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GLOSSARY OF TERMS

S/N	ACRONYM	DEFINITIONS
1.	NERC	NIGERIAN ELECTRICITY REGULATORY COMMISSION
2.	PHCN	POWER HOLDING COMPANY OF NIGERIA
3.	MTS	METER TEST STATION
4.	NECA	NIGERIAN ELECTRICITY CONSUMERS ASSOCIATION
5.	STS	STANDARD TRANSFER SPECIFICATION
6.	DISCO	DISTRIBUTION COMPANY
7.	EMCON	ELECTRICITY METER COMPANY OF NIGERIA
8.	MYTO	MULTI YEAR TARIFF ORDER
9.	LECAN	LICENSED ELECTRICITY CONSUMERS ASSOCIATION OF NIGERIA
10.	ECAN	ELECTRICITY CONSUMERS ASSOCIATION OF NIGERIA
11.	NDA	NIGER DAMS AUTHORITY
12.	NEPA	NATIONAL ELECTRIC POWER AUTHORITY
13.	GMC	GRID METERING CODE
14.	DMC	DISTRIBUTION METERING CODE
15.	KWH	KILOWATT HOUR
16.	PPM	PRE-PAYMENT METERS
17.	CUSTOMER	A PERSON OR ORGANIZATION SUPPLIED WITH ELECTRICITY FOR HIS OWN USE BY A DISTRIBUTION LICENSEE
18.	ILLEGAL CONSUMER	A PERSON OR ORGANISATION WHO IS CONNECTED TO ELECTRICITY SUPPLY BUT NOT REGISTERED IN THE RECORDS OF THE DISTRIBUTION COMPANY FOR PURPOSES OF BILLING

EXECUTIVE SUMMARY

Metering of electricity in Nigeria began with the production and consumption of electricity in the country around 1896. However, the system and process of metering are bedeviled by inefficiencies and corrupt practices.

Historically, electricity metering was centrally coordinated with the various units of NEPA/PHCN at the distribution end relying on the procurement apparatus of NEPA/PHCN Headquarters to procure and distribute meters to customers through three central stores. This inefficient system led to a backlog of meter requests by customers who pay for such services without the meters being installed. The resultant effect has been the institutionalization of the unwholesome practice of estimated billing and the attendant customer dissatisfaction. It is against this background that the Metering Inquiry Committee was set up to gather data and information on the root cause of the endemic metering crisis which impacts the electricity sector negatively.

The Committee conducted Public Hearings in the Six Geo-Political Zones of Nigeria in order to carry out the assignment. The public hearings afforded members of the Committee the opportunity to interact with all the stakeholders. Feedback from the public hearing clearly indicates the existence of institutional and human factors that have led to the present state of emergency in electricity metering in Nigeria. The Committee discovered that less than 50% of the registered customers in the Nigerian Electricity sector are metered. This has led to the prevalent practice of arbitrary charges based on unscientific estimation of electricity

consumed by customers by the Discos in order to meet up with their overhead costs in an environment of inefficiency and dwindling supply of electricity.

Specifically, the Committee finds that:

(1) The total number of customers captured in the records of operators of the Nigerian Electricity Supply Industry is **5,172,979**. This represents **18.65%** of Nigeria's total households put at 28,900,492 as provided by records from the National Bureau of Statistics in 2006. This record however, does not include those enjoying electricity illegally who are not registered by the Discos, known as '**illegal consumers**'.

(2) Out of the number of customers registered, **2,893,701 or 55.94%** were metered, while **2,355,045 or 45.53%** were unmetered. The Committee however discovered that out of the total number of customers metered about **701,385 or 22%** of the meters were faulty.

(3) Thus at present a total of **2,956,069 or 54.83%** of all the customers registered are not metered at all or have no functional meters. On the average therefore only about **2,434,541** or a minute **8.42%** of the total households in Nigeria are currently being billed correctly by all the Discos if a household is used as our metering index. The remaining registered customers are therefore at the mercy of estimated billing. This development has created a wide gap in effective billing which calls for emergency response.

(4) Although the Discos proffered inadequate funding as the reason for non-deployment or late deployment of meters, the Committee considers the excuse as untenable for the following reasons:

The Committee observed in the course of the inquiry that the DISCOs had meters in stock but failed and /or refused to supply and install them accordingly.

