target (%)
IESCO	9.10	9.44	-0.34
PESCO	33.80	26.00	+7.80
GEPCO	10.58	9.98	+0.60
FESCO	10.20	9.50	+0.70
LESCO	13.90	11.75	+2.15
MEPCO	16.40	15.00	+1.40
QESCO	23.80	17.50	+6.30
SEPCO	37.72	27.50	+10.22
HESCO	26.50	20.50	+6.00
K-Electric	22.24	15.00	+7.24

Table 1

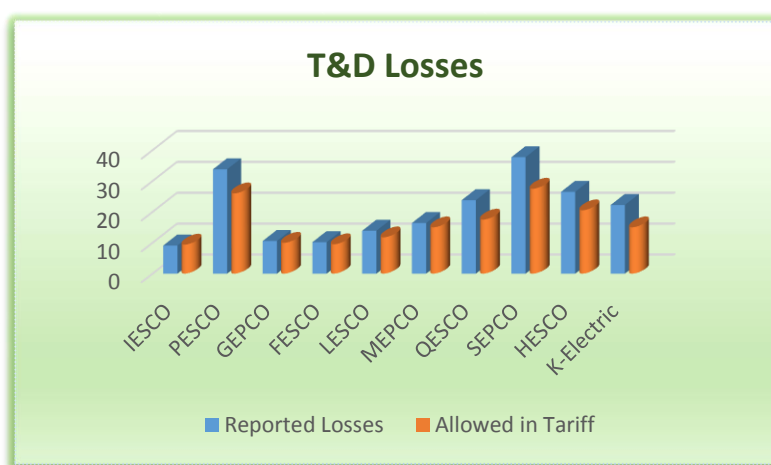


Figure 1

The main reasons of technical losses are lengthy distribution lines, inadequate size of conductors, installation of distribution transformers away from load centres, transformer sizing & selection and bad workmanship etc. due to which these companies have failed to achieve the targets. Since T&D losses remain a major concern of NEPRA, therefore, this parameter has been given a high importance in performance ranking of distribution companies.

2.1.1 Financial Impact due to breach of Losses Target:

As already mentioned that all distribution companies except IESCO, have breached the targets of losses given by NEPRA in tariff determinations, therefore, an impact of such breach has been calculated in financial terms. The same is indicated in Table 2 below:

Name of DISCO	Breach of Target (%)	Energy purchased by DISCOs from CPPA during 2015-16 (GWH)	Energy Lost (Million kWh)	Financial Loss (Million Rs.)
IESCO	-0.34	9650.42	(32.81)	(257.88)
PESCO	+7.80	11749.89	916.49	10,768.77
GEPCO	+0.60	9045.47	54.27	585.06
FESCO	+0.70	11920.36	83.44	656.69
LESCO	+2.15	20151.92	433.26	3,544.11
MEPCO	+1.40	14770.26	206.78	1,730.77
QESCO	+6.30	5546.65	349.43	4,284.12
SEPCO	+10.22	4196.76	428.90	4,949.60
HESCO	+6.00	5084.67	305.08	3,069.10
K-Electric	+7.24	16,515	1195.68	19,286.41
Total			3,973.33	48,616.75

Table 2

From Table 2, it is noted that national exchequer suffered a loss of more than **48 billion** rupees in 2015-16 due to the inefficiency of distribution companies. Such losses are playing vital role in creation of circular debt. Above financial impact is calculated by considering the average notified rate of each DISCO minus average fuel price adjustment for the year 2015-16.

2.2 RECOVERY (%):

Collection of bills is most important factor for sustaining increased supply of electricity. Increase in revenue can improve fiscal deficit and provide investable funds for the expansion of these public utilities. Recovery plays a key role in the financial health of distribution companies. Considering its importance, NEPRA has made this parameter an essential component of the Performance Ranking exercise of the DISCOs and DISCOs are encouraged to achieve the rate of 100% recovery.

Taking a closer look of Table 3, FESCO has maintained its recovery position and achieved 100% target which is considered as best performance among all DISCOs from recovery point of view. Further, IESCO, GEPCO, LESCO & MEPCO have also shown remarkable performance in this regard and achieved almost 100% recoveries. Rest of the DISCOs, however are lagging behind the target of 100% which will definitely impact their services to the consumers.

Particularly, QESCO and HESCO performed somehow poorly. SEPCO's performance is exceptionally bad in terms of recovery rates in 2015-16 which stands at 55%.

Name of DISCO	Actual Recovery	Target	Breach of Target
IESCO	99.30	100	- 0.7
PESCO	88.62	100	- 11.4
GEPCO	99.58	100	- 0.4
FESCO	100.06	100	+0.06
LESCO	99.65	100	- 0.35
MEPCO	99.99	100	- 0.01
QESCO	71.63	100	-28.4
SEPCO	55.18	100	- 44.8
HESCO	72.35	100	- 27.6
K-Electric	87.63	100	- 12.37

Table 3

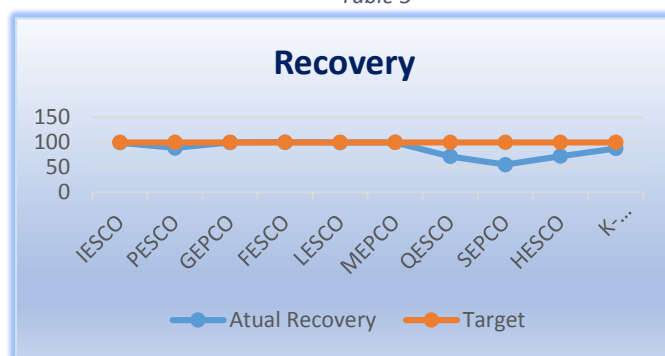


Figure 2

2.2.1 Financial Impact due to breach of Recovery targets:

Table 4 illustrates the loss of revenue which was not recovered by the DISCOs and KE due to their poor management. The loss to the national exchequer accumulates to more than **83 billion** rupees. It is also observed that FESCO is the only DISCO which did not incur loss under this head during the year 2015-16.

Name of DISCO	Billing (Million Rs.)	Collection (Million Rs.)	Loss (Million Rs.)
IESCO	113,522	112,760 (99.3%)	762
PESCO	91,534.69	81,118.77 (88.6%)	10,424.92
GEPCO	96,147	95,744 (99.6%)	403
FESCO	133,329.66	133,415.35 (100.06%)	(85.69)
LESCO	232,442	231,638 (99.65%)	804
MEPCO	141,677.32	141,662.53 (99.99%)	14.79
QESCO	55,339.4	39,640.7 (71.6%)	15,698.7
SEPCO	36,104.3	19,922.7 (55.2%)	16,181.6
HESCO	48,830.1	35,330.7 (72.4%)	13,499.4
K-Electric	209,686	183,767 (87.6%)	25,919
		Total	83,621.72

Table 4

2.3 SYSTEM AVERAGE INTERRUPTION FREQUENCY INDEX (SAIFI – No.):

Reliability of distribution systems is an important issue in power sector for both utilities and customers. Power distribution reliability is closely related to individual component reliability. The reliability is measured by certain indices and SAIFI is one of them. SAIFI is the average number of times that a customer experiences an outage during a year.

The data reported by the distribution companies related to SAIFI in 2015-16 is compared with the targets set by NEPRA based on their historic data of last five years. While comparing, it is observed that IESCO, PESCO, FESCO, LESCO and K-Electric have shown achievement in this regard. Whereas, GEPCO, MEPCO, QESCO, SEPCO and HESCO have not complied with the set targets.

