NIGERIAN ELECTRICITY REGULATORY COMMISSION

A Viable Electricity Industry that Works

NERC QUARTERLY REPORTS

FOURTH QUARTER 2017

NIGERIAN ELECTRICTY REGULATORY COMMISSION
PLOT 1387| CADASTRAL ZONE A00| CENTRAL BUSINESS DISTRICT|
P.M.B. 136| GARKI| ABUJA
www.nerc.gov.ng

NERC quarterly report is designated for the dissemination of electricity supply information in Nigeria on current basis. The report analyses the state of the Nigerian electricity industry (covering both the operational and commercial performance), regulatory functions, consumer affairs as well as the Commission's finance and staff development. The report is directed at a wide spectrum of readers including energy economists, electrical engineers, financial and market analysts, potential investors, government institutions, the private sector as well as general readers.

Subscription of the NERC quarterly report is available without charge to the stakeholders of the Nigerian Electricity Supply Industry, government agencies and corporations. Individuals, on request, can obtain any particular issue without a charge. Please direct all inquiries, comments and suggestions on the report to

The Commissioner
Planning, Research and Strategy Division
Nigerian Electricity Regulatory Commission
Plot 1387 Cadastral Zone A00
Central Business District
P.M.B 136, Garki, Abuja
Nigeria
NERC website: www.nerc.gov.ng

Email: info@nerc.gov.ng

EDITORIAL

NERC quarterly report is prepared by the *Planning, Research and Strategy (PRS) Division* of the Commission headed by Dr Musiliu. O. Oseni (*Commissioner)* with supports from other divisions headed by Prof. James Momoh (*NERC Chairman, Office of the Chairman*), Engr. Sanusi Garba (*Vice Chairman & Commissioner, Market Competition & Rates*), Prof. Frank N. Okafor (*Commissioner, Engineering, Performance & Monitoring*), Nathan R. Shatti (*Commissioner, Finance & Management Services*), Dafe C. Akpeneye (*Commissioner, Legal, Licencing & Compliance*) and Dr Moses Arigu (*Commissioner, Consumer Affairs*).

The following are members of the PRS division as at April 2018:

A. Division staff

1. Dr Musiliu O. Oseni	Commissioner
2. Bassey Ayambem	Deputy General Manager
3. Chinedu Ukabiala	Deputy General Manager
4. Dr Abdussalam Yusuf	Assistant General Manager
5. Dr Chikwerem Obi	Assistant General Manager
6. Zubair B. Zubair	Principal Manager
7. Jonathan Okoronkwo	Principal Manager
8. Umar Muhammed	Principal Manager
9. Iko Bulus	Principal Manager
10. Rukaiyattu Sambo	Senior Manager
11. Chigozie Azikwe	Manager
12. Oluseye Akinboyewa	Assistant Manager
13. Fatima Abatemi Usman	Assistant Manager
14. Aniefiok N. Nyaknno	Analyst I
15. Elizabeth B. Adewale	Analyst III

B. Aides to the commissioner, PRS

16. Dr Ibrahim A. Tajudeen	Technical Assistant
17. Abdul-Azeez Abdul-Fatai	Junior Technical Assistant

CONTENT

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ADR	Alternative Dispute Resolution
AEDC	Abuja Electricity Distribution Company
ATC&C	Average Technical, Commercial & Collection Losses
BCR	Business Continuity Regulations
BEDC	Benin Electricity Distribution Company
BPE	Bureau of Public Enterprises
CAPEX	Capital Expenditure
CAPMI	Credited Advance Payment for Metering Implementation
CEB	Beninois Electricity Community
DisCos	Distribution Companies
DSOs	Distribution System Operators
EEDC	Enugu Electricity Distribution Company
EKEDC	Eko Electricity Distribution Company
EPSR	Electric Power Sector Reform
GWh	Gigawatts hour
IBEDC	Ibadan Electricity Distribution Company
IEDN	Independent Electricity Distribution Network
IKEDC	Ikeja Electricity Distribution Company
JEDC	Jos Electricity Distribution Company
KDEDC	Kaduna Electricity Distribution Company
KNEDC	Kano Electricity Distribution Company
MAP	Meter Assets Provider
MO	Market Operator
MW	Megawatts
MWh	Megawatts hour
MYTO	Multi Year Tariff Order
NBET	Nigerian Bulk Electricity Trading Plc
NERC	Nigerian Electricity Regulatory Commission
NESI	Nigerian Electricity Supply Industry
NICE	Notice of Intention to Commence Enforcement
NIGELEC	Nigerien Electricity Society
NIPP	National Integrated Power Project
PHEDC	Port Harcourt Electricity Distribution Company
REC	Regulation on Eligible Customers
TCN	Transmission Company of Nigeria
TLF	Transmission Loss Factor
YEDC	Yola Electricity Distribution Company

1. EXECUTIVE SUMMARY

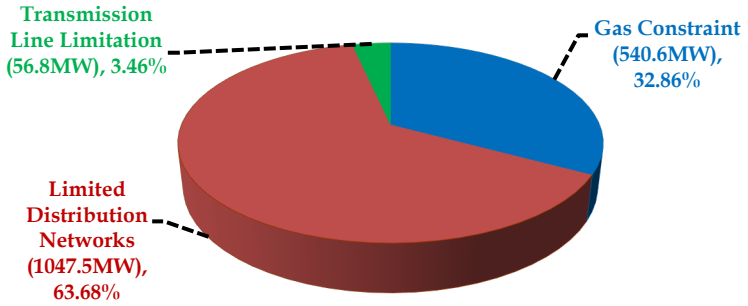
SUMMARY

STATE OF THE INDUSTRY:

Total electricity generated in 2017Q4 was 8,705,606MWh – 15% more than the generation in 2017Q3 and the highest quarterly generation in 2017.

Operational Performance: In line with NERC's mandates derived from the Electric Power Sector Reform Act (EPSR) 2005, the Commission continues to monitor the operational and commercial performances of the industry. During the fourth quarter of 2017, the total electricity generated stood at 8,705,606MWh. This was 15% more than the generation in the third quarter and the highest quarterly generation in 2017. The industry's peak daily generation of 5,222MW for 2017 was also recorded in the fourth quarter, specifically, on the 18th day of December 2017. Despite the increase in the peak generation in the fourth quarter, however, the average utilisation of the total available generation capacity estimated as 54.4% is relatively smaller than the first quarter estimate and was still constrained by a combination of factors. As indicated by Figure 1, limited distribution networks were the main constraint, others include inadequate gas supply and transmission line bottlenecks.

Figure 1: Stranded Capacity by Type of Constraints 2017Q4



Resolving these constraints remains as a top priority of the Commission. While the government has started the implementation of gas payment assurance facility to resolve the issue related to inadequate gas supply, the Commission has accordingly identified in its 2017-2020 Strategic Plan the actionable items towards addressing constraints in transmission and distribution networks. The planned strategy includes a thorough technical assessment of DisCos' utilisation of its capital expenditure allowances for relevance and cost efficiency and a tariff reset in order to stimulate investments in network infrastructure.

Only one (1) total- and three (3) partial-system collapses occurred in 2017Q4.

The remarkable stability of the grid network achieved in the third quarter was maintained in the fourth quarter. As in the third quarter of 2017, only one (1) total and three (3) partial system collapse occurred during the fourth quarter. The sustained stability in the grid is attributed to the continuous and tighter enforcement of the provisions of the grid code that mandate free governor control at grid-connected power plants, as well as increased investment in transmission network.

62.5% of the electricity billed to customers was recovered by DisCos but only 24.1% of the total invoice from NBET and MOs was settled by DisCos in 2017Q4.

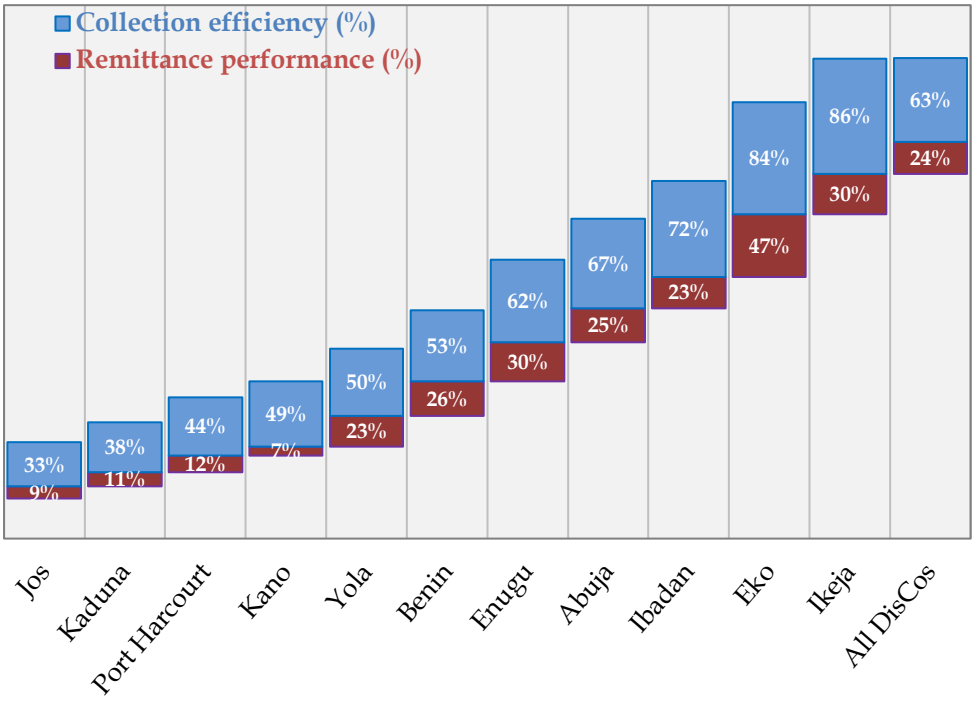
Commercial Performance: The financial liquidity remains as the most significant challenge affecting the sustainability of the industry. The major contributors to the financial crisis in the industry are tariff deficits, high technical and commercial losses exacerbated by consumers' apathy arising from estimated billing and poor quality of supply in most load centres. Out of the ₦161.8billion billed to customers in the fourth quarter, only ₦101.2billion was recovered. This implies that out of every ₦10 worth of electricity sold during the last quarter, ₦3.75 is uncollected. The liquidity challenge in NESI was further reflected in the DisCos' remittances to NBET and MOs relative to invoice received. In the last quarter of 2017, whereas DisCos were issued a total invoice of ₦166.2billion for energy received from NBET and for the service charge by MOs, only ₦40.1billion was settled by DisCos, creating a shortfall of ₦126.1billion.

None of the international and special customers made payments for the energy received in 2017Q4.

During the fourth quarter of 2017, the total invoice issued to Ajaokuta Steel and environs (designated as special customers) and international customers (CEB/SAKETE and NIGELEC) stood at ₦0.3billion and ₦11.2billion respectively. However, no payment was received from these customers. The Commission understands that the government is not relenting in engaging her neighbouring countries to ensure the payments for the electricity purchased by the international customers.

While the low remittance by DisCos to NBET and MOs are partly due to tariff deficit and low collection, on their part DisCos seem to keep more than their fair share from the funds. As indicated by Figure 2, the remittance performance of the individual and all DisCos are significantly lower than their collection efficiency.

Figure 2: Collection and Remittance (%) by DisCos in 2017Q4



A key initiative towards improving revenue collection in the electricity industry is the provision of meters to all end-use consumers of electricity. In this regard, the Commission continued the development of a regulation to address the metering gap in NESI in line with the Commission's metering target. On the other hand, to address the liquidity hitches, with particular emphasis on the poor remittance by DisCos, the Commission is finalising the framework, initiated in the third quarter, to ensure a fair and equitable distribution of market revenues. The framework aims at ensuring transparency in the utilisation of market fund.

REGULATORY FUNCTIONS:

Regulations and orders: Though no new regulation was issued, the Commission, during the fourth quarter, finalised a number of regulations initiated in the previous quarters. These include Meter Asset Providers (MAP), and Eligible Customers Regulations. To make orders more stringent so as to avoid illegal connection and energy theft in NESI, the Commission finalised the review of the extant Order on Illegal Connections, Meter by-Passing and Tampering.

2 new, 1renewed and 1extended licences with a total capacity of 507.5MW were issued in 2017Q4.

Licensing and Permits: During the 2017Q4, the Commission issued two (2) new licences with a total nameplate capacity of 457.5MW while renewal and extension were granted for one (1) licence each. Two permits were also issued for captive power generation with a total capacity of 62.5MW. In the same quarter, however, the Commission withdrew the licence issued to Trombay Power Generation Company (TPGC) Ltd to generate 500MW in Gombe State. This followed the submission of new application by TPGC Ltd and the Commission's evaluation of its financial capacity to execute the two projects.

Three (3) MSP applications were approved and 5 applications are under evaluation at the end of 2017Q4

After satisfactory evaluation, the Commission approved the certification of three (3) meter service providers – meter installation category. The Commission continued the technical evaluation of IEDN applications from Babcock consulting Limited, LADOL Integrated Logistics Services FZE, Eko Atlantic Utility, Ossiomo Off-sites and Utility Company, Hydro City Nigeria Limited and Otakikpo IEDN. Ariaria Market IEDN and Tadabo Electricity Distribution Company also submitted two new applications.

No new public consultations during the quarter

No new public consultations were made during the last quarter of 2017 but the Commission continued to work on the feedbacks received from the past public consultations on Review of MYTO Methodology, Meter Asset Providers (MAP) and the Business Continuity Regulations.

There were 21 (new and spill over) enforcement cases before the Commission in 2017Q4

Compliance and Enforcement: The Commission investigated and continued enforcement actions against violations, breaches and infractions recorded against a number of operators. These include violations of regulations, failure to provide required data within a timeline, accidents and electrocution cases. As at the end of the fourth quarter, there were 21 enforcement cases before the Commission. These include those existing enforcements commenced in the previous quarters in 2017. Upon completion of investigation and verification of claims, Notices of Intention to Commence Enforcement (NICE) were issued to some DisCos.

72 accident reports were received in 2017Q4. The accidents resulted in 15 deaths and 10 injuries of various degrees involving both employees of the companies and third parties.

Health and Safety: The Commission received a total of 72 accident reports from 29 licensees during the fourth quarter. The accidents resulted in 15 deaths and 10 injuries of various degrees involving both employees of the companies and third parties. In comparison, there was an improvement in the health and safety performance of the operators during the last quarter of 2017 relative to the third quarter. Nonetheless, the Commission will not relent in developing various safety programmes aiming at eliminating accidents in the industry. Among the safety programmes to be implemented by the Commission include but not limited to standardisation of Protective Schemes, public enlightenment on safety, engagement of Government agencies on Right of Way violation and a review of operational procedure for Distribution System Operators on fault clearing.