- i. It was further established that the CEOs were responsible for the inefficiency and unaccountability that permeate the system. For instance the monies for meters are paid through draft by customers to the CEOs and there is no feedback as to whether they get the meter or not and how long the customer stays before getting meter.
- ii. It was discovered that in most of the DISCOs even though meters were in stock, customers existed who had paid for years and yet were not supplied any. This was confirmed when some customers immediately presented receipts of payment upon the declaration of some of the CEOs of their readiness to meter within a week, those customers with evidence of payment. With this revelation, it shows that meters are not as scarce as the CEOs widely alleged.
- iv The Committee was informed that due to persistent clamour for funds by DISCOs for the purpose of procuring meters, the sum of N2.9 Billion in MYTO 1 was released as subsidy to the DISCOs to make meters available for customers. Although the Committee was informed that the CEOs of the DISCOs are yet to fully account for the funds, we found that their customers have remained largely unmetered. There was also evidence of some Discos refusing customers' prepayments for meters especially prepayments meters.

- v. Lack of autonomy and government interference and absence of competent local meter manufacturers are also critical elements that accounted for the huge metering gap in the country
- vi. Sharp practices and inefficiencies are the hallmarks of the metering system, from ageing power plants and terrible transmission lines to more importantly, rampant corruption and poor collection rates. In virtually all the six zones visited, we received complaints ranging from outright refusal to meter customers, estimated billing following refusal to read installed Non-PPM meters, culture of impunity of PHCN staff, connivance of some unscrupulous PHCN staff with private individuals to defraud the general public, allegations of connivance of PHCN staff and the public to by-pass meters, demand for money for preferential treatment in various forms , such as hot lines, tamper code, PR (un-receipted additional payment) were made for supply of meters. These allegations were sufficiently supported by documentary evidence.
- vii. Estimated billing was the norm in all the DISCOs visited by the Committee. Customers in Lagos, Enugu, Yola, Kaduna, Makurdi and Abuja Distribution Companies alleged that delay in the supply of meters to customers and blatant refusal to obtain correct meter readings which resulted in estimated billing were deliberate. They were of the view that with the poor supply of electricity in the country and gross inefficiency on the part of Discos to curtail operational losses (human and technical) estimated billing ('crazy bills' and **charging them for power they did not consume**) remains the only option for the Discos. Even though the

DISCOs claimed that average consumption of those who were adequately metered was applied to a cluster of residents to arrive at estimated consumption, customers generally believed that the DISCOs' calculations for estimated billing were not based on established scientific or reliable parameters. We are of the opinion that there is strong force in the positions of the customers.

The Committee has proffered some recommendations which when implemented by NERC, it is hoped the situation would be ameliorated. The recommendations are as follows:

1. Distribution Companies should be given operational and financial autonomy to engage in innovative strategies of financing efforts aimed at bridging the existing Metering gap provided the provisions relating to metering in MYTO 2 are not bridged.
2. In order to effectively erase backlog of meters, the Committee recommends the creation of a fund to adequately meter all unmetered customers. It is suggested that the Federal Government should provide an intervention fund estimated at N50 billion to close the metering gap.
3. Cases of criminality such as illegal distribution and sale of electricity without license as in Tudun Wada and Mopol Barracks in Abuja and Makurdi respectively, should be properly investigated and those found guilty, sanctioned according to law. Appropriate disciplinary measures should be instituted by the Discos supported by

NERC to ensure that all forms of indiscipline being exhibited by some staff of the Discos are eliminated.

4. NERC should intensify its monitoring and enforcement apparatus to ensure proper implementation of existing regulations on metering, billing and cash collection as well as overall improvement in customer service to eliminate the culture of impunity prevailing at present in the electricity sector. The era of arbitrariness should as a matter of urgency, be replaced with that of objectivity and decorum in dealing with electricity customer issues and complaints.
5. NERC should encourage Discos to undertake capacity building and training of their staff particularly in area of customer relation in order to promote better customer service in all Discos.
6. In view of the findings by the Committee of the existence of obligatory metering provisions (Condition 41) in the Terms and Conditions of Distribution Licensees, the Committee hereby emphasizes that NERC should enforce the aspects that relate to metering all customers at the Discos cost. This is coterminous with the principle that meters are the property of the Distribution Companies and hence they should concomitantly bear the cost. The Committee is however, apprehensive at this target of bridging the gap giving the huge metering crises. The Committee recommends a phased but consistent approach in order not to create unrealistic expectations.
7. The issue of illegal consumers of electricity needs to be addressed in order to reduce the tendency of the Discos to continuing with the controversial practice of giving legal customers estimated bills.