On the other hand, it is concern that the data submitted by the distribution companies is not based on reality, which was verified by the NEPRA team during visits of different DISCOs. Further, the data itself indicates surprising results which are hard to believe. For example:

Name of DISCO	Reported Figures of SAIFI	Target set by NEPRA	Breach of Target
IESCO	0.03	13	0
PESCO	261.65	300.05	0
GEPCO	35.44	13	+ 22.44
FESCO	32.41	44.17	0
LESCO	45.79	50.0	0
MEPCO	203	168.60	+ 34.4
QESCO	107	105.28	+ 1.72
SEPCO	216.71	177.97	+ 38.74
HESCO	184	167.96	+ 16.04
K-Electric	20.52	20.75	0

Table 5

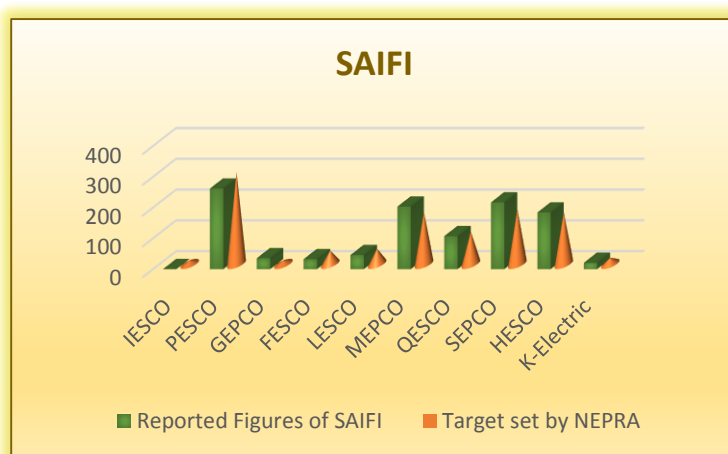


Figure 3

IESCO reported its SAIFI as 0.03, this means that an individual customer of IESCO experienced 0.03 interruption averagely during the year 2015-16 which is totally incorrect. Similarly, K-Electric submitted the figure of SAIFI as 20.52, this means that a consumer of K-Electric faced average 20 outages in 2015-16 due to KE's own faults which is also beyond factual position. Keeping in view the data constraints, NEPRA has excluded this parameter from the exercise of Performance Ranking of DISCOs and KE.

2.4 SYSTEM AVERAGE INTERRUPTION DURATION INDEX (SAIDI - Minutes):

This index indicates the average time a customer has an interruption during the period of one year. It usually specifies in customer minutes. It is determined by dividing the sum of all customer interruption durations during a year by the total number of consumers served.

NEPRA also set the targets of SAIDI for the year 2015-16 based on the historic data of distribution companies for last five years. Table 6 indicates the analysis between reported figures of SAIDI in 2015-16 viz-a-viz set targets of 2015-16 and subsequent breach of target. Except IESCO, PESCO and FESCO, all the other DISCOs have breached NEPRA's targets.

As already commented, the data submitted by distribution companies is not reliable and therefore, this parameter has also not been considered for Performance Ranking of distribution companies.

Name of DISCO	Reported Figures of SAIDI	Target set by NEPRA	Breach of Target
IESCO	0.82	14	0
PESCO	24927.12	25270.5	0
GEPCO	59.49	14	+45.49
FESCO	1714	2129.6	0
LESCO	2926.29	2641	+285.3
MEPCO	17592	14113.7	+3478.3
QESCO	7290	6341.9	+948
SEPCO	1879.31	1589.02	+290.3
HESCO	12623	9171.6	+3451.4
K-Electric	1210	1157	+53

Table 6

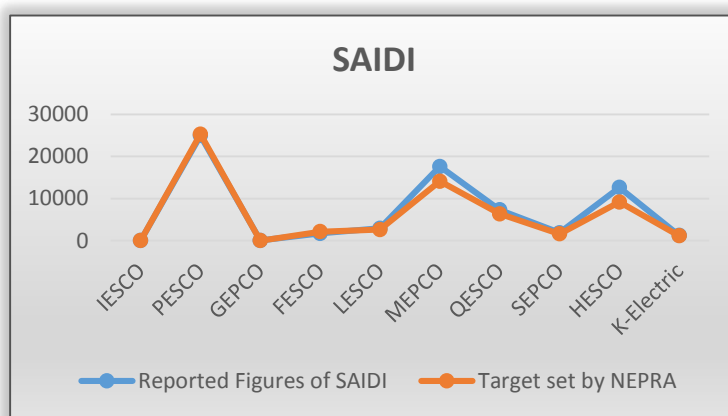


Figure 4

Notwithstanding that, IESCO has submitted that the average duration of each interruption faced by its consumers is 0.82 min (even less than 1) in 2015-16 which is far away from ground realities. Similarly, GEPCO has reported average 59 min duration of each interruption experienced by its consumers in 2015-16 which is also not based on reality.

Regarding submission of fudged data by the distribution companies, NEPRA took serious actions and initiated legal proceedings in form of Explanations and Show Cause Notices against the DISCOs. Authenticity of data is very important for making any decision in regulation of power sector. For this purpose, NEPRA regularly monitors/verify the data submitted by DISCOs & KE.

NEPRA being a regulator is of the view that the utilities should have their own reliability improvement strategy depending upon their needs and requirements. Utilities can maximize network performance and better serve customers by diligently addressing trouble prone areas. In order to achieve this objective, utilities have to apply some techniques such as system reconfiguration, feeder re-conductoring, bifurcation of lengthy lines, proper and regular maintenance activities and etc. by utilizing funds in an effective way because improving distribution reliability is the key to improving customer reliability.

2.5 TIME FRAME FOR NEW CONNECTIONS (%):

According to Rule 4 (c) of NEPRA Performance Standards (Distribution) Rules 2005, a distribution company shall provide electric power service to at least 95% of new connections to eligible consumers as specified in the Consumer Eligibility Criteria laid down by the Authority.

Table 7 illustrates the percentage of eligible consumers who were not provided connections within the time as prescribed in Performance Standards (Distribution) Rules 2005. Keeping in view the rule requirement as mentioned in column of target, it is observed that IESCO and HESCO have provided 100% connections to eligible consumers.

Name of DISCO	% age of eligible consumers who were not provided new connections	Target set by NEPRA	Breach of Target
IESCO	0	5	0
PESCO	3.6	5	0
GEPCO	8.6	5	+3.6
FESCO	19.8	5	+14.8
LESCO	9.95	5	+ 4.95
MEPCO	5.7	5	+ 0.7
QESCO	20.3	5	+15.3
SEPCO	1.26	5	0
HESCO	0	5	0
K-Electric	1.9	5	0

Table 7

Further, PESCO, SEPCO and K-Electric have also provided more than 95% of the applied connections in 2015-16. However, QESCO's performance is worse in this regard followed by FESCO, LESCO and GEPCO.

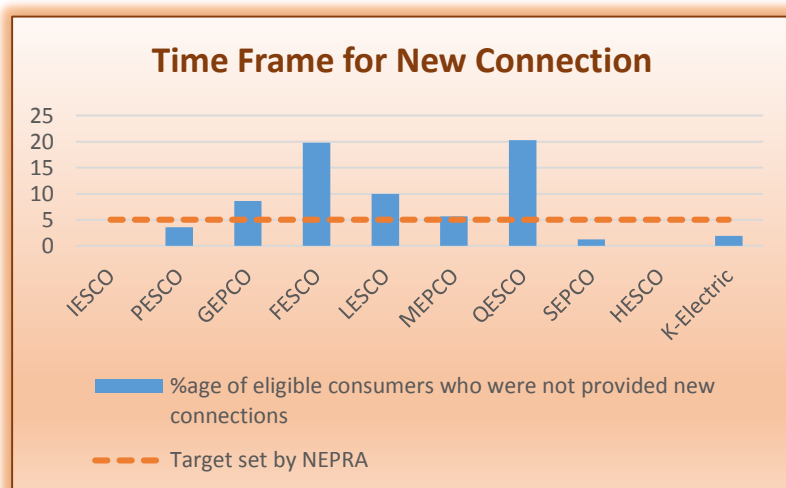


Figure 5

NEPRA has vigorously pursued the compliance of this parameter and directed the distribution companies to provide the reasons of non-provision of connections as per requirement of PSDR 2011 (amendment). In addition, NEPRA has also issued strict instructions to clear all pendency of ripe connections, failing which, matter shall be treated in accordance with law.

2.6 LOAD SHEDDING (HRS):

According to Rule 4 (f) of Performance Standards (Distribution) Rules 2005, 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, the 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 defence and strategic installations.

Name of DISCO	Reported Figures of Load Shedding (Hours)
IESCO	3.43
PESCO	2.3
GEPCO	4
FESCO	3.5
LESCO	1.67
MEPCO	3.2
QESCO	2.83
SEPCO	1
HESCO	3.33
K-Electric	1.33

Table 8

Table 8 illustrates the average duration of load shedding carried out by the DISCOs on daily basis in 2015-16. DISCOs and KE reported the figures of load shedding in the range of 1 to 4 hours which is contrary to the ground realities. For instance, SEPCO submitted only one hour load shedding in its territory in 2015-16 on daily basis.