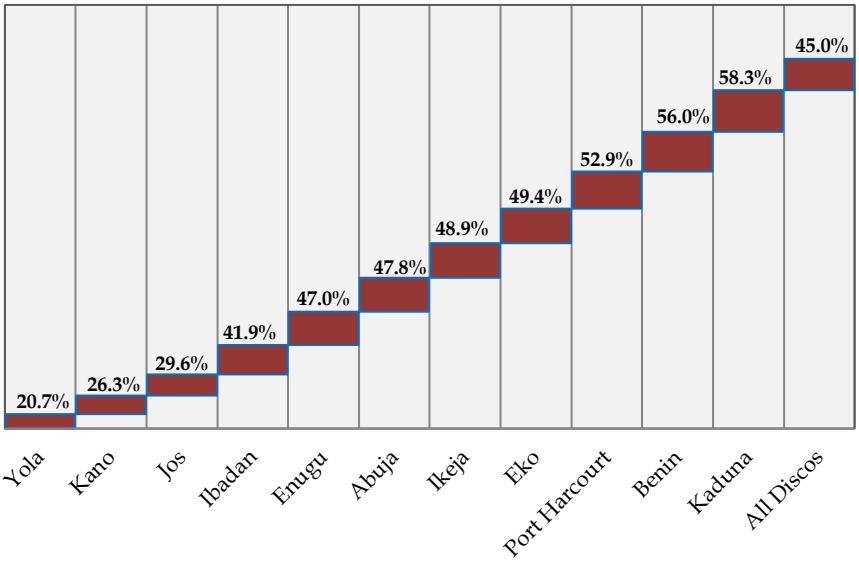
CONSUMER AFFAIRS:

Consumer Education & Enlightenment: The Commission directed all the 11 DisCos to organise town hall meetings and sensitisation programmes for their customers, and monitored the compliance accordingly. On its part also, the Commission hosted two Power Consumer Assembly in Lagos on the 22nd and 23rd of November 2017. The Commission redesigned the customer complaint flow chart and printed a few banners with the new flow chart, to replace the old ones displayed at strategic positions in the Commission's offices across the country. Recognising the role of the Commission's in consumer education, the Mac Arthur Foundation awarded the Commission a grant of US$0.6million to further strengthen its customer enlightenment programme.

Only 45% of the registered electricity customers have been metered as at 2017Q4.

Metering: Metering still remains a serious challenge facing the Nigerian Electricity Supply Industry. As indicated in Figure 3, out of the 7,947,121 registered electricity customers only 3,573,657 (about 45%) have been metered. Thus, majority of customers are on estimated billing. During the fourth quarter, DisCos installed just additional 122,460 meters. This incremental meter deployment by DisCos is significantly lower than the expected quarterly meters deployment of 410,103 as contained in their performance agreement with the Bureau of Public Enterprises (BPE).

Figure 3: Metering Status in NESI as at Dec. 2017



Only 3 DisCos had metered up to 50% of its registered electricity customers as at 2017Q4.

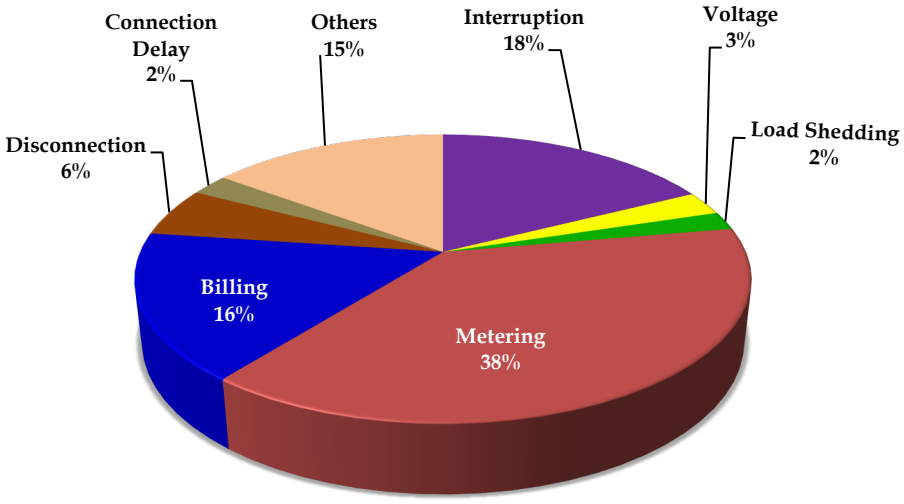
Specifically, only three DisCos (namely Kaduna, Benin and Port Harcourt) had metered up to 50% of their customers as at the end of the fourth quarter. The Commission is finalising regulations to fast-track meter roll-out in order to quickly close the metering gap which stood at 4,373,464 at the end of December 2017.

Customer Complaints: In 2017Q4, DisCos received a total of 131,669 complaints from consumers and resolved 77% of them. Benin and Yola DisCos had the highest and lowest number of complaints respectively. The complaints are typically on low voltage, service interruption, load shedding, disconnection, metering, billing, and delay in connection. As indicated in Figure 4 below, metering and billing dominated the customer complaints, both accounting for 72,314 (i.e., 54%) of the total complaints in the fourth quarter of 2017.

Metering and billing dominated the customer complaints - accounting for 54% of the total complaints received.

To reduce customers' complaints, the Commission continues to monitor the complaint handling and resolution process by DisCos. Furthermore, the Commission has, on a continuous basis, monitored the operation of its Forum Offices set up to adjudicate on consumers' complaints that are not adequately resolved to the customers' satisfaction by the customer care unit of the responsible DisCos.

Figure 4: Category of Complaints Received by DisCos in 2017Q4



Alternative Dispute Resolution: The Commission handled a total of four (new and existing) disputes between operators and customers within the last quarter of 2017. These include Greyfields vs. AEDC; Crown Estate, Lekki vs. EKEDC; VGC, Lekki vs. EKEDC; and Osun State Government, BEDC and IBEDC. Resolutions have been passed on some of the disputes while others are still on-going.

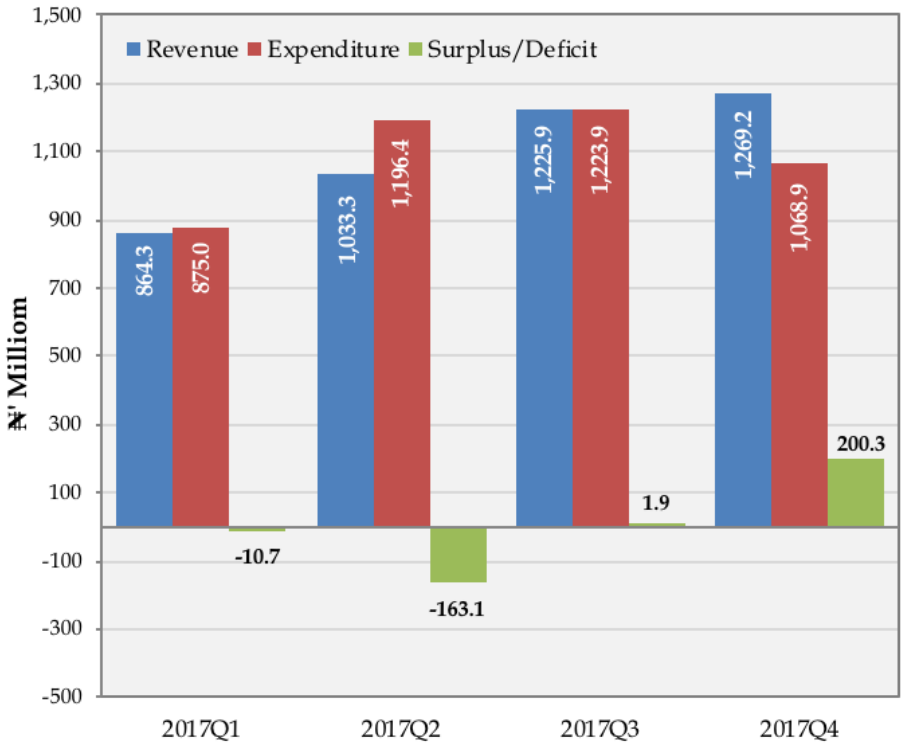
Litigation: The Commission had two (2) new cases of litigations in the last quarter of 2017 and continued with twelve (12) other cases earlier reported in the third quarter of the year which have remained unresolved.

The Commission:

Financial Report: In the fourth quarter of 2017, the revenue accrued to the Commission was ₦1.269billion comprising ₦1.083billion from operational levy (that is market charges) and ₦186.59million from other sources. The accrued revenue was about 3.5% higher than the revenue in the third quarter of 2017. The total expenditure of the Commission stood at ₦1.069billion in the fourth quarter against ₦1.223billion in the third quarter as indicated in Figure 5. A comparison of revenue and expenditure shows that the revenue accrued to the Commission in 2017Q4 was slightly higher than expenditure leaving a surplus of ₦200.30million. Nonetheless, the persistently low revenue generation continues to impact negatively on the Commission's ability to discharge its duties effectively, as some regulatory activities were postponed due to paucity of fund.

The accrued revenue to NERC was not enough to cover the expenditure during the quarter, creating a deficit of ₦1.758billion.

Figure 5: Commission's Revenue and Expenditure 2017Q4



Some members of staff were trained in 2017Q4 but promotion exercise was deferred to 2018Q1 due to paucity of funds.

Training and Promotion: The Commission takes training of its staff very seriously as the quality of personnel impacts significantly on its operation and success. During the last quarter of 2017, some members of staff were trained on the application of Uniform System of Account to Utility Regulation, and Utility Regulation and Strategic Management, among others. However, due to paucity of fund, the Commission deferred promotion exercise for eligible staff to the first quarter of 2018.

2. STATE OF THE INDUSTRY

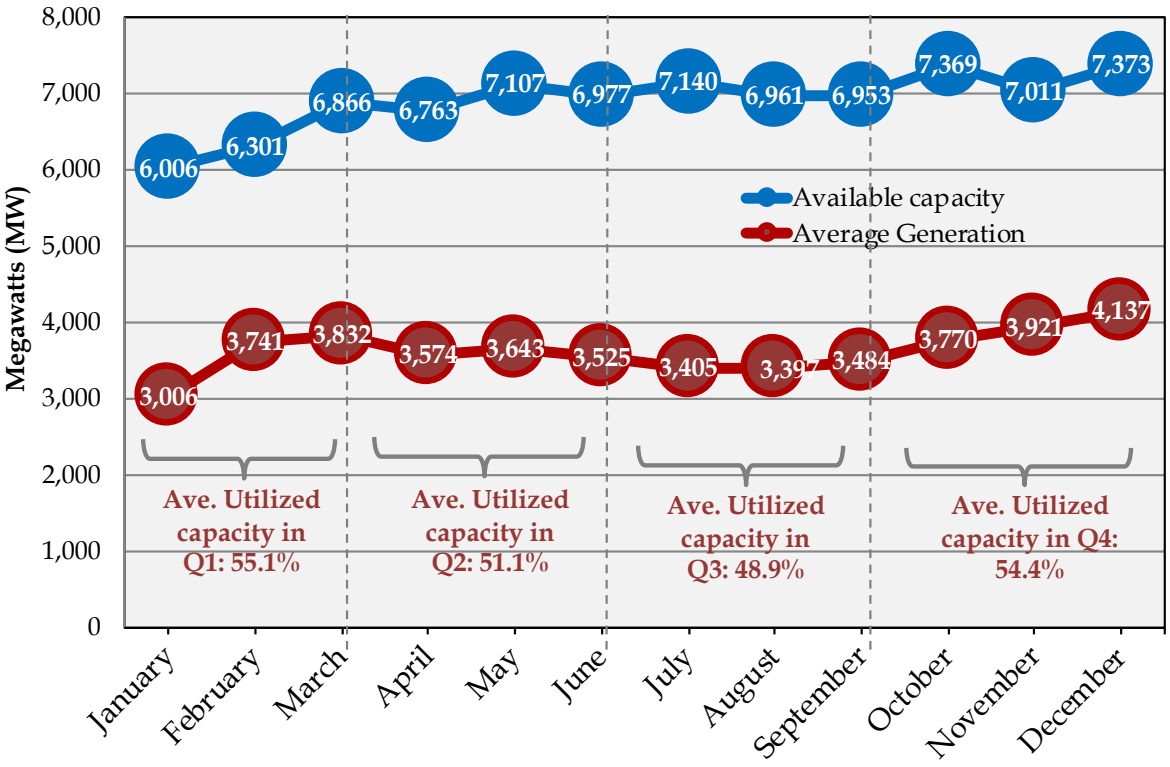
2.1. Operational Performance

2.1.1. Electricity Generation

The Commission continued to monitor the operational and commercial performance of its licensees in line with the mandate derived from the Electric Power Sector Reform (EPSR) Act 2005. During the last quarter of 2017, available generation capacity rose by 3.3% to 7,251MW relative to the third quarter of the same year. This increase in available capacity is attributable to increase in the number of available generation units during the fourth quarter. On average, while 76 plant generation units were available in the third quarter, 77 generation units were available during the fourth quarter. More importantly, the increase in the available capacity translated into increase in output. The total electricity generated during the fourth quarter increased by 15% from 7,568,493MWh recorded in the third quarter of 2017. The industry also recorded its highest peak daily generation of 5,222MW on the 18th day of December 2017.

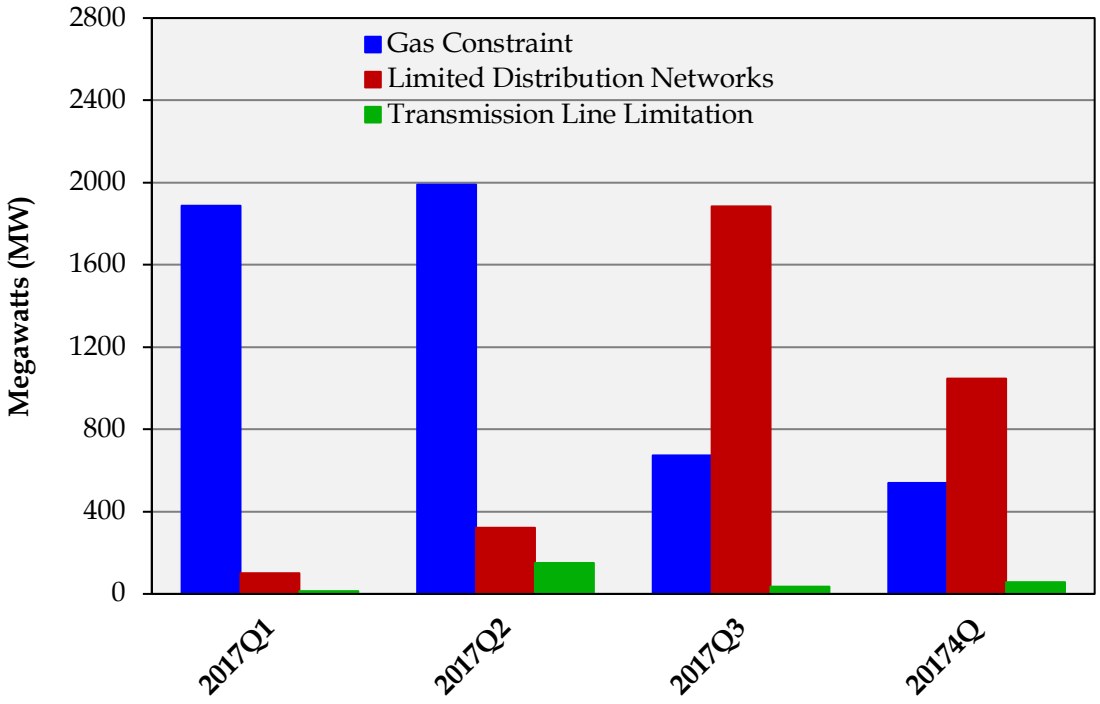
Figure 6 presents the daily average generation (MW) and available capacity (MW) from the first quarter (January-March) to the fourth quarter (October-December) of 2017. The Figure indicates that 54.4% of the available capacity was utilised during the fourth quarter. Although this is a significant improvement from 51.1% and 48.9% utilisation rates recorded during the second and third quarters of the same year, approximately 45.6% of the available capacity was also stranded during the fourth quarter due to a combination of inadequate gas supply, and limitation in transmission and distribution networks.