8. The Committee further recommends that there should be aggressive, comprehensive and simultaneous phased metering of all distribution and point load transformers in the network.
9. NERC should evolve a regulation that would ultimately make it obligatory for Discos to meter their distribution transformers for adequate energy accounting and equity.
10. The Committee equally recommends that NERC should encourage the production of meters locally as a long term measure to eliminate all forms of shortage in metering in Nigeria. Indigenous Companies should be encouraged to partner with foreign meter producers to set up factories in Nigeria for the manufacturing of all forms of meters and not just the present practice of assembling Completely-Knocked-Down (CKD) parts.

Finally, this report has sadly called attention to the very low utilization of electricity in Nigeria. This is a reflection of the non-industrial nature of the Nigerian economy. For instance industrial usage is only an insignificant 0.71% of the low customer base of 5,172,979 customers in a country of about 160 Million people! Government and all its institutions must take all necessary measures to redress this state of affairs by any means necessary including waging a sustained and relentless war against graft and all forms of inefficiencies.

CHAPTER ONE

1.0 INTRODUCTION

1.1 A Brief Background of Metering of Electricity in Nigeria

The history of electricity metering in Nigeria is directly linked with the history of electricity development in Nigeria. The production and delivery of electricity to consumers on a commercial basis began in the country in 1896. Electricity generation and distribution were largely decentralized until 1951 when the Electricity Corporation of Nigeria (ECN) was established as a central body responsible for electricity supply. The first 132KV line linking Lagos to Ibadan Power station was constructed in 1962.

In 1962, the Niger Dams Authority (NDA) was established with a mandate to develop hydro power stations. The ECN and NDA were later merged in 1972 to form the National Electric Power Authority (NEPA) by virtue of the NEPA Act¹. The National Electric Power Authority operated a vertical integrated structure in carrying out its primary functions of generation, transmission, distribution and marketing of electricity in Nigeria. This state of affairs persisted until 2006 when NEPA was unbundled into 18 successor companies in line with the power sector reform programme of the Federal Government of Nigeria².

The procurement of meters for all the aspects of the electricity business in Nigeria was centrally coordinated at the Head Office of NEPA where requests were received and treated from a central pool. Metering instruments including Grid Meters for

¹ See NEPA ACT cap 256, Laws of the Federation of Nigeria, 1990

² See Electric Power Sector Reform Act, No. 6 of 2005

Generation/Transmission, Transmission/Distribution and Distribution interconnecting points were procured and deployed to all the stations centrally. The distribution companies were saddled with the responsibility of allocating and installing the meters at the premises of customers. A Grid Metering group was responsible for installation and maintenance of Grid meters.

There are three Meter Test Stations located in Lagos, Kaduna and Port Harcourt. These stations are primarily responsible for calibration and repair of all the types of meters in the network. They also certify the integrity of the meters before deployment and installation. It should however be noted that with the implementation of Power Sector Reform Act 2005 and the unbundling of PHCN, the processes involved in procurement and deployment of metering systems are also being restructured. Some form of autonomy has been achieved as the Distribution Companies can now procure and install meters independently.

In view of the centralized administration of metering in PHCN, and the attendant inefficiencies in delivering meters to customers, there is a great deal of dissatisfaction among customers across the country on billing and metering generally. Electricity Customers at different fora have complained about exploitation and corrupt tendencies by the distribution companies in their metering, billing and collection of charges. The incidence of estimated billing has become rife and cases of customers who have paid for meters without receiving them after waiting for an unreasonably long period of time on end abound. . This has great adverse effect on the image and public rating of the distribution companies which are variously described as inefficient, negligent, unresponsive, corrupt

and lackadaisical. Therefore, there is the need to address issues relating to metering of electricity in order to create an equitable electricity industry where the companies get value for their services and the customers pay only for electricity consumed.