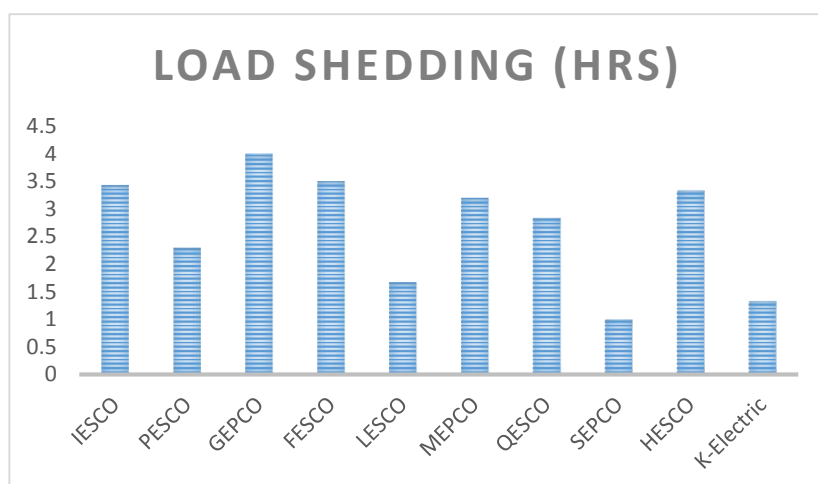


Figure 6

Similarly, K-Electric reported that it carried out averagely 1.33 hours load shedding on daily basis in Karachi, which is far away from factual position. NEPRA team, during visit of different distribution companies observed load shedding of 8 to 10 hours in urban and 10 to 12 hours in rural areas on certain feeders. Further, the load shedding criteria as announced by National Power Control Centre (NPCC) i.e. 6 hours in urban and 8 hours in rural is also not matched with the data as submitted by distribution companies.

In addition to above, it has been observed that distribution companies are not following the order of load shedding according to different categories of consumers as provided in PS DR 2005.

2.7 NOMINAL VOLTAGE:

Ideally, the best electrical supply would be a constant magnitude and frequency sinusoidal voltage waveforms. However, because of the large variety of loads and subsequent outages, the reality is often different. Possible consequences of poor power quality include unexpected power supply failures, equipment failure, equipment overheating, and increase of system loss etc.

According to Rule 4 (d) of PSDR 2005, a distribution company shall supply power to at least 95% of its consumers within the range of $\pm 5\%$ of the nominal voltage. Following are the nominal voltages for the distribution system:

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

Name of DISCO	No. of consumers who made complaints about voltage	Total no. of consumers in DISCO	% age of complainants w.r.t total no. of consumers	Allowed % in PSDR 2005
IESCO	6,508	2,513,206	0.3	5
PESCO	38,635	2,634,015	1.5	5
GEPCO	3,906	3,054,228	0.1	5
FESCO	10,488	3,587,565	0.3	5
LESCO	17,631	3,600,237	0.5	5
MEPCO	0	5,228,862	0	5
QESCO	4,273	568,826	0.8	5
SEPCO	0	720,120	0	5
HESCO	186	1,008,762	0.02	5
K-Electric	253	2,337,331	0.01	5

Table 9

Table 9 shows the analysis between percent of consumers who made complaints regarding variation in nominal voltages with respect to percent allowed in PSDR 2005. While analysing the data submitted by DISCOs & KE, it is noted that all distribution companies have provided the quality power supply to more than 95% of its consumers which is away from factual position.

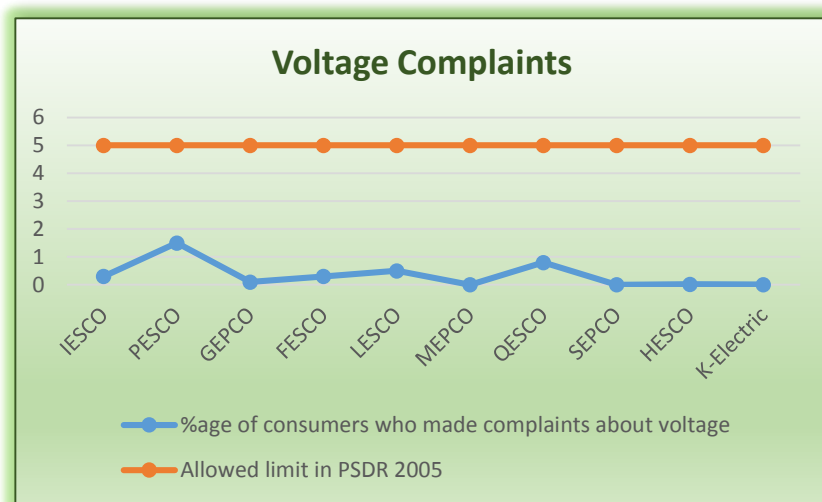


Figure 7

Even MEPCO and SEPCO have provided power supply with proper voltages to their 100% consumers which is far away from ground realities. NEPRA team during visits of different grid stations of DISCOs physically monitored the voltage levels and found them mostly below the permissible limits.

2.8 CONSUMER SERVICE COMPLAINTS:

<i>Name of DISCO</i>	Reported Figures of complaints	Total no. of complaint centres in DISCO	No. of complaints per complaint centre	Average number of complaints per day per complaint centre
<i>IESCO</i>	63831	124	515	1.4
<i>PESCO</i>	103983	174	597	1.6
<i>GEPCO</i>	826226	146	5659	15.5
<i>FESCO</i>	353019	376	938	2.5
<i>LESCO</i>	1548464	233	6645	18.2
<i>MEPCO</i>	73296	217	337	0.9
<i>QESCO</i>	5198	75	69	0.2
<i>SEPCO</i>	8516	78	109	0.3
<i>HESCO</i>	56602	88	643	1.7
<i>K-Electric</i>	481061	30	16035	43.9

Table 10

Table 10 contains the analysis of average number of complaints per day per complaint centre based on the reported figures of complaints by DISCOs and KE. Keeping in view the worked out results, it is commented that the data submitted by DISCOs and KE is not based on reality. Particularly in case of MEPCO, QESCO and SEPCO, these companies have received less than one complaint per day in whole year of 2015-16 in any of its complaint centre which is very surprising given the millions of consumers. Further, IESCO, PESCO, FESCO and HESCO have also reported 1 to 2 average number of complaints per day per complaint centre which is totally impractical.

It is important to mention here that NEPRA team visited a number of complaint centres in different DISCOs in 2016 and found average per day complaints around 20 to 30 in each of the visited complaint centres. Hence, it can be said that the data submitted by DISCOs is not based on facts.

Given the fact that the data regarding complaints is not based on factual position, therefore, NEPRA has excluded this parameter from the performance ranking exercise of DISCOs and KE. Distribution companies can improve their complaint handling mechanism by following the Performance Standards particularly Rule 5 (2) in letter & spirit.

2.9 SAFETY (No. of fatalities for both employees & general public):

In order to create a safety culture, it requires a team approach and proactive attitude to learn from indicators of unsafe conditions. There is no doubt that organizations with better safety culture are successful in preventing workplace accidents and injuries. Companies need to launch behaviour based safety programs largely focused on ensuring that everyone in the organization adhere to the best safety practices.

According to Rule 4 (g) of PSDR 2005, 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 members of public. In this regard, distribution utilities have submitted the information related to number of fatal accidents for both employees and general public for the year 2015-16 as per prescribed format (Form 9 of PSDR) 2005.

Name of DISCO	Reported Figures of Fatalities	Target
IESCO	19	0
PESCO	23	0
GEPCO	12	0
FESCO	15	0
LESCO	24	0
MEPCO	20	0
QESCO	5	0
SEPCO	17	0
HESCO	24	0
K-Electric	13	0
Total	172	

Table 11

While reviewing the data, it is observed that a total of One hundred and Seventy Two (172) fatalities took place in all distribution companies in 2015-16. Individually, it is noted that all have reported more than five number of fatal accidents except QESCO. The highest number of fatal accidents occurred in LESCO and HESCO.