Figure 6: Average Daily Generation and Available Capacity in 2017



There was a noticeable improvement in gas supply during the quarter under review relative to the three preceding quarters of 2017. Specifically, according to Figure 7, the capacity constraints due to gas supply reduced to 541MW at the end of the fourth quarter from 1,888MW recorded during the first quarter. Nonetheless, the decline in electricity generation due to the gas constraint is still significant when compared to the transmission line limitations, which constitute just 57MW capacity constraint in the fourth quarter. The major constraint for power generation in the last quarter of 2017 is frequency instability resulting from the inability of DisCos to wheel energy due to limited distribution networks. Although a few progress was achieved in this area when compared to the third quarter, it remained the major constraint among the three factors highlighted.

Figure 7: Stranded Capacity (MW) by Type of Constraints in 2017



Resolving the generation constraints remains as a top priority for the Commission. While the Federal Government of Nigeria has commenced the implementation of payment assurance facility for power generators to resolve the issue related to inadequate gas supply, on its part the Commission is equally finalising plans to implement a number of actionable items identified in its 2017-2020 Strategic Plan towards addressing constraints related to transmission limitation and distribution networks. The planned strategy includes a thorough technical assessment of DisCos' utilisation of its capital expenditure allowances for relevance and cost efficiency and a tariff reset in order to stimulate investments in network infrastructure.

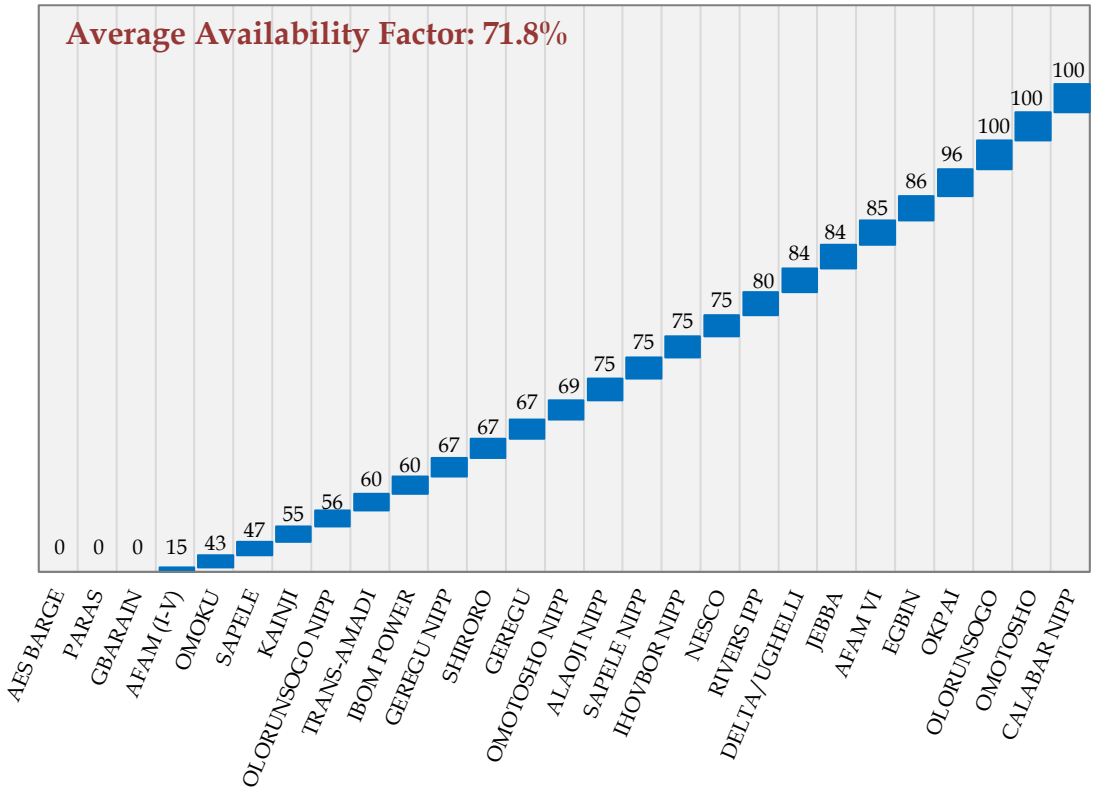
2.1.2. Availability Factor and Average Generation of Power Plants

The availability factor, defined as the number of hours that a power plant is able to produce electricity over a certain period relative to the number of hours in the period under consideration, recorded an increase of 4.8% in 2017Q4 from the 67% recorded in the third quarter. On average, generation plants were available 71.8%

of the time during the fourth quarter, indicating that the proportion of operational time that a plant actually operated progressed from the previous quarters, where availability factors were respectively 70%, 67% and 66% for the first, second and third quarters.

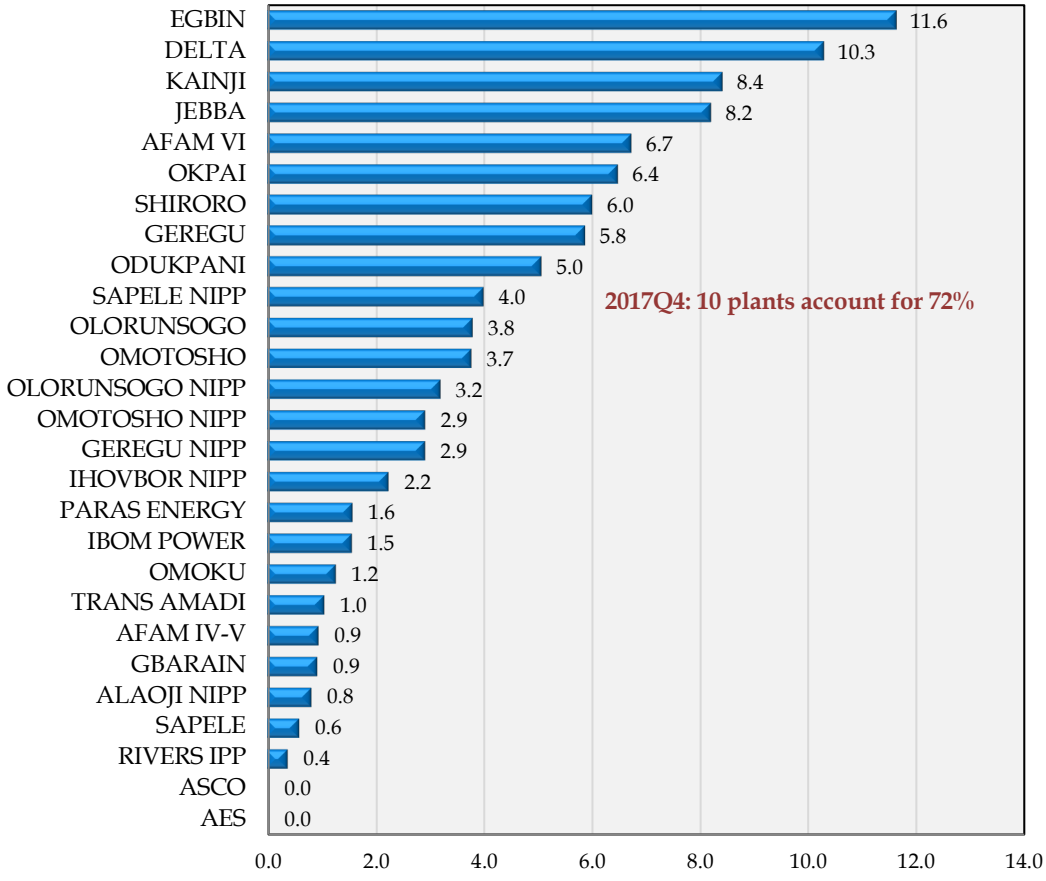
As shown in Figure 8, among the power plants in operation during the fourth quarter, Olorunsogo, Omotosho and Calabar National Integrated Power Project (NIPP) power plants had the highest availability factor of 100% while Afam I-V recorded the least availability factor of 15.2%. Three of the power plants (i.e., AES, Paras and Gbarain) were completely out of operation in the last quarter. Afam I-V and Geregu NIPP were out of operation for most of the period due to blade failure and burnt generator transformers while AES had been short down since 2016 due to several issues including high differential pressure at air inlet.

Figure 8: Plant Availability Factor (%) in 2017Q4



Furthermore, the analysis for the relative contribution of individual power plant to the total energy generated for the last quarter of 2017 is presented in Figure 9. Since AES and ASCO power plants are not available, both plants stations did not produce energy during this period. Of the 28 power plants, only 10 plants have a share of up to 3.9%. Although the estimated individual share has slightly dropped from the third quarter estimates (see Figure II of the appendix for comparison), the 10 plants altogether still accounted for 72% of the total energy generated. With this, the industry may be vulnerable to risk of electricity supply and, in particular, the exposure of the grid to the 10 major plants as downtime in any of them may destabilize the system if there are no adequate proactive measures such as adequate spinning reserves.

Figure 9: Share (%) of Output by Plants in 2017Q4

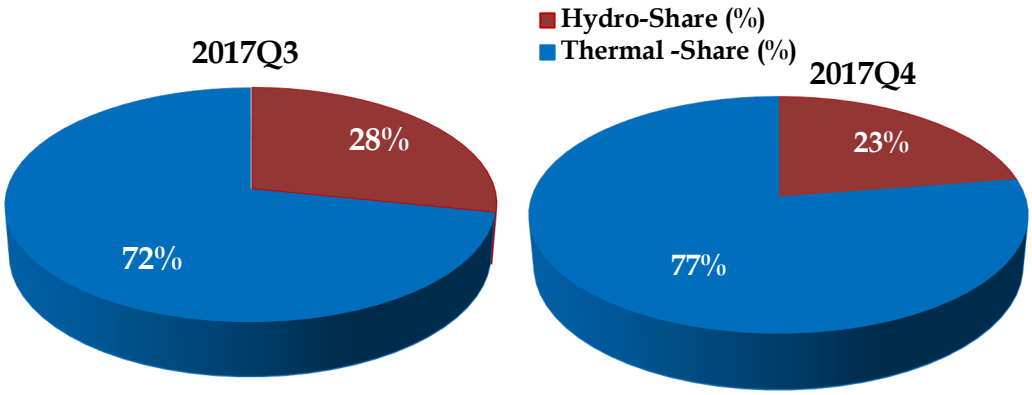


To prevent the risk of electricity supply and the exposure of the grid to the major plants, the Commission is determined to provide all regulatory intervention necessary to ensure that the Transmission Company Nigeria (TCN) procure sufficient spinning reserves. Specifically, the Commission is currently evaluating the adequacy of the already procured ancillary services (e.g., spinning reserves) by TCN in order to make sufficient provision during the next tariff review.

2.1.3. Sources of Generation

The share of electricity generation by sources of fuel for the third and the fourth quarter of 2017 are represented in Figure 10. Gas fired thermal plants dominated the electricity generation mix accounting for 77% of the energy generated in the fourth quarter – an increment of 5% from the 72% recorded in the third quarter. This implies that approximately 3.9kWh of every 5kWh of electricity generated in Nigeria in the last quarter of 2017 comes from gas fired plants. Noting that the recorded decline in electricity generated from hydropower plants between the third and fourth quarters might be due to seasonal factor, the Commission is concerned that the seemingly increase and over-dependence on gas fired thermal plants may pose supply risk for the country as vandalism of gas pipelines could result in total shutdown of the grid.

Figure 10: Share (%) of Electricity Generated by Fuel Sources in 2017Q3-Q4



To address the security of supply challenge, the Commission in collaboration with other players in the Nigerian Electricity Supply Industry is working to unfold regulatory guidance and propose policy support for the actualisation of coal–to–power generation and on-grid renewables.

2.1.4. Grid Performance

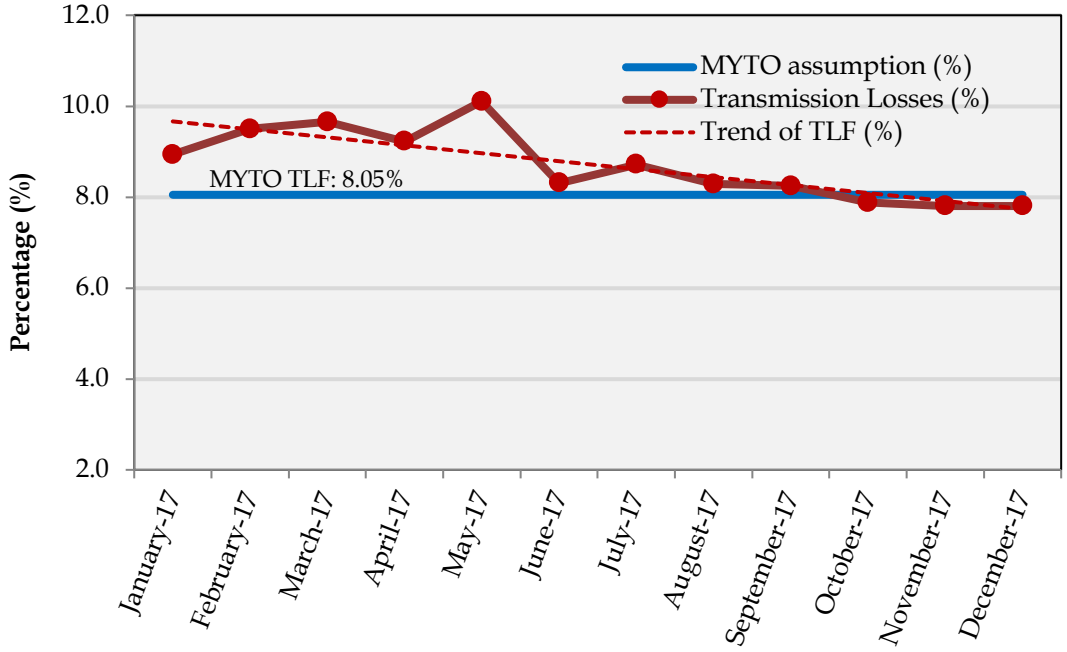
To assess the grid performance of the Nigerian Electricity Supply Industry, the Commission focuses on four key performance indicators that relate to power transmissions. These include the transmission loss factor, the frequency of system collapse, the grid frequency and the voltage fluctuation.