1.2 The Role of NERC in Metering

The Nigerian Electricity Regulatory Commission (NERC) was set up pursuant to section 31 of Electricity Power Sector Reform Act 2005 with the critical objectives of ensuring, among other things, that the prices charged by the licensees are fair to consumers, sufficient to allow the licensees to finance their activities and to allow for reasonable earnings for efficient operation³. To actualize its mandate, NERC has formulated regulations on deployment of meters⁴

1.3 The Metering Code

The Metering Code is a guide which specifies the minimum technical, design and operational criteria for all commercial metering, data collection equipment and the associated procedures as required for the operation of an efficient electricity market. The Nigerian Metering Code contains sections dealing with Grid Metering Code (GMC), which 'sets out or refers to the requirements for the metering of the Participant's Connection Points on the Transmission or Distribution Network'; and Distribution Metering Code (DMC) that 'specifies the technical and operational criteria, including the procedures to be complied with by the Distributor, in carrying out its obligation to provide metering services.

NERC administers the Metering Code through a standing Metering Panel made up of

³ See section 32(1)d, *ibid*

⁴ See the Metering Code issued by NERC on.....This is discussed more extensively in the following segment of this Report.

Industry participants from Generation, Transmission and Distribution as well as Manufacturers of electricity meters. The Panel holds consultations with other stakeholders and provides advice to NERC on regulations in metering issues. The Panel also provides recommendations for updating the Metering Code in line with prevailing circumstances and technological changes.

1.4 Regulations on Metering

The terms and conditions of licenses issued to distribution companies contain specific provisions on metering. Condition 41(1) stipulates:

*“Electricity supply to a customer should be effected with an **operational meter** first being installed”.*

Condition 41(6) provides that *“the Licensee shall be responsible for installing electrical energy meters **at its own expense** and shall be the owner of all installed metering equipment”.*

The Condition further stipulates that where the meter malfunctions and it is proven that the customer is not at fault, the Licensee shall bear the cost of repairing or replacing the meter.

The Commission also issued a Regulation on Metering, Billing and Cash Collections⁵ which provides for standard practices to be adopted in dealing with customer metering. It provides guidance on how customer meters should be read and bills prepared for electricity

⁵ See Nigerian Electricity Regulatory Commission’s Meter Reading, Billing, Cash Collections and Credit Management for Electricity Supplies Regulations, 2007, Official Gazette, No 104, Vol 94

usage. In situations where meters become faulty, it provides the modality for repairs and where necessary, replacement. The Regulation also provides guidelines on how estimates should be arrived at by the Distribution Companies where a customer's meter is either faulty or is inaccessible by the Distribution Company.

1.5 THE METERING INQUIRY COMMITTEE

According to the Chairman of the Nigerian Electricity Regulatory Commission, the Commission has been inundated with complaints bordering on dissatisfaction and anger over poor quality of service by the Discos. The major complaints of the consuming public center on experience of customers with regards to metering, billing and customer care⁶. The inadequate supply of power in Nigeria is probably the most important technical issue but is not the priority social or human issue. Hence the Commission in its effort to further gather data and information on the root cause of the endemic metering gap, decided to set up an independent Metering Inquiry Committee to carry out a comprehensive investigation of the metering cases and other related matters in Nigeria.

1.6 Membership of the Committee

The membership of the Committee was drawn from different backgrounds comprising Legal, Engineering, Finance, Business, Civil Society and Consumer Advocacy, and PHCN staff.

⁶ See Remarks by Dr Sam Amadi on the Commencement of the Series of Public Hearings of the Committee to Conduct Public Inquiry on Metering in the Nigerian Electricity Supply at Ikeja on the 6th of March 2012,

Members of the Committee are as follows:

- | | | |
|----------------------------------|---|--------------------------|
| 1. Bamidele Aturu | - | Chairman |
| 2. Alhaji Iro Dan Fuloti | - | Member |
| 3. Engr. (Dr.) Solomon Nyagba | - | Member |
| 4. Engr. Isa Usman Emoabino | - | Member |
| 5. Mr. Juddy A. Okere | - | Member |
| 6. Chief Makanjuola Ganiyu Jimoh | - | Member |
| 7. Dr. Abba Ibrahim | - | Member |
| 8. Engr. (Mrs.) Mary Awolokun | - | Member |
| 9. Engr. Cornelius Ugorji | - | Member |
| 10. Engr. Emmanuel Ezekwere | - | Member/Technical Support |
| 11. Mr. James Ewah | - | Member |
| 12. Mr. Abubakar Shuaibu | - | Member |
| 13. Mr. Shittu H. Shaibu | - | Secretary |

Secretariat support for the assignment was provided by the following staff of NERC