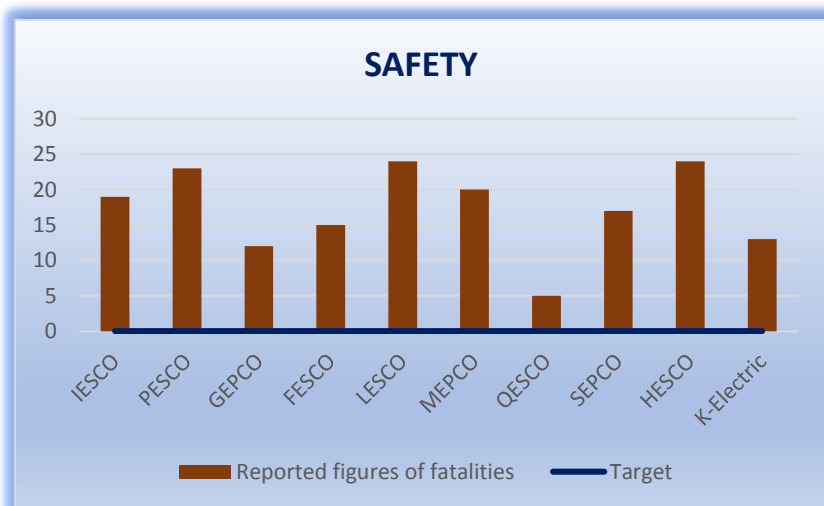


Figure 8

Above mentioned figures of fatal accidents in one year indicate an alarming situation and show that workplaces in distribution companies are not safe for employees and general public. Further, the number of fatal accidents illustrates that DISCOs & KE have been failed to implement Safety Standards as prescribed in Performance Standards and Distribution Code. NEPRA took serious notice and initiated legal proceedings and issued Show Cause Notices to all distribution companies due to non-compliance of safety standards. In this regard, hearings in the matter of show cause were also held and DISCOs have been warned in view of the commitments made by them to pay more attention and invest in the required resources, trainings and extended employee awareness programs to inculcate safety culture.

DISCOs and KE are required to conduct detailed survey and identify all points of safety hazards and take immediate steps to remove such safety hazards so that safety incidents can be avoided. NEPRA being a Regulator persistently advises the DISCOs & KE to develop safety culture and to ensure the protection of employees and as well as general public by implementing Performance Standards and Distribution Code.

2.10 FAULT RATE:

Fault Rate basically measures the system performance of distribution companies by keeping in view the number of faults with respect to length of distribution network. In this regard, the data submitted by DISCOs & KE has been reviewed and following analysis has been carried out as indicated in Table 12.

Table 12 illustrates the figures of fault rate derived from the data pertaining to number of faults and length of distribution network as submitted by DISCOs & KE for the year 2015-16. The reduction in number of faults with increasing length of distribution network actually demonstrates the health of system and degree of reliability of power supply.

<i>Name of DISCO</i>	Total length of distribution system (Km)	Total no. of faults	Fault Rate (No. of Faults/Km)
<i>IESCO</i>	54,524	392,496	7.2
<i>PESCO</i>	78,546	72,736	0.93
<i>GEPCO</i>	43,264	128,831	2.97
<i>FESCO</i>	69,237	138,265	1.99
<i>LESCO</i>	45,623	478,165	10.48
<i>MEPCO</i>	48,291	161,689	3.35
<i>QESCO</i>	56,105	29,869	0.53
<i>SEPCO</i>	37,236	59,001	1.58
<i>HESCO</i>	45,797	40,919	0.89
<i>K-Electric</i>	30,940	43,270	1.39

Table 12

It is pertinent to mention here that this parameter is directly linked with the improvement in reliability parameters i.e. SAIFI & SAIDI. In this regard, it has been observed that the DISCOs who have shown an improvement in SAIFI and have not improved fault rate reflects inconsistency of data.

For Example: GEPCO's number of interruptions due to its own faults have increased in 2015-16 as compared to 2014-15, whereas, GEPCO has shown reduction in number of faults in 2015-16 as compared to 2014-15, which is clear contradiction and technically not possible. Similar is the case for IESCO whose improvement in SAIFI is not in line with the system performance as the fault rate has drastically increased in 2015-16 as compared to 2014-15 i.e. from 2.62 to 7.2.

In view of above, it is commented that the data submitted by distribution companies is away from ground realities and therefore, this parameter has not been included in the exercise of Performance Ranking. Moreover, NEPRA has already taken serious notice of misrepresentation of data and initiated legal proceedings against distribution companies.

3. COMPARISON OF DATA FOR THE YEAR 2015-16 WITH LAST FOUR YEARS (2011-12, 2012-13, 2013-14 & 2014-15)

3.1 TRANSMISSION AND DISTRIBUTION (T&D) LOSSES (%):

DISCO/Years	2011-12	2012-13	2013-14	2014-15	2015-16
IESCO	9.52	9.40	9.46	9.41	9.10
PESCO	36.9	34.2	33.5	34.8	33.8
GEPCO	11.23	10.75	10.97	10.72	10.58
FESCO	10.8	10.8	11.3	11	10.2
LESCO	13.5	13.2	13.4	14.1	13.9
MEPCO	13	14.8	17.5	16.7	16.4
QESCO	20.9	22.7	28.3	24.4	23.8
SEPCO	-	39.51	38.56	38.29	37.72
HESCO	27.70	27.30	26.46	27.1	26.5
K-Electric	29.73	27.82	25.30	23.69	22.24

Table 13

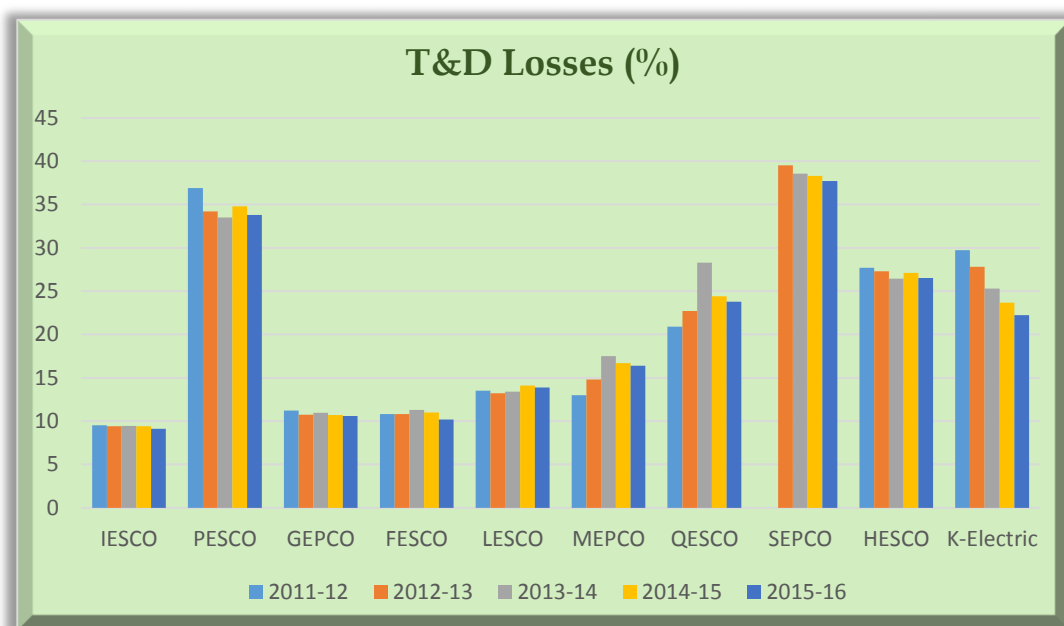


Figure 9

Table & Figure illustrate the reported figures of T&D losses of DISCOs & KE over the period of last of five years starting from 2011-12. Over the time, most of the DISCOs have made gradual improvement except LESCO, MEPCO & QESCO. Particularly, if the values of losses in 2015-16 are compared with the values of 2014-15, it has been observed that all have shown improvement. They can further be reduced by adopting the Automated Metering Infrastructure and can develop a reliable metering system.