Transmission Loss Factor

There was a noticeable improvement in the transmission loss factor (i.e., the difference between the total energy sent out by power stations and energy received by all DisCos relative to the total energy sent out) during the period under review. Specifically, the transmission loss factor which was 8.94% in the first month of 2017 had reduced to 7.97% by December 2017.

As shown in Figure 11, the transmission loss factor maintained a downward trend in 2017. Moreover, during the last quarter of the year, i.e. 2017Q4, the average transmission loss factor was 0.17% less than the 8.05% industry (MYTO) acceptable loss factor, indicating a significant improvement in transmission network. This compares favourably to the first, second and third quarters of 2017 where the average transmission loss factors were 9.36%, 9.21% and 8.42% respectively. The remarkable reduction in the transmission losses may be attributed to the improved efficiency in transmission network arising from increased investment in network reinforcement and expansion by the Transmission Company of Nigeria (TCN).

Figure 11: Transmission Loss Factor from Jan. – Dec. 2017

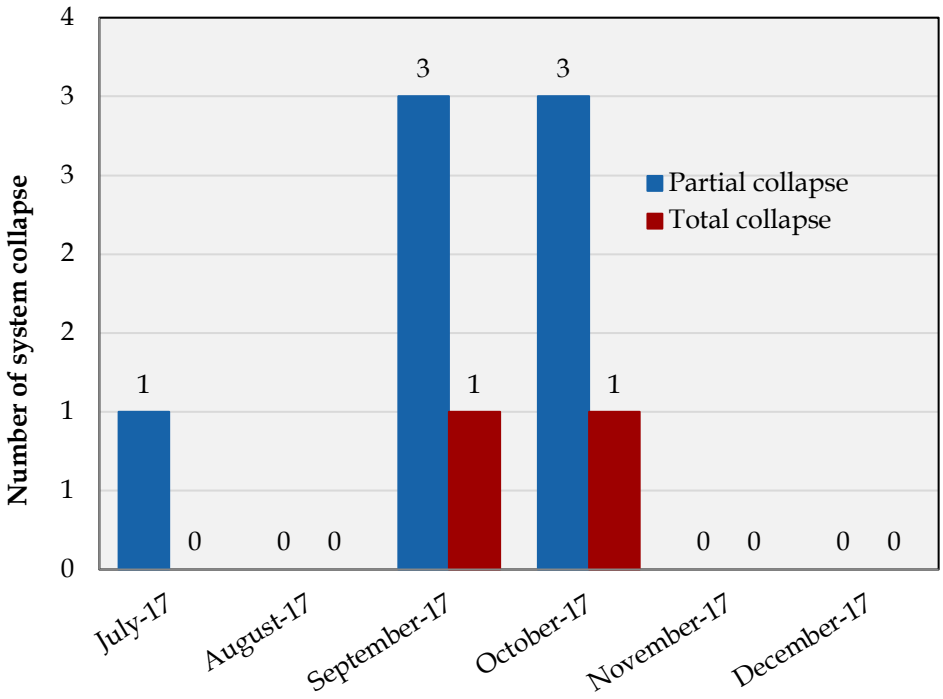


System Collapse

There is no significant improvement in the stability of the grid network during the last quarter of the year. Figure 12 shows the number of system collapse experienced in the third and final quarter of 2017. The industry recorded one (1) total system collapse (i.e., total black out nation-wide) and three (3) partial system collapse (i.e., failure of a section of the grid) during 2017Q4. This shows a decrease in the number of partial system collapse when compared to the third quarter of 2017 where four (4) partial system collapse were recorded.

Despite the slight relative improvement in the grid stability in the fourth quarter, the Commission remains committed to ensuring stable electricity supply. As such, the Commission will rejuvenate the tighter enforcement of the provisions of the grid code, free governor control at grid-connected power plants and increased investment in transmission network.

Figure 12: System Collapses in 2017Q3 and 2017Q4

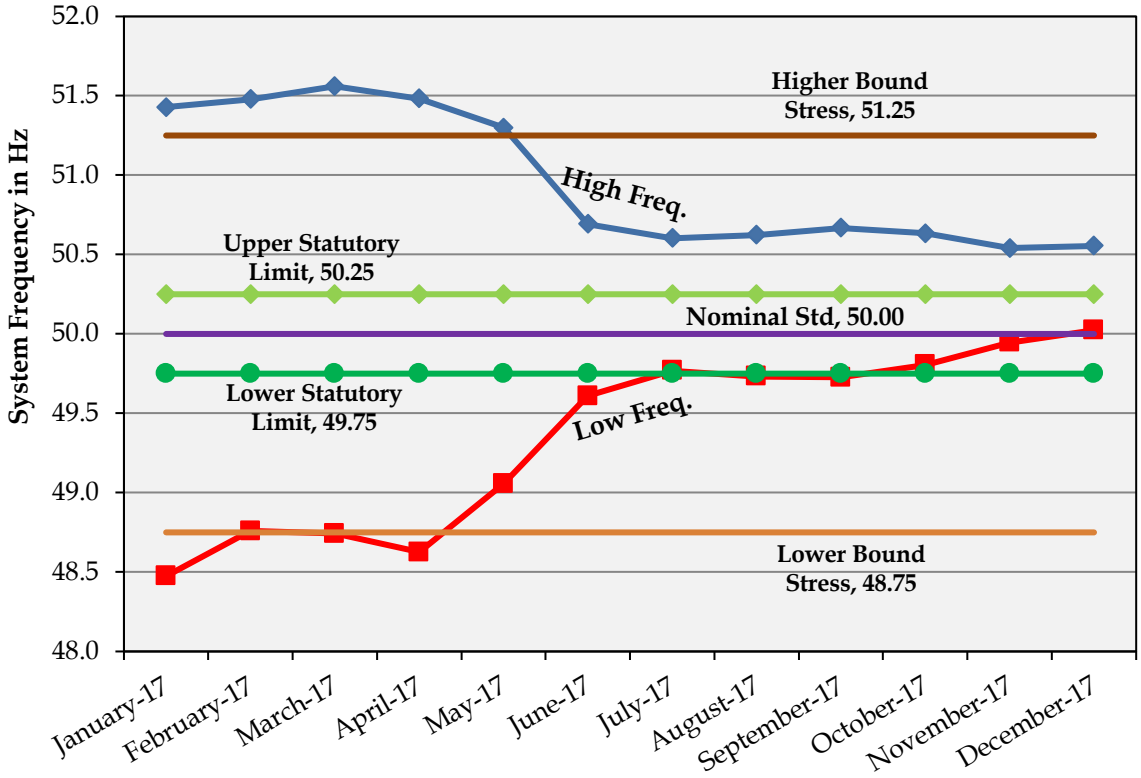


Furthermore, the Commission will continue to intensify monitoring and supervision in order to sustain the directives to ensure Generators are on free governor and frequency control mode in line with the provisions of the subsisting rules in the industry.

Grid Frequency and Voltage

Based on the provisions of the Grid Code, the system frequency, under normal circumstances, is expected to be between a lower limit of 49.75Hz and an upper limit of 50.25Hz while the range from 48.75 to 49.75Hz and from 50.25Hz to 51.25 are considered as lower and upper Stress boundaries respectively. The system frequency pattern from January to December 2017 is shown in Figure 13. Prior to July 2017, the system frequency was considerably and consistently outside the normal statutory limits. In contrast, there were noticeable improvements in the stability of frequency during the third and last quarters of 2017 as the actual system (low and the high) frequency converged towards the statutory levels.

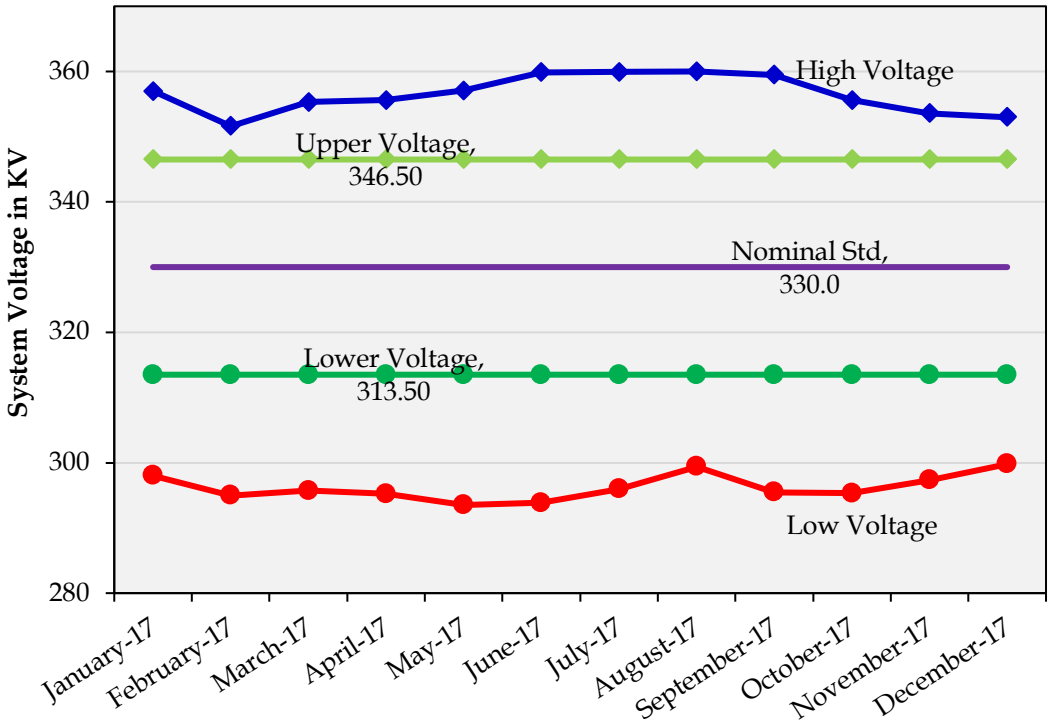
Figure 13: Average Daily System Frequency from Jan. – Dec., 2017



Notwithstanding the recent progress recorded, the Commission will not relent in providing the necessary regulatory interventions to ensure that the system frequency is kept within the statutory limits.

Similar to the frequency pattern, the industry Grid Code allows for voltage fluctuation between a lower boundary of 313.5kV and an upper boundary of 346.5kV. Although there were relative improvements during the last quarter of 2017, the system voltage was recurrently outside the normal statutory boundaries throughout the year as presented by Figure 14. Frequency fluctuation and other harmonic distortion will result in poor power quality that could damage sensitive industrial machineries that are connected at high voltage level. To minimise the frequency fluctuation, the Commission is working with the TCN to ensure that system voltage and frequencies operate within the statutory limits.

Figure 14: System Voltage from Jan. – Dec. 2017



2.2. Commercial Performance

2.2.1. Energy Received and MYTO Load Allocation

Relative to the third quarter of 2017, the amount of energy received by the distribution companies (DisCos) at their trading points for the fourth quarter increased significantly. Specifically, the fourth quarter showed increase of 7.9% from the immediate past quarter in 2017, and stood at 6,691GWh. This increase is reflective of the difference between the electricity generations in the third and fourth quarters. Table 1 presents the amount of energy received and billed by DisCos for the third quarter and fourth quarter of 2017. Of the 6,691GWh total energy received by DisCos in the fourth quarter, only 5,136GWh was billed to the end users. Although this is slightly higher than the 4768GWh billed in the third quarter of 2017, the billing efficiency has not improved from the average of 77% recorded in the third quarter.

Table 1: Energy Received and Billed by DisCos in Q3 and Q4 2017

	Total Energy Received (GWh)		Total Energy Billed (GWh)		Billing Efficiency (%)	
DisCos	**2017Q3**	**2017Q4**	**2017Q3**	**2017Q4**	**2017Q3**	**2017Q4**
Abuja	812	855	673	717	83	84
Benin	535	644	425	506	79	79
Eko	721	784	590	687	82	88
Enugu	548	554	405	397	74	72
Ibadan	828	891	597	643	72	72
Ikeja	807	865	654	673	81	78
Jos	344	361	239	251	69	70
Kaduna	440	484	291	315	66	65
Kano	445	473	360	389	81	82
Port Harcourt	507	542	387	396	76	73
Yola	212	238	148	161	70	68
Total	**6200**	**6691**	**4768**	**5136**	**77**	**77**

Notes:
DisCos are the electricity distribution companies

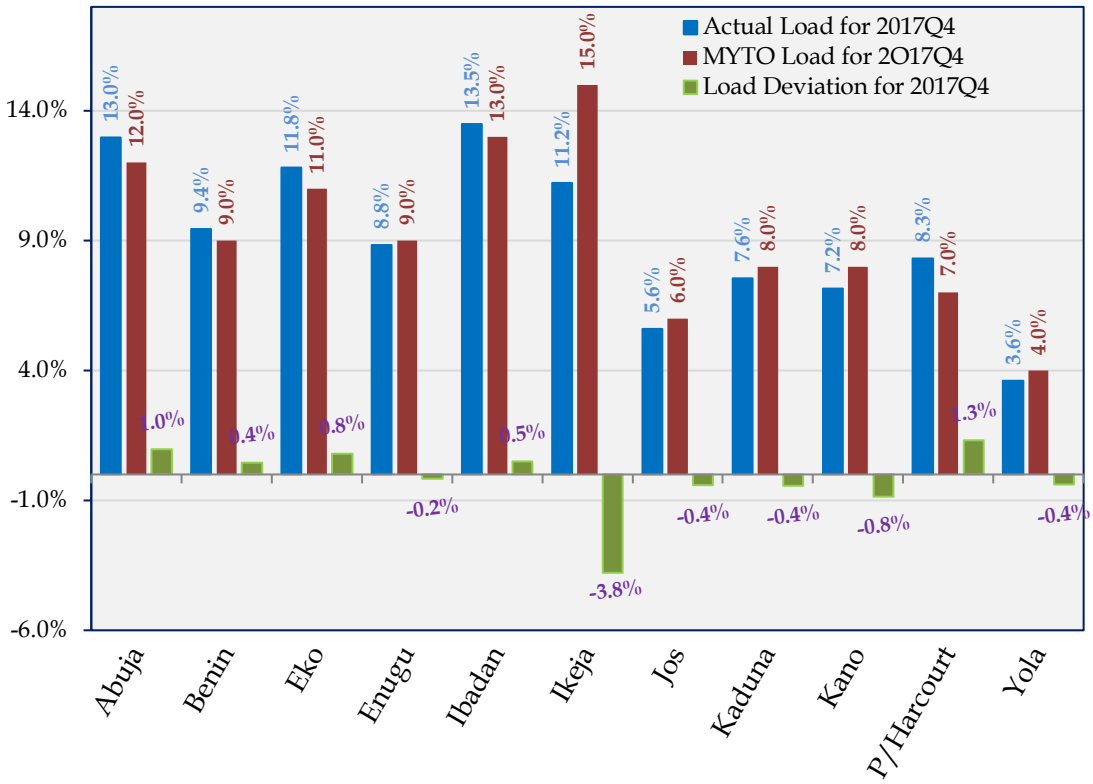
The level of billing efficiency during these quarters indicates that for every 10kWh of energy received by a DisCo from the Transmission Service Provider (TSP), approximately 2.3kWh is lost due to technical constraint and illegal connection. In other words, for every ₦10 worth of electricity received by DisCos, ₦2.30 is lost due to poor distribution infrastructure and energy theft. With regards to the individual performance, Table 1 shows that Eko DisCo had the highest billing efficiency of 88% in the last quarter, while Kaduna DisCo recorded the lowest billing efficiency of 65%. On the basis of relative improvement from the third quarter, Eko DisCo also recorded a significant progress in its billing efficiency moving from 82% in the third quarter to 88% in the fourth quarter. Other DisCos that recorded relative progress in their billing efficiency are Abuja, Jos and Kano.