- | | | |
|-------------------------|---|-----------------------|
| 14. Barr. Ntui Columbus | - | (Secretariat Support) |
| 15. Mr. Pius David Bako | | |
| 16. Engr. Mohammed Imam | | |
| 17. Miss Ramatu Kaza | | |

The Terms of Reference for the assignment of the Committee were as follows:

1. Determine the extent of metering of customers in the industry
2. Determine the factors which delay the procurement and installation of meters in accordance with rules and regulations in the industry and the deployment plans
3. Determine the practices of metering of customers including corrupt, exploitative and illegal practices of staff of the DISCOs
4. Suggest how NERC can ensure effective and quick metering of customers in the industry
5. Suggest possible remedial actions to deal with lapses and corrupt practices with regards to metering and customer care in the industry
6. Suggest a framework for effective implementation and monitoring of metering and billing activities post MYTO 2.

The Committee of Public Inquiry on Metering in the Nigerian Electricity Supply Industry (NESI) was inaugurated by the Chairman/Chief Executive Officer of the Nigerian Electricity Regulatory Commission, Dr. Sam Amadi, on the 21st of December 2011, in the Hearing Room of the Commission. The Committee held its inaugural meeting at the same venue to articulate the strategies for the implementation of the assignment.

Reference:

1. Power Sector Reform Act 2005
2. NERC Metering Code
3. Terms and Conditions of License issued to Discos by NERC
4. Article titled 'Nigeria: Can NERC Rid Power Sector of Corrupt PHCN Officials?' accessed from <http://powersectorworld.blogspot.com/2012/05/nigeria-can-nerc-rid-power-sector-of.html>

CHAPTER TWO

2.0 UNDERSTANDING BEST PRACTICES IN METERING

2.1 What is an Electricity Meter?

The electricity meter or energy meter can be described as a device that is designed to quantify or measure the volume of electricity consumed at a given point in time by an electrically powered device, residence, commercial premises or an industrial complex. Typically, electricity meters are calibrated in billing units of kilowatt hour [kWh]. The electricity meters are read periodically to establish billing cycles and energy used during the cycle.

As stated above the most common unit of measurement on the electricity meter is the kilowatt hour [kWh], which is equal to the amount of energy used by a load of one kilowatt over a period of one hour, or 3,600,000 joules. It should be noted that in addition to metering based on the volume of energy used, there are other forms of metering. These include ampere-hour meters, which measure the amount of charge (coulombs). Other forms of meters only measured the length of time for which charge flowed without measuring the magnitude of voltage. These forms of meters are obsolete and no longer in operation.

The common types of meters in operation in most jurisdictions include but are not limited to the following:

2.2 Electromechanical Watt-Hour Meters

This type of meters operates by counting the revolutions of an aluminum disc, which rotates at a proportional speed to the power utilized. This presupposes that the revolution of the metering gearing is proportional to the energy used by the electricity customer. This type of meter comes in both single and three phases and is used in domestic and commercial premises. The meter is read manually by representatives of the distribution companies or the customers. In situations where the customer reads the meter, the reading must be forwarded to the power company as expeditiously as possible. The power company will periodically send a representative to cross-check what was supplied by the customer as the reading in addition to carrying out some basic maintenance on the meter.

2.3 Electronic meters

These are meters that display the energy utilized on an LCD or LED display platform. They also have the capabilities of transmitting readings to remote places. Other parameters of the load and supply such as maximum demand, power factor and reactive power used etc., can also be measured by the electronic meters. They are also capable of supporting time-of-day billing, such as recording the volume of energy used during on-peak and off-peak hours.

Presently, Electronic meters use low-power radio, GSM, GPRS, Bluetooth, as well as other telecommunication technologies for communication purposes. The meters have capabilities of storing entire usage profiles with time of event and can be relayed at the click of a button. The information stored with other profiles can equally assist the utility in determining the load requirements of the customer with substantial degree of accuracy. This load profile data is processed at the utilities for billing and planning purposes.

2.4 Smart Metering

The evolution of smart meters is to further improve upon the capabilities of electronic meters beyond simple Automatic Meter Reading. Smart meters now offer additional functionalities such as prepayment and others which help distribution companies to effectively monitor the consumption pattern of their customers from remote location. In the case of electricity consumption, smart metering focuses on providing the utility (and ultimately the consumer) with time-differentiated energy use. It is capable of providing real time information on all activities relating to issues like power outages, power quality monitoring and in some cases metering tampering. Differential prices can be introduced with the use of smart meters.