3.2 RECOVERY (%):

	2011-12	2012-13	2013-14	2014-15	2015-16
<i>DISCO/Years</i>					
<i>IESCO</i>	96	94.4	120	99.8	99.3
<i>PESCO</i>	82.5	84.6	86.3	88.0	88.6
<i>GEPCO</i>	98.5	98.2	96	97	99.6
<i>FESCO</i>	99.76	99.06	100.05	100.06	100.06
<i>LESCO</i>	96.1	97.8	97.87	95.88	99.65
<i>MEPCO</i>	97.25	91.76	96.04	102.33	99.99
<i>QESCO</i>	36.2	31.8	42.2	32.6	71.6
<i>SEPCO</i>	-	53.63	58.60	57.81	55.2
<i>HESCO</i>	69.1	81.2	79.2	78.2	72.4
<i>K-Electric</i>	90.72	88.65	91.22	90.37	87.63

Table 14

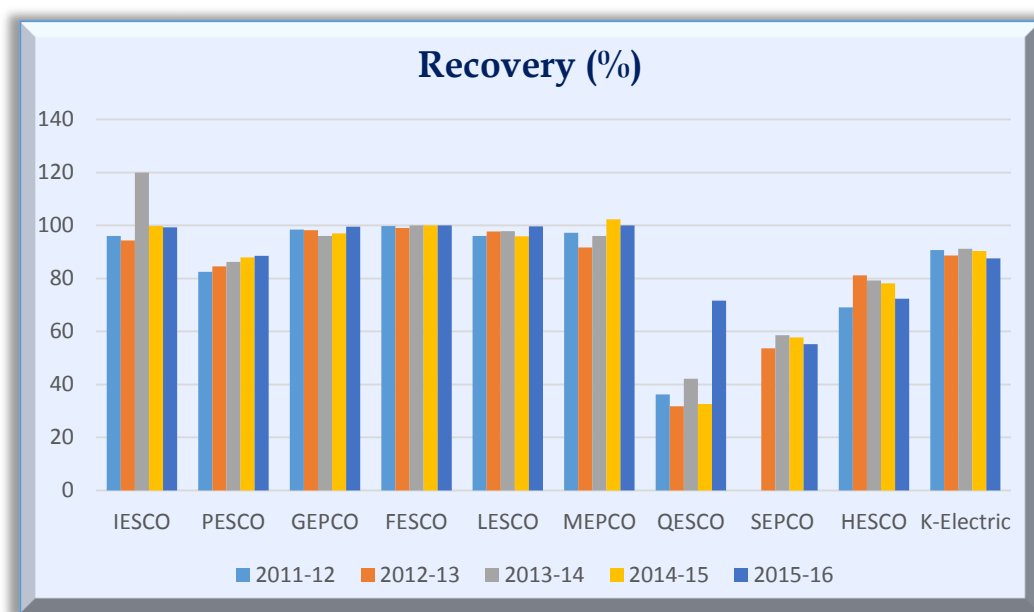


Figure 10

Above Table and Figure indicate the trend of recoveries over the last five years i.e. from 2011-12 to 2015-16. The trend shows the inconsistent recovery rates for some of the DISCOs. The worst performance has been shown by SEPCO in 2015-16 which consistently remains in the range of 50 to 60%. Apart from that, if the recoveries of 2015-16 are compared with 2014-15, it can be commented that all have improved except IESCO, SEPCO, HESCO & K-Electric. The different trends in recovery rates of DISCOs & KE over time actually demonstrates their poor efficiency. The same can be made consistent by applying good governance and management techniques.

3.3 SYSTEM AVERAGE INTERRUPTION FREQUENCY INDEX (SAIFI – No.):

<i>DISCO/Years</i>	2011-12	2012-13	2013-14	2014-15	2015-16
<i>IESCO</i>	0.60	0.62	0.05	0.036	0.03
<i>PESCO</i>	323.0	341.5	316.5	315.40	261.65
<i>GEPCO</i>	27.77	27.14	10.52	10.41	35.44
<i>FESCO</i>	59.40	56.80	35.40	46.54	32.41
<i>LESCO</i>	29.40	50.57	78.04	52.49	45.79
<i>MEPCO</i>	185.30	149.70	201.5	177.61	203
<i>QESCO</i>	156.08	153.80	144.95	112.58	107
<i>SEPCO</i>	341.4	4,177.7	251.5	227.96	216.71
<i>HESCO</i>	770.30	730.37	229.9	202.3	184
<i>K-Electric</i>	33	31.30	24.71	22.21	20.52

Table 15

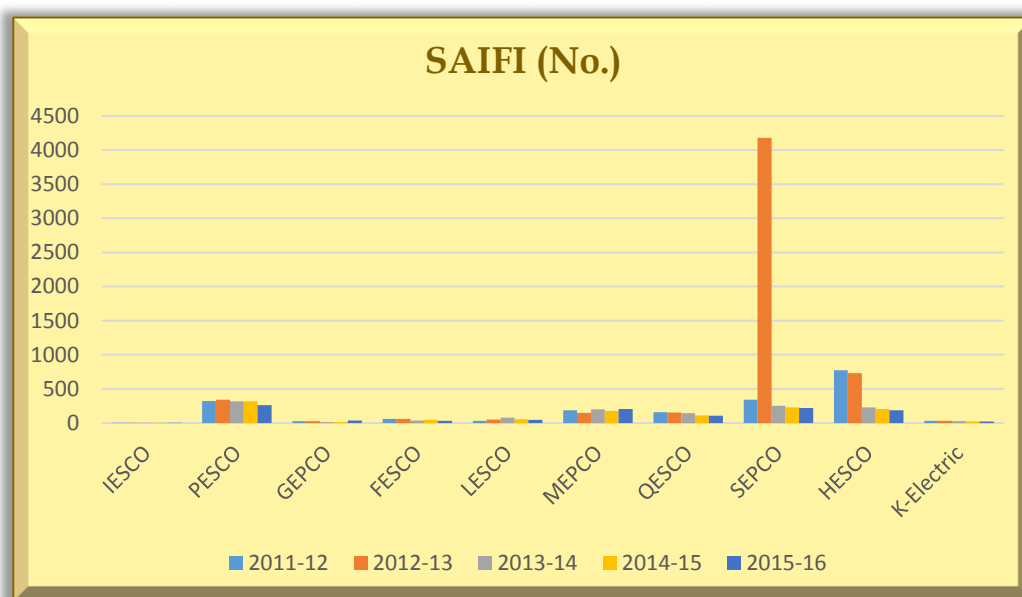


Figure 11

Before commenting on the aforementioned Table and Figure, it is clarified that the data pertaining to SAIFI is not based on realistic approach as the same was verified by the NEPRA professionals during monitoring of different DISCOs. Further, while comparing the data of SAIFI for the year 2015-16 with 2014-15, it has been noted that except GEPCO and MEPCO all other DISCOs and KE have shown reduction. This means that GEPCO and MEPCO failed to provide reliable power supply in 2015-16 as compared to 2014-15. Overall, the trend of last five years shows the inconsistency in data, which indicates that there is no proper mechanism to record the interruptions and to calculate the SAIFI.

3.4 SYSTEM AVERAGE INTERRUPTION DURATION INDEX (SAIDI - Minutes):

<i>DISCO/Years</i>	2011-12	2012-13	2013-14	2014-15	2015-16
<i>IESCO</i>	37.5	34.8	1.66	0.995	0.82
<i>PESCO</i>	28,189.0	29,570.0	27,946.6	27934.98	24927.12
<i>GEPCO</i>	291.6	263.2	13.14	13.20	59.49
<i>FESCO</i>	1321	1250	1137	2682.58	1714
<i>LESCO</i>	2,610.8	4,615.7	4,759.6	3010.29	2926.29
<i>MEPCO</i>	16 073.5	12813.9	17704.6	15677.65	17592
<i>QESCO</i>	12,810.7	12,635	11868.1	7506.81	7290
<i>SEPCO</i>	18,233	4,799.9	2442.73	2141.36	1879.31
<i>HESCO</i>	23,990.8	21,204.6	16,678.6	10642.7	12623
<i>K-Electric</i>	1858	1790.43	1495.25	1330.30	1210

Table 16

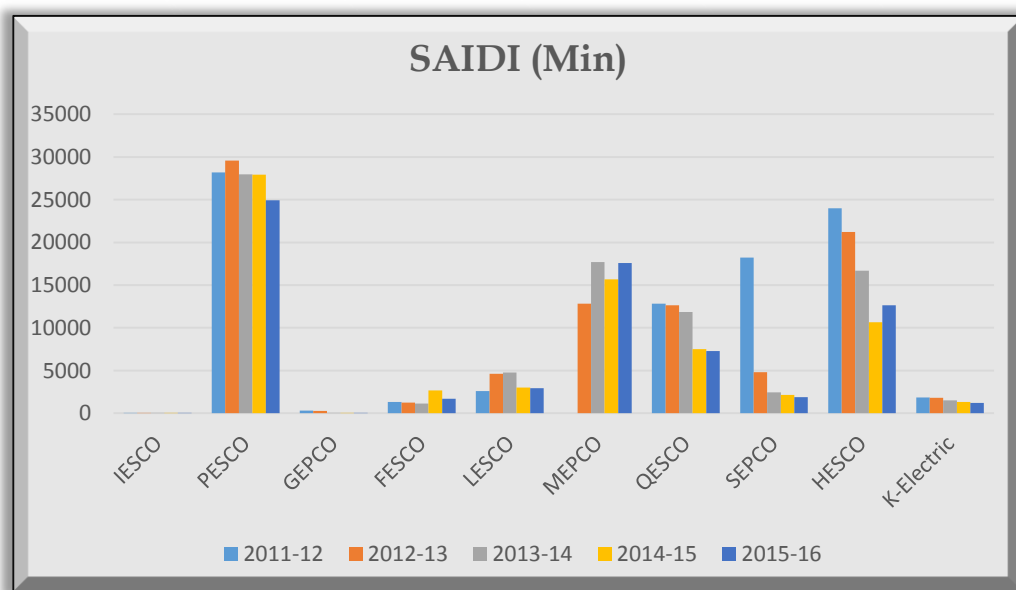


Figure 12

Similarly just like SAIFI, the data related to SAIDI is also away from ground facts and based on the huge variations.