To curb the seemingly high losses linked to technical and commercial performance, the Commission is finalising a system change in tariff review procedures, where actual investments by the DisCos would be thoroughly verified, evaluated and compared with the proposed investments on which they had been allowed return. A mechanism will also be developed, in the subsequent

tariff review, to claw back any return received on proposed investments that were not executed by DisCos. This action is expected to improve the DisCos' commitment to their network upgrade and reduce technical loss. To stop the commercial loss, the Commission has already directed the DisCos to do asset mapping and tagging customer enumeration in order to identify illegal connection and bring them onto their billing platform.

Figure 15 compares the MYTO load allocation with the share of the total energy received by DisCos during the fourth quarter. None of the DisCos received a share of energy equal to their MYTO share. On the other hand, Enugu, Ikeja, Jos, Kaduna, Kano and Yola received less energy than their MYTO allocation, possibly reflecting the technical limitation of their network during the period and load rejection during the period.

Figure 15: Load Allocation to DisCos vs. MYTO Load in 2017Q4



2.2.2. Revenue and Collection Efficiency

The total collection by DisCos from their respective customers in the last quarter of 2017 stood at ₦101 billion out of the total bill of ₦161.8 billion. This represents a 12.1% increase when compared with ₦90.3 billion collected in the third quarter of the same year. The increase in revenue collection in the fourth quarter might be explained by increase in energy generated and amount billed or perhaps a reflection of improved collection efficiency. As shown in Table 2, on the average the collection efficiency in the fourth quarter stood at 58%, indicating an increase of 2.5% above the collection efficiency in the third quarter, and the highest quarterly efficiency recorded in 2017 (see Table II of the appendix). Nonetheless, the data show that the collection efficiency of DisCos is still poor as just a little above the half of the revenue billed is recovered as at when due. On the average, the collection efficiency indicates that for every ₦10 billed to customers, ₦4.19 remains unrecovered as at when due. The implication of this DisCos poor collection efficiency is inadequate liquidity which is currently affecting NESI.

As regards individual performances, Ikeja DisCo had the highest collection efficiency of 86.2% followed by Eko DisCo with 84.1%, while Jos DisCo recorded the lowest collection efficiency of 33.1%. On quarter-on-quarter basis, Ibadan DisCo recorded the highest improvement in collection efficiency moving from 61.7% in the third quarter to 71.8% in the fourth quarter. Other DisCos that recorded improvement in their collection efficiency between the two quarters are Abuja, Eko, Ikeja, Jos, Kano and Yola

Noting that a major factor contributing to low collection efficiency is customers' dissatisfaction with estimated billing which often resulted in apathy to payment, the Commission is finalising a regulation to fast-track the roll-out of meters by potential investors under a financially viable and bankable arrangements.

Table 2: Revenue Performance of DisCos in Q3 and Q4 2017

DisCos	Total Billings (₦'Billion)		Revenue Collected (₦'Billion)		Collection Efficiency (%)	
	2017Q3	2017Q4	2017Q3	2017Q4	2017Q3	2017Q4
Abuja	21.5	23.2	13.2	15.5	61.4	66.8
Benin	15.0	17.8	9.0	9.5	59.8	53.3
Eko	18.5	19.9	14.5	16.7	78.3	84.1
Enugu	14.9	14.6	8.5	9.0	57.1	61.6
Ibadan	17.8	18.9	11.0	13.5	61.7	71.8
Ikeja	18.2	18.8	14.8	16.2	81.2	86.2
Jos	8.4	8.8	3.0	2.9	35.4	33.1
Kaduna	9.1	9.8	3.6	3.7	39.2	37.7
Kano	10.4	11.6	4.6	5.7	44.1	49.3
Port Harcourt	13.9	14.2	6.3	6.2	45.2	44.0
Yola	4.0	4.3	1.9	2.2	47.4	50.4
Total	**151.8**	**161.8**	**90.3**	**101**	**59.5**	**62.5**
Average	**13.8**	**14.7**	**8.2**	**9.2**	**55.5**	**58.0**

Notes of table:
DisCos are the electricity distribution companies

2.2.3. Aggregate Technical, Commercial and Collection (ATC&C) Losses

Aggregate technical, commercial and collection (ATC&C) losses are the combination of losses due to billing and collection inefficiencies. Table 3 presents the monthly, and third and fourth quarters ATC&C for the DisCos in 2017. The average ATC&C for all the DisCos in the fourth quarter declined by 3% from the 54% recorded during the third quarter. Nonetheless, the losses are significantly higher than the average 25% MYTO allowable ATC&C losses for 2017.

The high ATC&C losses reflect low investments in distribution networks and pose a liquidity challenge to the industry. The implication of the ATC&C losses in the fourth quarter of 2017 is that as much as ₦5.10 in every ₦10 worth of energy received by DisCos was either unaccounted for or unrecovered during the period, due to a combination of inefficient distribution networks, illegal connection and non-collection (customer apathy to payment).

Table 3: ATC&C Losses for DisCos in Q3 and Q4 2017

	MYTO	Ave. Quarterly ATC&C		Ave. Annual ATC&C
DisCos		**2017Q3**	**2017Q4**	**2017**
Abuja	24%	49%	44%	47%
Benin	31%	52%	58%	55%
Eko	14%	36%	26%	33%
Enugu	29%	58%	56%	59%
Ibadan	25%	56%	48%	53%
Ikeja	15%	34%	33%	37%
Jos	44%	75%	77%	74%
Kaduna	20%	74%	76%	74%
Kano	29%	64%	59%	61%
Port Harcourt	37%	65%	68%	65%
Yola	28%	67%	66%	64%
All DisCos				
MYTO Level	**25%**	**-**	**-**	**-**
ATC&C losses	**-**	**54%**	**51%**	**54%**

Notes of table:
1. DisCos are the electricity distribution companies
2. MYTO is Multi Year Tariff Order

With regards to the individual performance, Table 3 shows that Eko DisCo had the lowest ATC&C losses of 26% in the fourth quarter, while Jos and Kaduna DisCos recorded the highest ATC&C losses of 77% and 76% respectively. On the basis of relative improvement from the third quarter, Eko DisCo also recorded a significant decline in its ATC&C losses dropping from 36% in the third quarter to 26% in the last quarter. Other DisCos that recorded relative decline in its ATC&C losses include Abuja, Enugu, Ibadan, Ikeja, Kano and Yola.

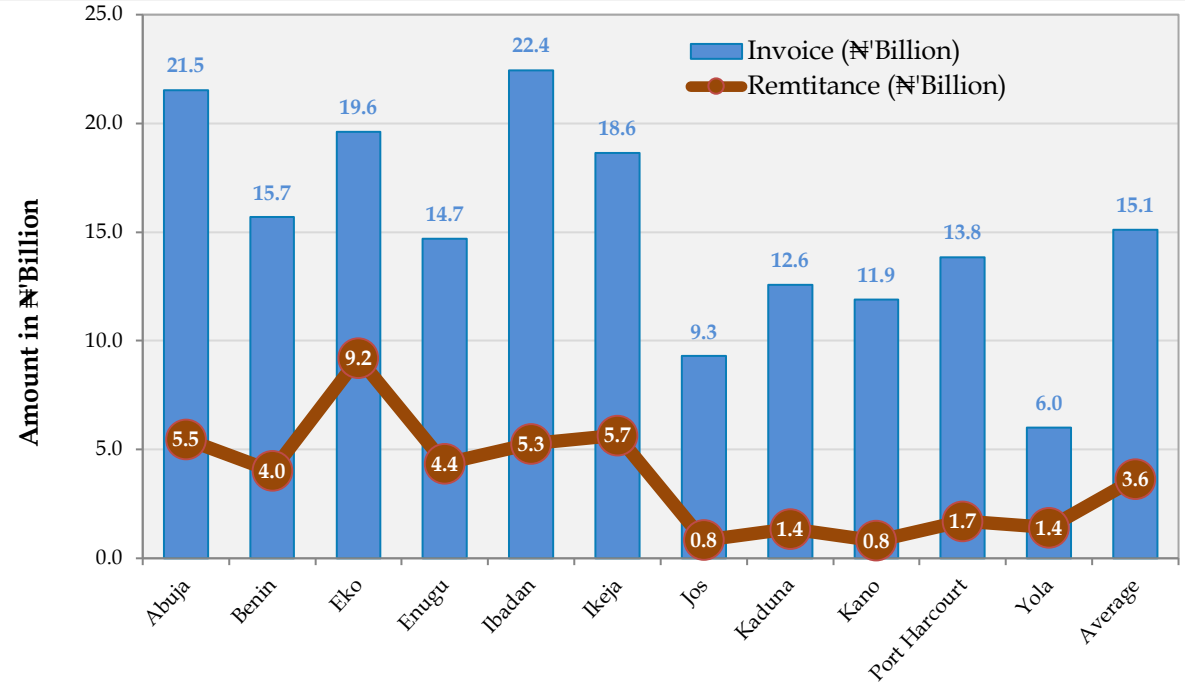
2.2.4. Remittance Performance

The liquidity challenges in NESI also manifested in the fourth quarter of 2017 as evidenced in the DisCos' remittances relative to the invoices received for energy purchased from NBET and those received for administrative services from MOs. In the fourth quarter, whereas DisCos were issued a total invoice of ₦166.2billion

for energy received from NBET and for the services provided by MOs, only ₦40billion of the invoice was settled, creating a total deficit of ₦126.1billion.

Figure 16 shows the market invoice and remittance by DisCos in the fourth quarter of 2017. Similar to 2017Q3, none of the DisCos settled up to half of its market invoices in 2017Q4. Only Eko DisCo settled up to 40% of their invoice followed by Ikeja DisCo which settled only 31% of their market invoice. The most disturbing aspect of this poor performance is the observed downward trend in DisCos' remittance performance despite the improvement in collection efficiency. The overall market remittance declined from 30% recorded in the third quarter to 24% in the fourth quarter in spite of 2.5% increase in collection efficiency.

Figure 16: Market Invoice and Remittance by DisCo in 2017Q4



DisCo	Abuja	Benin	Eko	Enugu	Ibadan	Ikeja	Jos	Kaduna	Kano	P/Harcourt	Yola	**Avg.**
Remittance	26%	25%	47%	30%	24%	31%	8.6%	11%	6.7%	12%	23%	**24%**

The overall remittance to NBET for the fourth quarter was just 21% of the total energy invoice, a decrease of 7.9% from the 28.9% recorded in 2017Q3. Also, the Market Operator received only 39.9% remittance of the invoice issued for service charge (see Table 4 for details). Furthermore, the total NBET's and MO's invoices

issued to Ajaokuta Steel and environs (designated as special customers) and international customers (CEB/SAKETE and NIGELEC) during the fourth quarter stood at ₦0.3billion and ₦11.2billion respectively. However, no payment was received from the international and special customers for the period. The Commission understands that the government is not relenting in engaging the governments of Niger and Benin to ensure prompt payments for the electricity purchased by the international customers.

Poor remittance is of greater concern to the Commission because of its associated serious liquidity challenge in the Nigerian electricity industry. Low remittance impacts the ability of NBET to honour its obligations to generation companies while service providers also struggle to meet their statutory obligations due to financial constraints resulting from low upstream remittance by DisCos.