2.5 Prepayment Meters

Electricity distribution companies typically provide services to their customers on a post payment basis. This involves the billing of customers for the volume of energy used after such services have been provided and this is done by billing the customers for the amount of energy used in the previous month or quarter. There are however, situations where the

electricity companies encounter some difficulties in revenue collection from customers, in such cases prepayment meters are installed. This compels the customer to make advance payment before enjoying electricity supply. Electricity supply to the customer automatically is disconnected when the units bought are exhausted. Note that in contrast for smart metering with prepayment, functionality, reconnection or disconnection is done remotely over two-way communications through software instructions from the utility.

Prepayment systems are being experimented all around the world especially in developing countries where cash collection by electricity companies has presented a major challenge. In countries like Nigeria, South Africa, Sudan and Northern Ireland the prepayment systems deployed are recharged by entering unique, encoded twenty digit number using keypads. The numbers known as tokens are produced cheaply and can easily be made available to customers by the electricity companies in whatever amount they may desire. There are groups evolving all around the world which promote common standards for prepayment meters manufacturers, such as the Standard Transfer Specification (STS) association which is based in South Africa. STS standards are in use in many countries where prepayment metering is becoming the vogue.

A second prepayment meter vending technology uses smart cards and requires the user to manually present the card for recharging. A key advantage of this methodology is that the smart card can be made to carry feedback information to the utility at the point of recharging. Its main drawback is the manual means of data transportation which impedes remote vending.

2.6 Ownership of Meters

The issue of ownership of meters is a contentious one in less developed markets where customers oftentimes argue that they pay for such meters and so they are the owners of the meters. In Nigeria, PHCN owns all the meters installed in customer's premises. It has however been discovered that with the deregulation of electricity supply markets in many countries such as the United Kingdom, ownership of an electricity meter has become a bit unclear. This is because aspects of distribution business relating to billing and collection may be outsourced and the meter may be the property of the meter Operator, electricity distributor, and the retailer or even the customer in cases of large users of electricity. Thus the same person may read gas, water and electricity meters at the same time. It is clear from the above that the company responsible for reading the meter may not always be the company which owns it.

Reference:

1. Metering Best Practices 'A Guide to Achieving Utility Resource Efficiency' Prepared by Pacific Northwest National Laboratory for the Federal Energy Management Program, U.S. Department of Energy, 2011
2. 'Electricity Meter' accessed from http://en.wikipedia.org/wiki/Electricity_meter

CHAPTER THREE

3.0 Procedures And Scope

3.1 Meetings: Shortly after the inauguration of the Metering Inquiry Committee by the Commission on Wednesday 21st December, 2011, the Committee proceeded to hold a brief meeting in order to prepare an agenda and map out strategies for the daunting task ahead. Far-reaching decisions were taken on the mode, procedure and modalities for conducting a diagnosis of the state of metering in the Nigerian Electricity Supply Industry (NESI) with a view to identifying endemic issues plaguing the sector and proffer solutions accordingly.

Critical among the decisions taken at the above meeting included the under listed:

- i. Preliminary industry Data and Questionnaire to be administered to the 11 DISCOs
- ii. Letters to the Chief Executive Officers of the 11 DISCOS
- iii. Dates of meetings and venues for the Public Hearing/Inquiry to be held in the Six Geo-Political Zones of the country.

The Committee decided to conduct public hearings in all the 6 geo-political zones of Nigeria in order to interact with all the stakeholders in the industry with a view to understanding the general and peculiar metering issues of the different zones. Eight different cities were chosen for this purpose to ensure representativeness of our findings.

3.2 Questionnaire:- The Committee designed an articulated questionnaire aimed at assisting it to obtain relevant information and data in respect of metering and the industry metering gaps as well as processes and procedures for acquiring electricity meters from all the DISCOS. (See Appendix for sample questionnaire).