The reliable power can be supplied to the end users by improving SAIFI & SAIDI, which is possible by regular maintenance of distribution system. Moreover, there is a sheer need of proper data base system regarding recording of interruptions and its duration.

3.5 TIME FRAME FOR NEW CONNECTIONS (%):

<i>DISCO/Years</i>	2011-12	2012-13	2013-14	2014-15	2015-16
<i>IESCO</i>	5.5	14.7	0	0	0
<i>PESCO</i>	22.00	22.00	9.57	3.2	3.6
<i>GEPCO</i>	8.50	10.60	15.24	8.60	8.6
<i>FESCO</i>	9.20	12.20	27.7	25.3	19.8
<i>LESCO</i>	14.60	14.60	13	5.24	9.95
<i>MEPCO</i>	32.30	16.50	15.8	9.15	5.7
<i>QESCO</i>	48.0	1.50	1.08	12.5	20.3
<i>SEPCO</i>	7.65	3.38	9.0	13.8	1.26
<i>HESCO</i>	0.07	0.05	11.86	3.3	0
<i>K-Electric</i>	34	40.7	13.2	4.8	1.9

Table 17

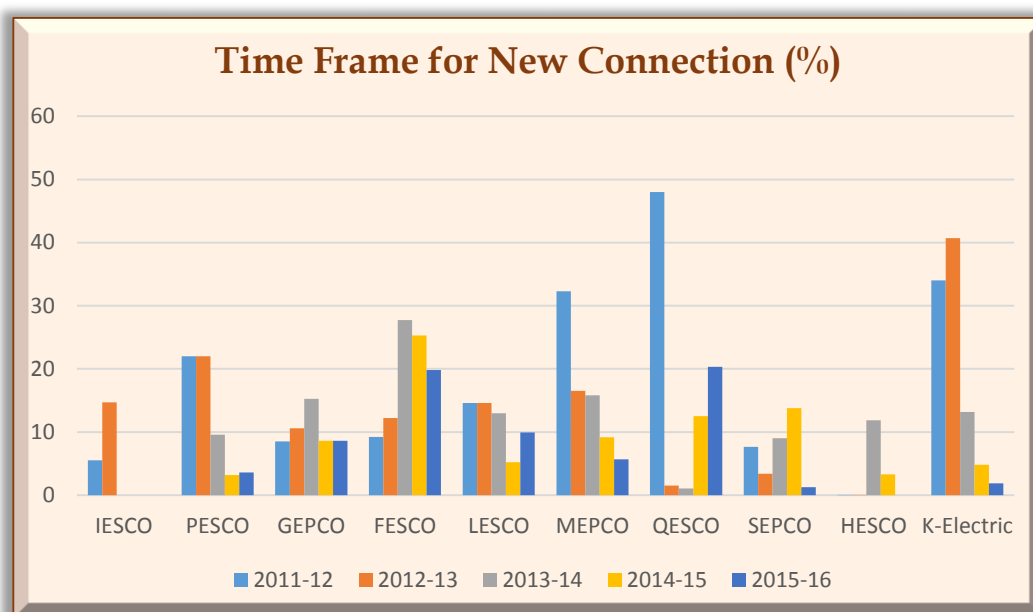


Figure 13

While reviewing the Table and Figure, it is observed that most of the DISCOs have shown consistent performance in last few years. Whereas, the percentage of eligible consumers who were not provided within prescribed time by QESCO has been drastically increased in 2015-16 as compared to 2014-15, 2013-14 and 2012-13. Further, GEPCO has not shown any improvement in 2015-16 as compared to 2014-15.

3.6 LOAD SHEDDING (HRS):

<i>DISCOs/Years</i>	2011-12	2012-13	2013-14	2014-15	2015-16
<i>IESCO</i>	5.6	5.6	5	4	3.43
<i>PESCO</i>	4.9	4.8	4.8	2.5	2.3
<i>GEPCO</i>	3.6	3.2	3.2	4	4
<i>FESCO</i>	7	7.8	7.25	4.33	3.5
<i>LESCO</i>	2.1	0.66	3.5	2.33	1.67
<i>MEPCO</i>	9	9	10	4.25	3.2
<i>QESCO</i>	10.5	11.13	10.5	3.4	2.83
<i>SEPCO</i>	4	2	2	1	1
<i>HESCO</i>	3.8	7.3	3.75	4	3.33
<i>K-Electric</i>	2	2.4	2.3	1.1	1.33

Table 18

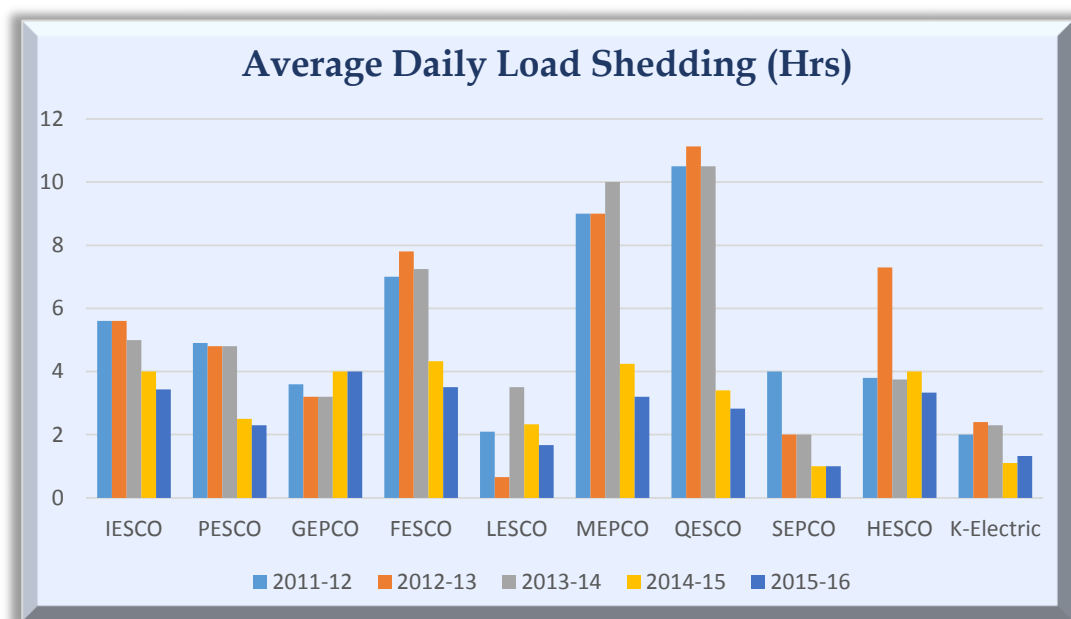


Figure 14

Table and Figure illustrate the data of average daily load shedding hours carried out by DISCOs and KE in last five years, but the data is far away from factual positions as being observed in media reports.