Table 4: DisCos Quarterly Remittances to NBET and MOs in Q3 and Q4 2017

	NBET: Capacity & Energy (₦'Billion)			Relative Performance (%)		Market Operator (₦'Billion)			Relative Performance (%)	
	Invoice	Remit.	Bal.			Invoice	Remit.	Bal.		
DisCos	**Q4**	**Q4**	**Q4**	**Q3**	**Q4**	**Q4**	**Q4**	**Q4**	**Q3**	**Q4**
Abuja	17.96	4.57	13.39	30.9	25.5	3.57	0.90	2.67	29.2	25.2
Benin	13.08	2.62	10.46	38.9	20.0	2.60	1.39	1.21	65.0	53.4
Eko	16.36	6.60	9.76	38.3	40.3	3.25	2.60	0.65	48.8	80.0
Enugu	12.25	3.50	8.75	31.6	28.6	2.43	0.85	1.58	28.5	34.9
Ibadan	18.71	4.29	14.42	32.3	22.9	3.73	0.98	2.75	28.4	26.2
Ikeja	15.56	3.91	11.66	40.0	25.1	3.08	1.75	1.34	58.1	56.6
Jos	7.75	0.60	7.15	14.2	7.8	1.54	0.23	1.31	15.2	15.1
Kaduna	10.48	0.95	9.53	15.1	9.1	2.09	0.40	1.69	16.4	19.2
Kano	9.92	0.50	9.42	19.8	5.0	1.97	0.30	1.67	11.6	15.2
P/Harcourt	11.54	1.10	10.44	13.7	9.5	2.29	0.60	1.69	21.0	26.2
Yola	5.01	0.41	4.60	13.4	8.2	1.00	1.00	0.00	100.0	100.0
Total	**138.62**	**29.05**	**109.57**	**28.9**	**21.0**	**27.57**	**11.00**	**16.57**	**36.9**	**39.9**
Average	**12.60**	**2.64**	**9.96**	**26.2**	**18.4**	**2.51**	**1.00**	**1.51**	**38.4**	**41.1**
CEB	**6.89**	**0.00**	**6.89**	**0.0**	**0.0**	**1.26**	**0.00**	**1.26**	**0.0**	**0.0**
NIGELEC	**2.20**	**0.00**	**2.20**	**0.0**	**0.0**	**0.86**	**0.00**	**0.86**	**0.0**	**0.0**
Ajaokuta	**0.25**	**0.00**	**0.25**	**0.0**	**0.0**	**0.05**	**0.00**	**0.05**	**0.0**	**0.0**

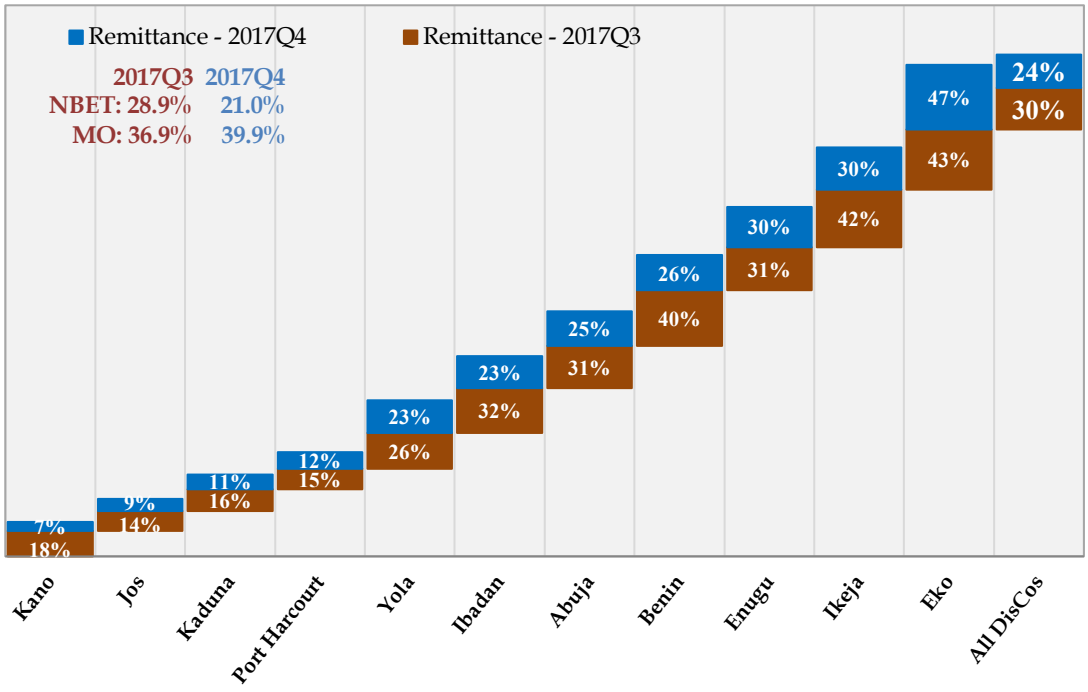
Notes:
1. DisCos, NBET, MOs, CEB and NIGELEC are electricity Distribution Companies, Nigeria Bulk Electricity Trader, Market Operators, Beninois Electricity Community and Nigerien Electricity Society respectively.
2. ₦'Billion is billions of Nigeria Currency.

Despite the overall improvement in the revenue collection efficiency of the DisCos (see Table 2), there was 6% drop in total (combined) remittance to NBET and MO in the fourth quarter relative to the third quarter of 2017. Only 24.1% of the fourth quarter's market invoice was settled by DisCos compared to the 30% settlement performance recorded in the third quarter. Figure 17 shows the proportion of market invoice settled by DisCo for the third and fourth quarters. Eko DisCo had the highest remittance at 46.9%. On the other hand, Kano and Jos had the lowest payment performance at 6.7% and 9.0% respectively, indicating a decrease of 11.8% and 5.4% respectively from their remittance performance in the third quarter.

Although part of the outstanding invoiced amount not paid by DisCos to the upstream can be ascribed to tariff deficit, the Commission has noted that some (if not all) DisCos are not incentivized to improve on their revenue collection from

consumers because they are currently opportune to appropriate market funds and sometimes they keep more than their fair share from the funds.

Figure 17: Market Remittance by DisCos in 2017Q3&Q4



To address the poor remittance by DisCos, the Commission is currently finalising a framework to ensure an equitable distribution of market revenue under a structured regime. This framework aims at ensuring transparency in the utilisation of market funds, thereby improving the liquidity in the Nigerian electricity supply industry.

3. REGULATORY FUNCTIONS

3.1. Regulations and Orders

Although no new regulation was issued during the fourth quarter, the Commission finalised a number of regulations for implementation in the subsequent quarters. These include Meter Asset Providers Regulations and Regulations on Eligible Customers. Details on these regulations were already provided in the third quarter report. Moreover, the Commission reviewed the existing Order on Illegal Connections, Meter by-Passing and Tampering. The objective of this review was to make the order more stringent in order to discourage energy theft.

3.2. Licencing and Permits

Table 5 presents a summary of all licences issued by the Commission during the last quarter of 2017. The Commission issued two (2) new licences, renewed three (3) and granted extension for one (1) other during the quarter. The nameplate capacities of those licences summed up to 507.5MW. On the other hand, four (4) permits were issued for captive power generation with a total capacity of 62.5MW. In the same quarter, however, the Commission after due diligence approved the withdrawal of licence issued to Trombay Power Generation Company (TPGC) Limited to generate 500MW in Wajari, Yamaltu Deba, Gombe State). The withdrawal was based on the TPGC's request and preference for another generation licence for a proposed 100MW capacity plant to be located in Gwer East Makurdi, and the Commission's evaluation of its financial strength which revealed that the applicant did not have adequate financial capacity to own two licences.

Table 5: Generation Licences and Permit Issues (or Withdrawn) in 2017Q4

	Applicants	Location in Nigeria	Capacity (MW)
	Licence Issued		
1	Banji Power Generation Ltd	Gwer East Makurdi, Benue	100.0
2	Aggreko Projects Ltd	Lafarge , Sagamu, Ogun	17.5
	Licence Renewed		
3	First Independent Company Ltd:	Omoku	150.0
		Trans Amadi	95.0
		Eleme	95.0
	Licence Extended		
4	Oriental Solutions Ltd (Solar plant)	Dutse, Jigawa	50.0
	Captive Power Generation Permit granted		
5	Shell Petroleum Development of Nigeria:		
	➢ Sea-Eagle FPSO		50.0
	➢ Kolo Creek Oil & Nag Manifold		6.0
	➢ Okolomo		2.0
6	Engee Pet Manufacturing Ltd	Igbesa Village, Ogun	4.5
	Licence Withdrawn		
7	Trombay Power Generation Company Ltd	Wajari, Yamaltu Deba, Gombe	500.0

3.2.1. Certification of Metering Service Providers

During the last quarter of 2017, the Commission certified three (3) meter service providers (i.e. meter installers) following the satisfactory evaluation of their applications. Table 6 presents the names of the successful applicants and their certification class.

Table 6: Certification of Meter Service Providers in 2017Q4

S/N	Name of Applicant	Certification Class
1.	EL- Excellar Global Resource Limited	Installer (A1)
2.	Mdalifu Ventures Nigeria Limited	Installer (A1)
3.	Fortmarch 85 Communications	Installer (A1)

3.2.2. Licence Application under Evaluation

During the fourth quarter of 2017, there were 5 (both new and existing) on grid and off-grid applications under evaluation by the Commission for issuance of licences and permits as may be applicable. Table 7 presents the details of the applications.

Table 7: Application Being Evaluated in 2017Q4

S/N	Applicants	Category	Capacity (MW)
1	Lexcel Energy Ltd	Off-grid -Gas	7.5
2	Banner Energy Ltd	On-grid -Gas	500
3	New Direction Solar Power Ltd	On-grid -Gas	100
4	Pas Dutse and Pas Hadejia Solar Power Plant	On-grid -Gas	50
5	The Amendment of the Okpai IPP License	On-grid -Gas	450

Furthermore, during the last quarter of 2017, the Commission continued the technical evaluation of Independent Electricity Distribution Network (IEDN) applications from the following prospective investors.

I. ***Babcock Consulting Limited***: The application was in respect of Babcock University (BU) to distribute 1.5MW within the Babcock University by BU Power. Technical evaluation of the application has been completed and site inspection carried out in September. The Legal, Licensing and Compliance Division of the Commission is assessing the final report on the technical evaluation for necessary action.

II. ***LADOL Integrated Logistic Services FZE***: The application was made for the distribution of 29.1 MW to be generated by LADOL integrated logistic services. Technical Evaluation of the application has been completed and physical inspection of the facility carried out. The Legal, Licensing and Compliance Division of the Commission is assessing the final report on the technical evaluation for necessary action.

III. ***Eko Atlantic Utility***: The application is in respect of Eko Atlantic City, Lagos for Generation and Distribution of 75MW to the Eko Atlantic city. The application has been reviewed and additional documentation was requested from the applicant to meet up with the requirement for completeness. The Commission is still awaiting the extra information from the applicant.

IV. ***Ossiomo Offsites & Utility Company***: The application is in respect of the amendment of its Independent Electricity Distribution Network (IEDN) licence to distribute 30MW. The applicant intends to extend its area coverage to supply electricity within the Ossiomo I park in Edo state, as well as to Eligible Customer Located along the Benin Sapele Road from Ossiomo Industrial Park Junction to Ring Road, Benin City. Technical evaluation of the application has been completed. The Legal, Licensing and Compliance Division of the Commission is assessing the final report for necessary action.

V. ***Hydro City Nigeria Limited*** submitted an application for IEDN to distribute 26MW of Electricity to be generated from the Ofeji Hydro Power Plant by Winners Power Gardens Limited. The application has been reviewed and additional documentation was requested from the applicant to meet up with the requirement for completeness. The Commission is still awaiting the extra information from the applicant.

VI. ***Otakikpo Independent Electricity Distribution Network*** applied for IEDN licence to enable it distributes electricity within Otakikpo Industrial Park in Adoni Local Government area of Port Harcourt, Rivers State. The application is being reviewed and applicant has been requested to provide additional information on the project. The Commission is still awaiting the extra information from the applicant.

3.2.3. New Application

In addition to the existing IEDN applications from the previous quarters, the Commission received two (2) new applications in the last quarter of 2017 from the following applicants:

I. ***Ariaria Market IEDN:*** This is incorporated for the sole purpose of providing complete energy solution to the Ariara Market in Aba, Abia state. The IEDN licence is to enable the company evacuate 9.5MW Power to be generated by Ariari Market Limited IPP. The Application has been reviewed and applicant requested to provide additional information on the Project. The Commission is still awaiting the further information from the applicant.

II. ***Tadabo Electricity Distribution Company***: The Company is a subsidiary of Kano Hydro and Energy development Company (KHEDCO) that was plotted solely to serve as SPV for the evacuation of the generated Power from Tiga and Challawa hydro power plants. The power will be distributed to Kano Water Board owned water treatment plants at Tamurwa and Challawa to power the heavy-duty water pumps. The applicant has been requested to submit additional documents to enable complete technical evaluation of the application.

3.2.4. Captive Power Generation

As at the end of the fourth quarter of 2017, there were 20 applications for the grant of permits for captive power generation before the Commission.. Nine of these applications (i.e., S/N. 8-16) were received from the Rural Electrification Agency (REA) during the third quarter on behalf of 9 Nigerian Universities, as part of the REA's Energising Education Program. The Commission had since advised the REA to inform the universities to submit their respective applications in compliance with the extant industry rules. Table 8 presents the details of the

proposed captive power generation plants whose applications were under review during the fourth quarter of 2017.

Table 8: Application for Captive Power Generation in 2017Q4

S/N	Applicants	Nameplate Capacity (MW)
1	Challawa Gorge Dam Hydro Power Plant, Karaye LGA Kano	6.0
2	Tiga Dam Hydro Power Plant, Bebeji LGA Kano	10.0
3	Cummins Power Nigeria, Port-Harcourt	3.5
4	Warri Refining Petrochemical, Delta State)	83.0
5	Total E&P Nigeria Ltd	14.4
6	Shell Petroleum Development Company Nigeria Ltd (Southern Swamp Associated Gas Solutions Projects):	
	• Benisede	4.285
	• Tunu	15.855
	• Ogbotobo	3.978
	• Opukushi	4.285
7	African Steel Mills Nigeria Ltd	20.0
8-16	Rural Electrification Agency on behalf of 9 Nigerian Universities	28.56
17	Nigerian LNG Ltd	
18	Cummins Power Generation, Asejiri	3.5
19	Cummins Power Generation	1.75
20	Julius Berger Nigeria Limited (6 Applications)	

Notes:
E&P and LNG are acronyms for Exploration and Production, and Liquefied Natural Gas respectively

3.2.5. Public Consultation on Regulations

No new public consultations were made during the final quarter of 2017 but the Commission continued to work on the feedbacks received from the previous public consultations reported in the 2017 third quarter report.

3.3. Compliance and Enforcements

To ensure compliance, the Commission continued the enforcement actions against a number of operators for violations of rules, and infractions. These include the violations of regulations, failure to provide required data within a timeline, accidents and electrocution cases among others. During the fourth

quarter, the Commission continued with the enforcement actions commenced in the third quarter against:

A. Enugu Disco for violation of Forum decision in the case of Aronu
B. Enugu Disco for breaches that led to the electrocution of late Mr Patrick Okechukwu at Nsukka
C. Abuja, Benin, Eko, Enugu, Ibadan, Kano and Port Harcourt DisCos for failure to provide info on customers supplied on 33KV line and above.
D. Enugu, Jos, and Yola DisCos for failure to provide data on customer enumeration

At the close of the last quarter of 2017, there were a total of twenty one (21) enforcement cases including those carried forward from the previous quarters before the Commission.

3.4. Health and Safety

During the fourth of 2017, the Commission received a total of seventy-two (72) accident notification reports from twenty nine (29) licensees. These Reports were used for monitoring and evaluation of Health & Safety performance of licensees in order to ensure that operators keep up to their responsibility of delivering safe electricity services to consumers in line with the Provisions of Section 32 1(e) of the Electric Power Sector Reform (Act), 2005. The accidents resulted in fifteen (15) deaths and ten (10) injuries of various degrees involving both employees of the companies and the third parties.

In comparison, there was an improvement in health and safety performance of the operators during the fourth quarter relative to the third quarter of the same year where the industry recorded twenty five (25) deaths and fifteen (15) injuries. Enforcement actions are being taken on fourteen (14) incidences involving various health and safety breaches during the quarter under review. Table 9

provides the summary statistics of the accidents experienced in the industry during the last quarter of 2017.