3.7 NOMINAL VOLTAGE:

DISCOs/Years	2011-12	2012-13	2013-14	2014-15	2015-16
IESCO	6,463	6,124	6,457	5,710	6,508
PESCO	36,272	37,932	43,787	37,704	38,635
GEPCO	2,867	3,048	3,325	3,744	3,906
FESCO	7,699	6,089	9,169	9,223	10,488
LESCO	9,312	8,922	25,504	8,363	17,631
MEPCO	0	0	0	0	0
QESCO	5,014	3,897	4,022	144	4,273
SEPCO	0	0	0	0	0
HESCO	1,585	1,496	1,743	681	186
K-Electric	17,419	15,498	19,408	258	253

Table 19

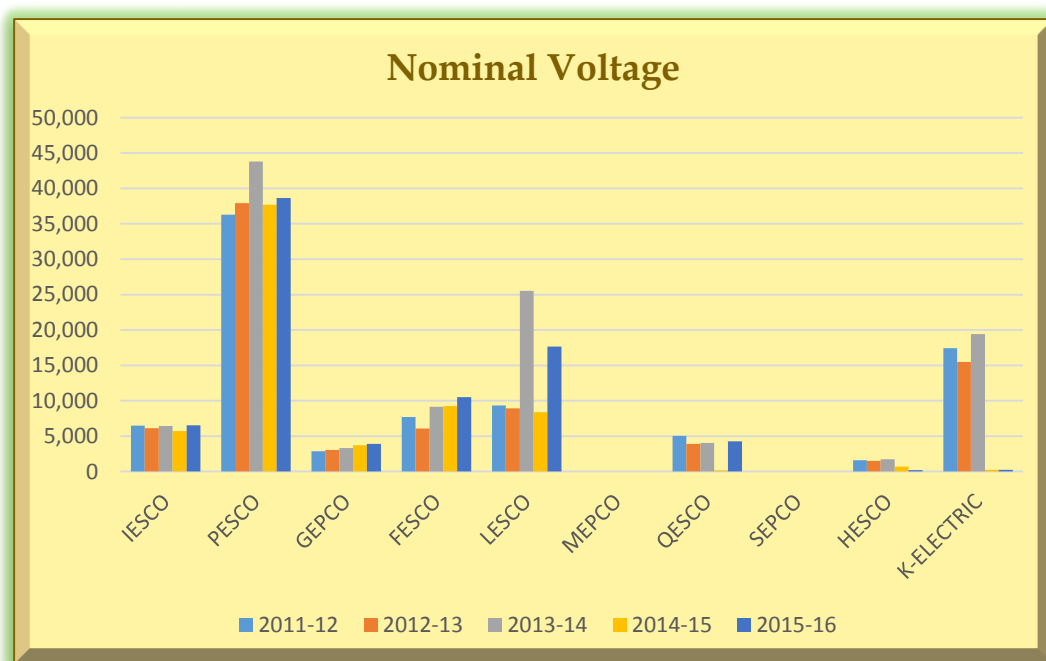


Figure 15

Table and Figure show the data regarding number of consumers who made complaints about voltage levels in FY 2015-16. However, the data seems unrealistic as the percentages of consumers who made complaints are very less as compared to the total consumers. The same was also verified by NEPRA team during their visits in different DISCOs and found that voltages are not provided within prescribed limits resulting in damage of home appliances.

3.8 CONSUMER SERVICE COMPLAINTS:

<i>DISCOs/Years</i>	2011-12	2012-13	2013-14	2014-15	2015-16
<i>IESCO</i>	55,214	63,712	66,739	62,167	63,831
<i>PESCO</i>	115,494	116,718	104,812	102,859	103,983
<i>GEPCO</i>	456,304	532,925	1,123,731	841,178	826,226
<i>FESCO</i>	303,013	236,850	248,241	392,399	353,019
<i>LESCO</i>	215,888	558,090	1,163,927	227,596	1,548,464
<i>MEPCO</i>	102,419	103,454	93,198	91,373	73,296
<i>QESCO</i>	65,647	65,640	50,811	41,952	5,198
<i>SEPCO</i>	8,659	8,813	12,051	8,857	8,516
<i>HESCO</i>	13,018	8,613	45,794	5,696	56,602
<i>K-Electric</i>	33,135	16,756	509,510	457,486	481,061

Table 20

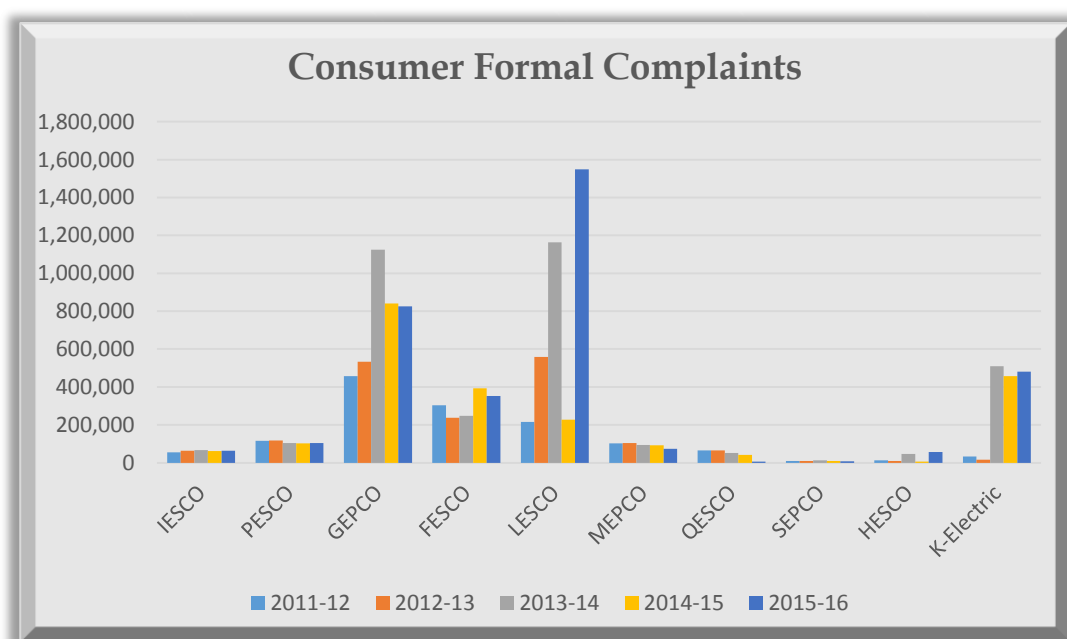


Figure 16

Table and Figure shows the number of complaints received by DISCOs and KE over the period of last five years through different modes. Overall, the mixed trend has been observed in form of increasing and decreasing trends. Further, IESCO, PESCO, QESCO and K-Electric received more number of complaints in 2015-16 as compared to 2014-15. The lower number of complaints and minimum time for disposed of the same are the actual indicators of customer satisfaction.

3.9 SAFETY:

<i>DISCOs/Years</i>	2011-12	2012-13	2013-14	2014-15	2015-16
<i>IESCO</i>	15	10	12	15	19
<i>PESCO</i>	25	25	20	29	23
<i>GEPCO</i>	11	10	12	15	12
<i>FESCO</i>	22	26	29	29	15
<i>LESCO</i>	29	14	35	24	24
<i>MEPCO</i>	14	12	17	34	20
<i>QESCO</i>	16	07	02	20	5
<i>SEPCO</i>	3	03	45	34	17
<i>HESCO</i>	26	07	14	22	24
<i>K-Electric</i>	14	09	05	04	13
<i>Total</i>	175	123	192	226	172

Table 21

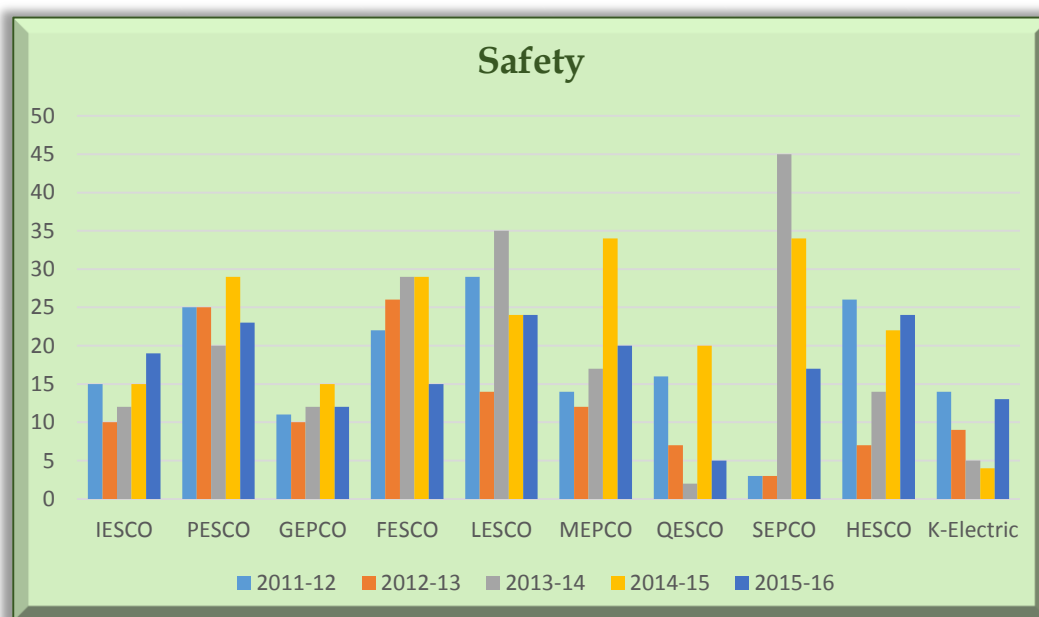


Figure 17

Although the total number of fatal accidents in 2015-16 has been reduced as compared to 2014-15 which is because of strict actions taken by NEPRA, still, 172 fatal accidents is an alarming number. Distribution companies shall have to realize that every human life is precious and accordingly, DISCOs are required to prioritize safety as of losses and recovery. Overall, the trend specifies an erratic performance by DISCOs and KE in this regard.