Table 9: Health and Safety (H&S) Reports in 2017Q3-2017Q4

Item	Frequency		% Change in H&S Reports
	2017Q3	2017Q4	
Number of H&S Reports	47	72	53.19%
Number of Accidents	37	19	-48.65%
Number of Deaths	25	15	-40.00%
Number of People Injured	15	10	-33.33%
Number of Enforcement Actions Taken	12	14	16.67%

The Commission takes safety of all electricity users and all Nigerians very seriously. The Commission therefore will not relent in developing various safety programmes aiming at eliminating accidents in the industry. Among the safety programmes to be implemented by the Commission include but not limited to standardisation of Protective Schemes, engagement of Government Agencies on Right of Way violation, public enlightenment on safety, and a review of operational procedures for Distribution System Operators on fault clearing.

4. CONSUMER AFFAIRS

4.1. Consumer Education and Enlightenment

As part of its efforts to ensure that consumers are well informed of their rights, the Commission directed all the eleven DisCos to organise town hall meetings and sponsor a number of sensitisation programmes for their customers, and monitored the compliance accordingly. On its part also, the Commission hosted two Power Consumer Assembly in Lagos (Eko and Ikeja Disco) respectively on the 22nd and 23rd of November 2017. The turnout for the programme was very impressive and participants were educated on the redress mechanism, enforcement, roles of the Commission, estimated billing, outstanding metering gaps and efforts being made to resolve them.

In support of the Commission's effort in improving customer awareness, the Mac Arthur Foundation has awarded a grant of US$600,000.00 to the Commission to further strengthen the customer enlightenment programme. For effective utilisation of the fund, the Commission has developed a schedule of consumer awareness programmes to be organised in 2018. The subjects for discussion at the proposed programmes include but not limited to customer redress mechanism, metering and estimated billing, safety and consumer rights.

4.2. Metering of End-use Customers

The summary statistics of metering status as at the end of the fourth quarter of 2017 are provided in Table 10. Out of the 7,947,121 registered electricity customers, only 3,573,657 (45%) have been metered. Thus, 55% of end-use customers are still on estimated billing. During the quarter under review, DisCos installed only 122,460 meters. This incremental meter deployment is significantly lower than the expected quarterly average of 410,103 meters stated in their performance agreement with the BPE. Notably, with the exception of Benin, Kaduna and Port- -Harcourt DisCos, the metering gap for each DisCo is still

greater than the number of metered customers. The Commission will continue to work with the DisCos to ensure total compliance with their respective metering plan as contained in their Performance Agreement with the Bureau of Public Enterprises (BPE), while fast-tracking the completion of the Meter Asset Provider (MAP) Regulations proposed by the Commission.

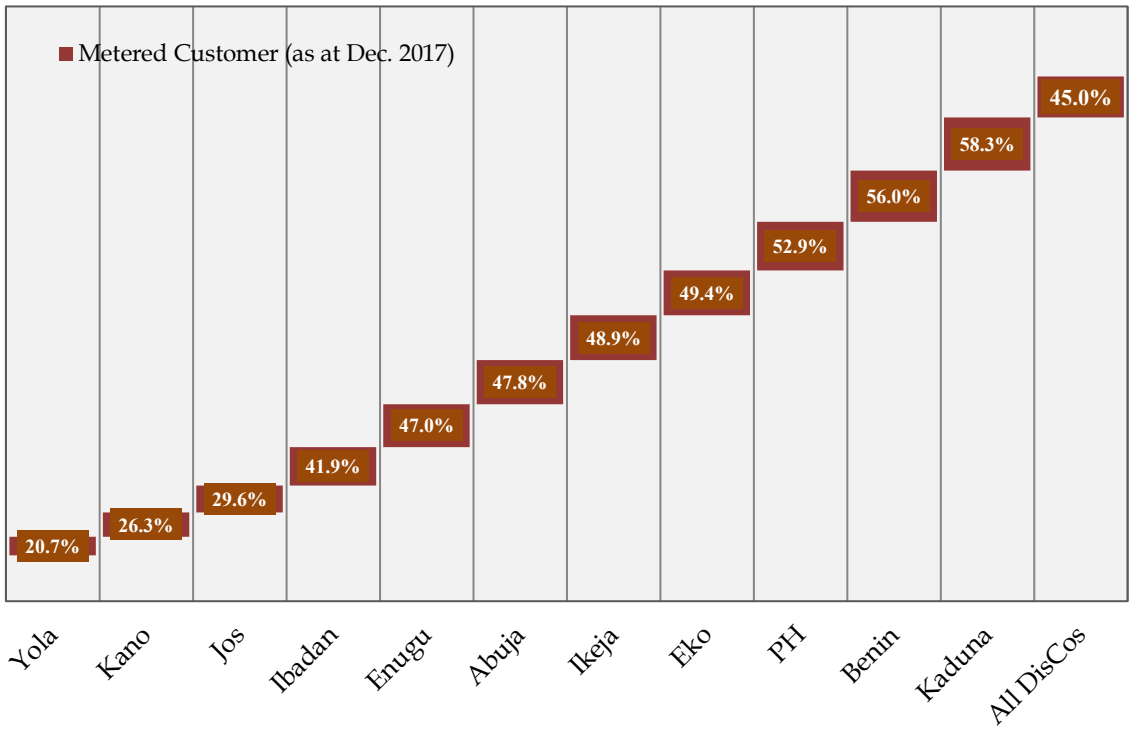
Table 10: Customers Metering Status by DisCos as at December 2017

DisCos	Registered Customer as at December 2017	No. of Metered Customer as at September 2017	No. of Metered Customer as at December 2017	Metering Gap as at December 2017
Abuja	966,192	450,041	462,048	504,144
Benin	853,587	535,935	478,318	375,269
Eko	471,013	268,558	232,852	238,161
Enugu	840,208	224,445	394,497	445,711
Ibadan	1,613,635	609,605	676,560	937,075
Ikeja	927,672	467,578	453,382	474,290
Jos	478,698	187,415	141,772	336,926
Kaduna	500,476	238,901	291,592	208,884
Kano	506,638	162,664	133,315	373,323
Port Harcourt	453,818	237,188	239,871	213,947
Yola	335,184	69,282	69,450	265,734
Total	**7,947,121**	**3,451,611**	**3,573,657**	**4,373,464**

Notes of table:
DisCos are the electricity distribution companies, MD is Market Operators

Furthermore, Figure 18 presents the percentage of registered customers metered by each DisCos as at the end of December 2017. It is evident that only three of the DisCos (namely Benin, Kaduna and Port-Harcourt) had metered up to 50% of customers as at the end of the fourth quarter of 2017, which is grossly below the progress expected of them (the DisCos) as stated in the performance agreement. As stated previously, the Commission is finalising the regulation on (Meter Asset Provider) to fast-track meter roll-out in order to quickly close the metering gap.

Figure 18: Customers Metered by DisCos as at Dec. 2017



4.3. Customers Complaints

Table 11 presents the complaints received by DisCos in the last quarter of 2017. The DisCos received a total of 131,669 complaints as against 109,048 complaints received in the third quarter of 2017. Although the number of complaints received increased, the proportion of the number of complaints resolved by DisCos was still around approximately 77% recorded in the third quarter. Benin DisCo had the highest number of complaints followed by Ikeja DisCo. On the other hand, Yola recorded the lowest number of complaints and the highest rate of complaints resolved, reflecting better quality of service by Yola compared to other distribution companies. The details of the categories of complaints received by DisCos in the last quarter of 2017 are presented in Table III of the appendix while the summary is presented in Figure 19.

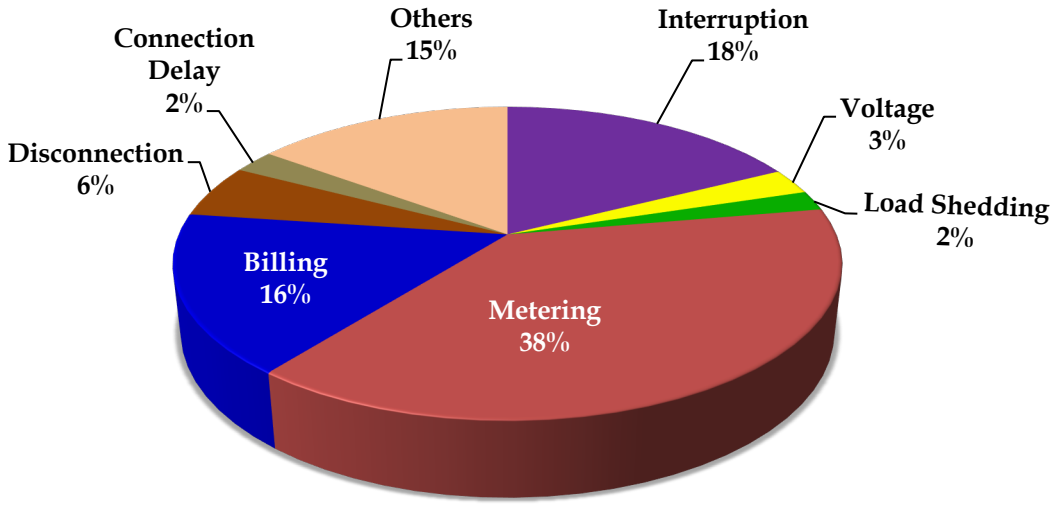
Table 11: Quarterly Complaints Received and Resolved by DisCos, 2017

	2017Q3				2017Q4	
	Complaints:				Complaints:	
DisCos	Total Received	Total resolved	Not resolved	% resolved	Total Received	% Resolved
Abuja	17749	15409	2340	86.82	13221	87.01
Benin	35380	20183	15197	57.05	34238	60.03
Eko	6621	6375	246	96.28	9117	73.49
Enugu	12495	8747	3748	70.00	4723	98.79
Ibadan	9233	7887	1346	85.42	6925	83.71
Ikeja	27617	23909	3708	86.57	21082	82.45
Jos	3291	3040	251	92.37	3060	93.95
Kaduna	8615	6576	2039	76.33	6333	87.81
Kano	4802	4080	722	84.96	3745	75.54
Port Harcourt	3405	2225	1180	65.35	3443	83.36
Yola	2461	2408	53	97.85	3161	96.36
Total	**131669**	**100839**	**30830**	**76.59**	**109048**	**76.83**

The customer complaints centre on service interruption, poor voltage, load shedding, metering, estimated billing, disconnection, delayed connection, among others. All the DisCos received complaints on the aforementioned key issues, with the exception of Enugu DisCo (EEDC) which received no complaint on electricity voltage. The summary presented in Figure 19 shows that metering and billing dominated the customer complaints, accounting for 54% (i.e., 72,314) of the total complaints received during the period under review. This implies that, on average, about 786 customers complained about metering and billing per day. Another issue of serious concern to customers is service interruption, accounting for 18% (i.e., 23,123) of the total customer complaints.

To reduce customers' complaints, the Commission continued to monitor the complaint handling and resolution process adopted by DisCos. Also, the Commission has continued to improve on the operation of its Forum Offices which are set up to adjudicate on consumers' complaints that are not adequately resolved to the satisfaction of consumers by the responsible DisCos. As at the end of the last quarter, the Commission had established twenty five (25) Forum Offices for effective customer appeal complaints redress.

Figure 19: Category of Complaints Received by DisCos in 2017Q4



Moreover, as part of its strategic plan, the Commission has continued to develop frameworks to address the issues that are of serious concerns to consumers including metering and billing. The Meter Asset Provider Regulation being finalised by the Commission is expected to address metering challenges in the industry.

4.4. Forum Offices

In line with the Commission's mandate on Customer Protection, the NERC Forum Offices are set up pursuant to section 80(1) (d) of the EPSR Act 2005 to hear and resolve customer complaints not satisfactorily resolved at the DisCos' Customer Complaints Units. It performs the Commission's quasi-judiciary functions in redressing customers and operators unresolved disputes as enshrined in the NERC's Customer Complaints Handling Standards and Procedures Regulation. As at the end of the fourth quarter, the Commission had opened twenty five (25) Forum Offices in twenty four states and the Federal Capital Territory (Abuja) while effort is being made to meet the Commission's objective of establishing at least one Forum Office in each state of the federation. In 2017, the Forum Offices received 896 complaints per quarter from customers who were unsatisfied with DisCos' decisions on their complaints. Out of the

complaints lodged at Forum Offices, 21% were resolved without a hearing. On average, 40 hearings were conducted per quarter on the submission received and 547 cases heard and resolved.

4.5. Alternative Dispute Resolution

The Commission handled a total of four disputes between operators and customers within the last quarter of 2017 as indicated as follow:

1. Subject matter: Electrocution of three (3) persons and injury to six (6) others in Tundun Wada, Lugbe, Abuja.
   Date: Spilled over from 2nd July 2016.
   Disputant: Greyfields vs. AEDC
   Resolution: Following series of NERC's interventions, AEDC made compensation to families of the three (3) dead persons and four (4) injured persons in various denominations. Payment is being processed for one (1) more injured person as he was not available when the payments were disbursed while the last injured person had proceeded to court and the matter is still ongoing.
   Status: AEDC is in compliance by the agreed term of settlement.

2. Subject matter: Case of illegal disconnection of estate by Eko Disco
   Date: Spilled over from 24th May 2017.
   Disputant: Crown Estate, Lekki vs. EKEDC.
   Resolution: ADR hearing was fixed and communicated to parties. Crown estate (via its solicitors – Terra Marine Attorneys) reverted with an appeal to the Commission to allow parties settle albeit with conditions classified as "without prejudice". Commission accepted and requested a report which is still awaited. Crown estate wrote forwarding

their letter to EKEDC with regards the need to keep the Commission informed about the terms of settlement.

Status: Terms of settlement between parties are still awaited.

3. Subject matter: Case of alleged obstruction and denial of access to Eko Disco personnel to install meters.

Date: Spilled over from 24th April, 2017

Disputant: VGC, Lekki vs. Eko DisCo.

Resolution: Parties were invited including NEMSA and a session of ADR was held. It was resolved that NEMSA conducts routine tests on all meters to be installed, VGC to grant access to EKEDC when installation is to recommence and NERC to be notified on all actions carried out.

Status: The relevant tests have been conducted by NEMSA and EKEDC has notified VGC of its intention to recommence meter installation at VGC. Exercise is ongoing.

4. Subject matter: Request by Osun State government to migrate Owena–Ilesa Area from BEDC to IBEDC's networks and control.

Date: Spilled over from 14th June 2017.

Disputant: Osun State government, BEDC & IBEDC.

Resolution: An ADR session was held and BEDC was mandated to improve service delivery to the communities agitating to be ceded away from its network. BEDC to engage Osun State govt. on how to deal with the investments they have already made towards improving the networks.

Status: Exercise is still ongoing.

5. THE COMMISSION

5.1. Financial Report

The summary of the Commission's revenue and expenditure in the third and fourth quarters of 2017 is presented in Table 12. In the fourth quarter, the total revenue accrued to the Commission was ₦1.269billion comprising ₦1.083 billion from operational levy (market charges) and ₦186.59 million from other sources (e.g., licensing). The accrued revenue was about 3.5% higher than the revenue recorded in the third quarter. On the other hand, the total expenditure of the Commission stood at ₦1.069 billion in the fourth quarter against ₦1.223 billion in the third quarter.

A comparison of revenue and expenditure shows that the revenue accrued to the Commission during the period under review accrued to the Commission during the period under review was more than its expenditure, creating a surplus of ₦200.30million. Nonetheless, the revenue generation has been persistently low and continues to impact negatively on the Commission's ability to discharge its duties effectively, as some regulatory activities were postponed due to paucity of fund. Table IV in the appendix presents further details on the quarterly revenue and expenditure of the Commission for the third and fourth quarters of 2017.

Table 12: Quarterly Revenue and Expenditure of the Commission in 2017

Description	Summary for 2017Q4 (₦'Million)			Total 2017Q4 (₦'Million)	Total 2017Q3 (₦'Million)
	Oct.	Nov.	Dec.		
A. Revenue					
Operating Levy (MC)	350.38	348.53	383.69	1,082.59	1,065.16
Other IGR	77.47	72.62	36.49	186.59	160.68
Total Revenue	**427.85**	**421.15**	**420.18**	**1,269.18**	**1,225.85**
A. Expenditure					
Personnel Cost	163.75	181.21	321.31	666.28	987.80
Regulatory Expenses	135.41	156.29	59.41	351.11	107.82
(A&G) Maintenance	18.69	18.69	14.12	51.50	128.32
Total Expenditure	**317.85**	**356.19**	**394.84**	**1,068.88**	**1,223.94**
Surplus/Deficit (A-B)	**110.00**	**64.96**	**25.35**	**200.30**	**1.91**

Notes MC is Market Charges; IGR is Internal Generated Revenue and A & G is Admin and General

5.2. Training and Promotion

The Commission takes the quality of its staff seriously as the quality of personnel impacts significantly on the operation and success of the Commission. As such, during the last quarter of 2017, the Commission trained a number of staff on Energy Regulation, Managing Power Sector Reform and Regulation, the Application of Uniform System of Account (USoA) to Utility Regulation, Utility Regulation and Strategy, and the Strategic Management of Regulation and Enforcement. Table 13 presents the details of the Commission's training during the quarter under review.

Due to paucity of funds in the quarter under review, the Commission however deferred the promotion exercises for the eligible staff to the next quarter.

Table 13: Training of Staff in 2017Q4

S/N	Training Type	No of Staff Trained
1	Strategic Mgt. of Regulation & Enforcement	2
2	Application of USoA to Utility Regulation	7
3	Advanced Facility Management	2
4	Managing Power Sector Reform and Regulation	7
5	Introduction to Energy Regulation	28

Appendix

Figure I: Plant Availability Factor (%) in 2017Q3 and 2017Q4

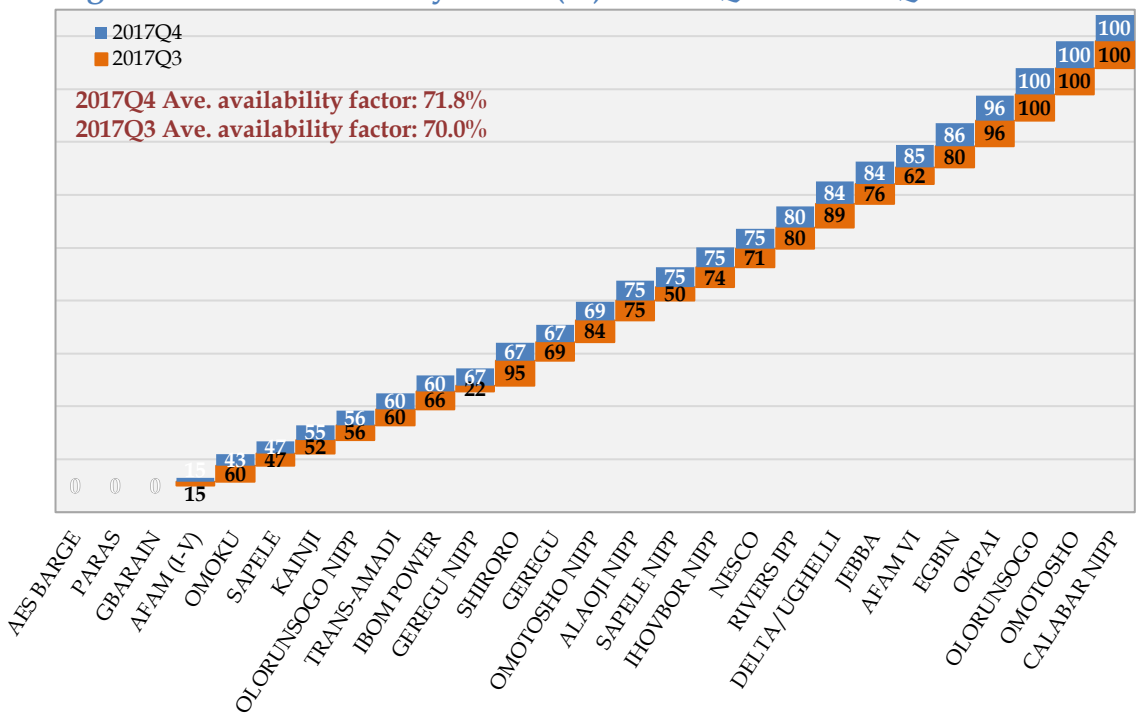


Figure II: Shares of Output (%) by Plants in 2017Q3 and 2017Q4

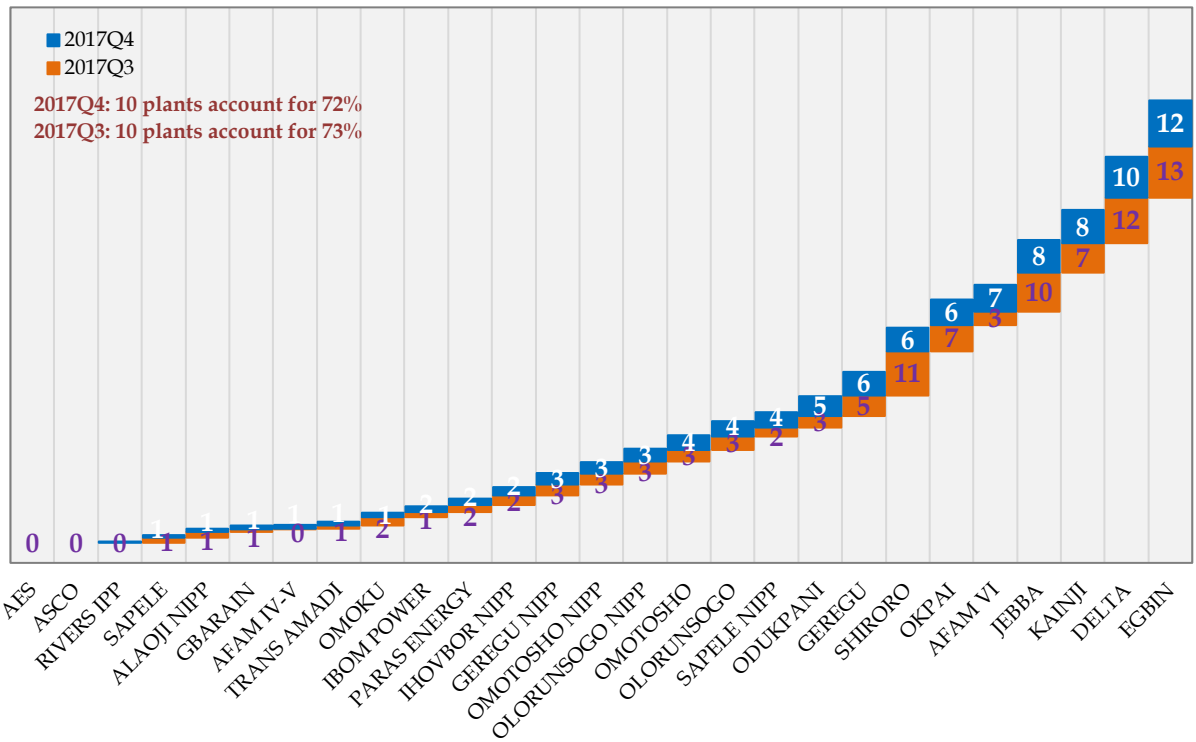


Table I: Energy Received and Billed Per Quarter by DisCos in 2017

DisCos	Total Energy Received (GWh)				Total Energy Billed (GWh)				Billing Efficiency (%)			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Abuja	782	880	812	855	609	687	673	717	78	78	83	84
Benin	545	561	535	644	437	440	425	506	80	78	79	79
Eko	670	776	721	784	578	665	590	687	86	86	82	88
Enugu	602	634	548	554	414	448	405	397	69	71	74	72
Ibadan	781	835	828	891	562	592	597	643	72	71	72	72
Ikeja	741	844	807	865	560	594	654	673	76	70	81	78
Jos	281	333	344	361	215	240	239	251	77	72	69	70
Kaduna	480	591	440	484	362	447	291	315	75	76	66	65
Kano	355	474	445	473	284	392	360	389	80	83	81	82
Port Harcourt	488	483	507	542	390	372	387	396	80	77	76	73
Yola	156	194	212	238	110	132	148	161	70	68	70	68
Total	**5882**	**6603**	**6200**	**6691**	**4520**	**5008**	**4768**	**5136**	**77**	**76**	**77**	**77**

Notes:
1. DisCos are the electricity distribution companies
2. GWh is Gigawatts hour

Table II: Quarterly Revenue Performance by DisCos in 2017

DisCos	Total Billings (₦'Billion)				Revenue Collected (₦'Billion)				Collection Efficiency (%)			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Abuja	19.4	22.3	21.5	23.2	13.1	14.8	13.2	15.5	67.4	66.3	61.4	66.8
Benin	14.6	15.5	15.0	17.8	7.8	9.2	9.0	9.5	53.7	59.2	59.8	53.3
Eko	17.2	19.7	18.5	19.9	13.3	14.6	14.5	16.7	77.4	74.3	78.3	84.1
Enugu	14.7	16.5	14.9	14.6	8.8	8.8	8.5	9.0	59.5	53.5	57.1	61.6
Ibadan	16.7	18.1	17.8	18.9	10.5	11.3	11.0	13.5	63.1	62.7	61.7	71.8
Ikeja	16.1	17.1	18.2	18.8	13.3	13.5	14.8	16.2	82.2	78.6	81.2	86.2
Jos	7.3	8.6	8.4	8.8	2.8	2.9	3.0	2.9	38.8	34.0	35.4	33.1
Kaduna	11.2	13.6	9.1	9.8	4.1	4.7	3.6	3.7	36.6	34.3	39.2	37.7
Kano	8.3	11.7	10.4	11.6	4.5	5.1	4.6	5.7	54.1	44.1	44.1	49.3
P.Harcourt	13.3	13.5	13.9	14.2	6.2	6.2	6.3	6.2	46.6	46.2	45.2	44.0
Yola	2.9	3.6	4.0	4.3	1.7	1.7	1.9	2.2	58.6	47.9	47.4	50.4
Total	**141.7**	**160.1**	**151.8**	**161.8**	**86.1**	**92.9**	**90.3**	**101**	**60.8**	**58.0**	**59.5**	**62.5**
Average	**12.9**	**14.6**	**13.8**	**14.7**	**7.8**	**8.4**	**8.2**	**9.2**	**58.0**	**54.6**	**55.5**	**58.0**

Notes:
1. DisCos are the electricity distribution companies
2. ₦'Billion is Billions of Nigeria Currency

Table III: Complaints by Categories from Discos for 2017Q4

Complaints Categories	DisCos										
	Abuja	Benin	Eko	Enugu	Ibadan	Ikeja	Jos	Kaduna	Kano	Port Harcourt	Yola
Interruption	1433	3806	1200	2173	1226	8359	728	2805	717	196	480
Voltage	279	795	223	0	211	529	140	817	61	257	185
Load Shedding	372	1340	30	380	266	95	14	26	34	105	20
Metering	8407	19239	940	3740	2393	9157	1076	1712	1869	1573	522
Billing	1952	3613	1222	2145	2322	7563	719	784	536	743	87
Disconnection	271	359	178	2944	360	744	28	1710	131	121	386
Connection Delay	86	1604	479	9	281	20	59	8	171	30	413
Others	4949	4624	2349	1104	2174	1150	527	753	1283	380	368
Total	**17749**	**35380**	**6621**	**12495**	**9233**	**27617**	**3291**	**8615**	**4802**	**3405**	**2461**

Notes: DisCos are the electricity distribution companies

Table IV: Quarterly Revenue and Expenditure of the Commission in 2017Q3 & Q4

Description	Summary for 2017Q3 (₦'Million)				Summary for 2017Q4 (₦'Million)				Changes in Rev. & Exp. (Q4-Q3)
	Jul.	Aug.	Sep.	Total	Oct.	Nov.	Dec.	Total	
A. Revenue									
Operating Levy (MC)	356.28	352.12	356.76	1,065.16	350.38	348.53	383.69	1,082.59	17.43
Other IGR	18.42	79.66	62.60	160.68	77.47	72.62	36.49	186.59	25.91
Total Revenue	**374.69**	**431.79**	**419.36**	**1,225.85**	**427.85**	**421.15**	**420.18**	**1,269.18**	**43.33**
A. Expenditure									
Personnel Cost	332.81	473.67	181.33	987.80	163.75	181.21	321.31	666.28	(321.52)
Regulatory Expenses	37.61	60.06	10.15	107.82	135.41	156.29	59.41	351.11	243.29
(A&G) Maintenance	25.91	67.34	35.06	128.32	18.69	18.69	14.12	51.50	(76.82)
Total Expenditure	**396.33**	**601.07**	**226.54**	**1,223.94**	**317.85**	**356.19**	**394.84**	**1,068.88**	**(155.06)**
Surplus/Deficit (A-B)	**(21.63)**	**(169.28)**	**192.82**	**1.91**	**110.00**	**64.96**	**25.35**	**200.30**	**198.39**

Notes: MC is Market Charges; IGR is Internally Generated Revenue, and A & G is Admin and General

NIGERIAN ELECTRICTY REGULATORY COMMISSION
PLOT 1387| CADASTRAL ZONE A00| CENTRAL BUSINESS DISTRICT|
P.M.B. 136| GARKI| ABUJA
www.nerc.gov.ng