3.10 FAULT RATE:

DISCOs/Years	2011-12	2012-13	2013-14	2014-15	2015-16
IESCO	4.5	4.25	4.65	2.62	7.2
PESCO	0.88	0.88	0.88	0.78	0.93
GEPCO	9.09	21.59	21.58	3.12	2.97
FESCO	2.50	2.13	2.20	1.78	1.99
LESCO	8.0	2.28	50.6	7.79	10.48
MEPCO	2.46	2.11	2.81	2.72	3.35
QESCO	0.76	0.70	0.835	0.59	0.53
SEPCO	5.3	5.9	2.1	2.004	1.58
HESCO	1.7	1.4	1.92	0.78	0.89
K-Electric	2	1.95	1.96	1.546	1.39

Table 22

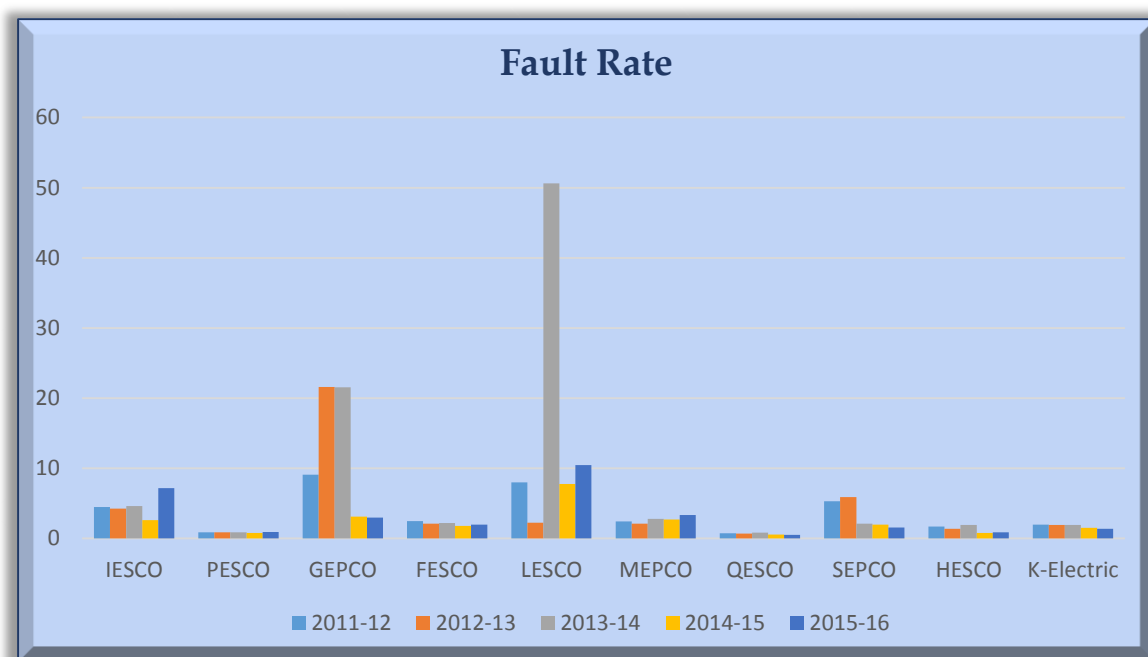


Figure 18

While comparing the data pertaining to Fault Rate for the year 2015-16 with 2014-15, it is observed that few DISCOs such as GEPCO, QESCO, SEPCO and K-Electric have shown reduction, whereas, the fault rate of other DISCOs has increased. Table and Figure elucidate the trend of last five years and found that the results of this parameter are not even, which means that the data submitted by DISCOs and KE is unworkable.

4. PERFORMANCE RANKING:

Performance Ranking is a process in which different companies in similar businesses are compared against each other to determine their individual performance rating. In this process, the companies are ranked from highest to lowest performance level.

One of the biggest advantage of performance ranking is that companies have the opportunity to meet and discuss the performance of top performers and raises the bar of their performance. Performance Ranking intensifies the environment for the companies to meet the targets set by the analyst. The basic purpose is to create competition among the companies so that they perform with commitment and motivation.



Figure 19

Accordingly, NEPRA being a Regulator has carried out an exercise of Performance Ranking of distribution companies (IESCO, PESCO, GEPCO, FESCO, LESCO, MEPCO, QESCO, SEPCO, HESCO & K-Electric) based on the data submitted by them through their annual performance reports for the year 2015-16. It is worth mentioning that this year (2015-16) also NEPRA considered only four parameters for the performance measurement i.e. T&D Losses, Recovery, New Connection and Safety due to the issue of data authenticity. In this regard, equal weightage has been given to the aforesaid four parameters. The detail is as under:

Sr. No.	Description of Parameters	Weightage
01	T&D Losses	25
02	Recovery	25
03	Time frame for new Connections	25
04	Safety	25
		100

Table 23

Considering the compliance level of aforementioned distribution companies in respect of above said parameters vis-à-vis NEPRA set targets, marks have been awarded to each company. Accordingly, the ratings of distribution companies turns out to be as under:

Due to exceptional performance especially in T&D Losses and New Connections, IESCO has secured 1st position. Whereas, GEPCO and MEPCO both acquired same marks, but both have been segregated on the basis of number of fatal accidents and awarded 2nd and 3rd position, respectively.

It is important to note that FESCO has sustained its recovery results and showed improvement towards losses, new connection & safety and has jumped one step ahead as compared to previous year and got 4th position. On the other hand, LESCO has stepped down and got 5th position due to decline in new connection and zero improvement in safety.

It may be noted that K-Electric, PESCO, HESCO, QESCO and SEPCO have remained on same positions as in 2014-15 i.e. 6th, 7th, 8th, 9th, and 10th respectively. Although, QESCO has obtained more marks as compared to 2014-15 due to drastic increase in recovery, even then, it stands at previous position. Unfortunately, SEPCO could not make significant improvement, hence, it stands last.

Name of DISCO	Marks	Rating/Position
IESCO	74	1 st
GEPCO	72	2 nd
MEPCO	72	3 rd
FESCO	71	4 th
LESCO	70	5 th
K-Electric	62	6 th
PESCO	62	7 th
HESCO	57	8 th
QESCO	52	9 th
SEPCO	39	10 th

Table 24

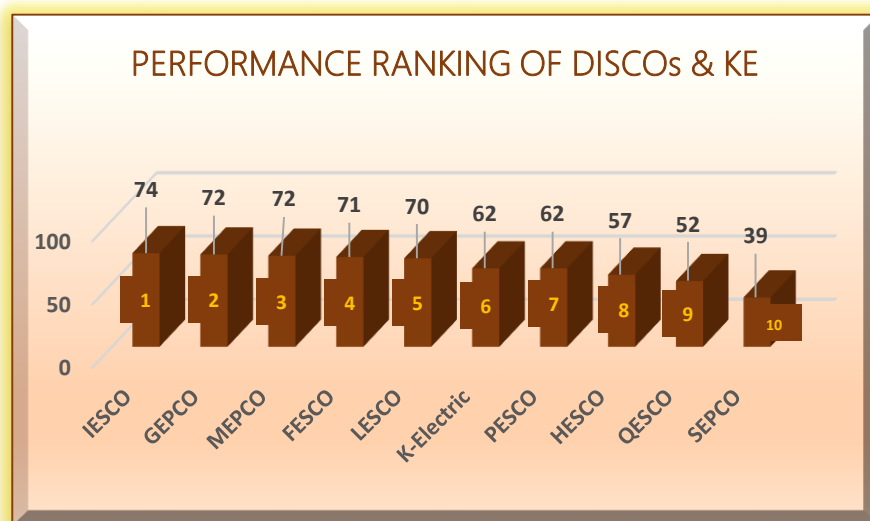


Figure 20

It is pertinent to mention here that DISCOs having same marks are assigned different positions by keeping in view the number of fatal accidents occurred in 2015-16. This shows that safety has been considered most important parameter by NEPRA as there is no alternate to human life.