The questionnaire was forwarded to all the 11 DISCOS and a time-frame given to them to return same to the Committee. All the DISCOS submitted their responses to the Committee as directed. (See Appendix for the responses to the questionnaire by the DISCOs)

3.3 Public Hearings: Adverts and Radio announcements were published in National Dailies and Radio Houses sensitizing stakeholders as to the various venues and dates designated for Public Hearings in the Six Geo-Political Zones and inviting them to participate and make submissions and memoranda to the Committee prior or during its public hearings. Invitation letters were also sent to some identified customers of the Distribution Companies to attend the public hearings. The advertised dates for the Public hearing were as follows:

S/N	ZONE	VENUES/LOCATIONS	DAYS/DATES
1.	SOUTH-WEST	AIRPORT HOTEL, IKEJA, LAGOS, LAGOS STATE	TUESDAY, 6 TH MARCH, 2012
2.		LAGOS CITY HALL, LAGOS, ISLAND, LAGOS STATE	THURSDAY, 8 TH MARCH 2012
3.	SOUTH-EAST	GOLDEN ROYALE HOTEL ENUGU, ENUGU STATE	TUESDAY, 13 TH MARCH, 2012

4.	SOUTH-SOUTH	CIVIC CENTRE PORT-HARCOURT, RIVERS STATE	THURSDAY, 15 TH MARCH, 2012
5.	NORTH-EAST	MUNA HOTEL, 80 UNIT GRA YOLA, ADAMAWA STATE	THURSDAY, 12 TH APRIL, 2012
6.	NORTH-WEST	UMARU MUSA YAR'ADUA COMPLEX, MURTALA SQUARE KADUNA, KADUNA STATE	THURSDAY, 19 TH APRIL, 2012
7.	NORTH-CENTRAL	BENUE HOTEL, MAKURDI, BENUE STATE	TUESDAY, 24 TH MARCH, 2012
8.	ABUJA	MERIT HOUSE, MAITAMA, ABUJA, FCT	THURSDAY, 26 TH APRIL, 2012

The public hearings in the eight locations in the Six Geo-Political Zones of the country cut across the 11 Distribution Companies (DISCOS). The Public Hearings afforded the Committee invaluable opportunity to interact with electricity stakeholders, consumers and ascertain perennial electricity problems encountered by the teeming public across the 11 DISCOS. (See Appendix adverts placed in various Newspapers)

Significantly, following the provision of a platform by the Committee for the CEOs to respond to some of the issues complained about, some lucky customers in attendance were promptly attended to and their challenges resolved during the public hearings.

The table below provides a summary of stakeholders who attended the public hearings and those who also made submissions/presentations:

Summary of Stakeholders Who Participated At The Public Hearings

Table 1.0

S/N	GEO-POLITICAL ZONES	DISCOS	VENUES/LOCATIONS	DAYS/DATES	TOTAL NO. OF PARTICIPANTS	TOTAL NO. WHO MADE SUBMISSIONS
1.	SOUTH-WEST	IKEJA	AIRPORT HOTEL, IKEJA, LAGOS STATE	TUESDAY, 6 TH MARCH, 2012	67	16
2.		EKO	LAGOS CITY HALL, LAGOS ISLAND, LAGOS STATE	THURSDAY, 8 TH MARCH 2012	71	23
3.	SOUTH-EAST	ENUGU	GOLDEN ROYALE HOTEL ENUGU, ENUGU STATE	TUESDAY, 13 TH MARCH, 2012	84	8
4.	SOUTH-SOUTH	PORT-HARCOURT	CIVIC CENTRE PORT-HARCOURT, RIVERS STATE	THURSDAY, 15 TH MARCH, 2012	20	2
5.	NORTH-EAST	YOLA	MUNA HOTEL, 80 UNIT GRA YOLA, ADAMAWA STATE	THURSDAY, 12 TH APRIL, 2012	84	12
6.	NORTH-WEST	KADUNA	UMARU MUSA YAR'ADUA COMPLEX, MURTALA SQUARE	THURSDAY, 19 TH APRIL, 2012	55	21

			KADUNA, KADUNA STATE			
7.	NORTH-CENTRAL	MAKURDI	BENUE HOTEL, MAKURDI, BENUE STATE	TUESDAY, 24 TH MARCH, 2012	96	35
8.	ABUJA	ABUJA	MERIT HOUSE, MAITAMA, ABUJA, FCT	THURSDAY, 26 TH APRIL, 2012	59	17

3.4 General Analysis: The Committee received returns from the DISCOS in line with the questionnaires earlier sent to them to furnish it with relevant information and Data on the DISCOS metering compliance as encapsulated in the Licensing terms and conditions of the Commission.

Find below analysis deduced from the DISCOS' submissions as requested by the Committee.

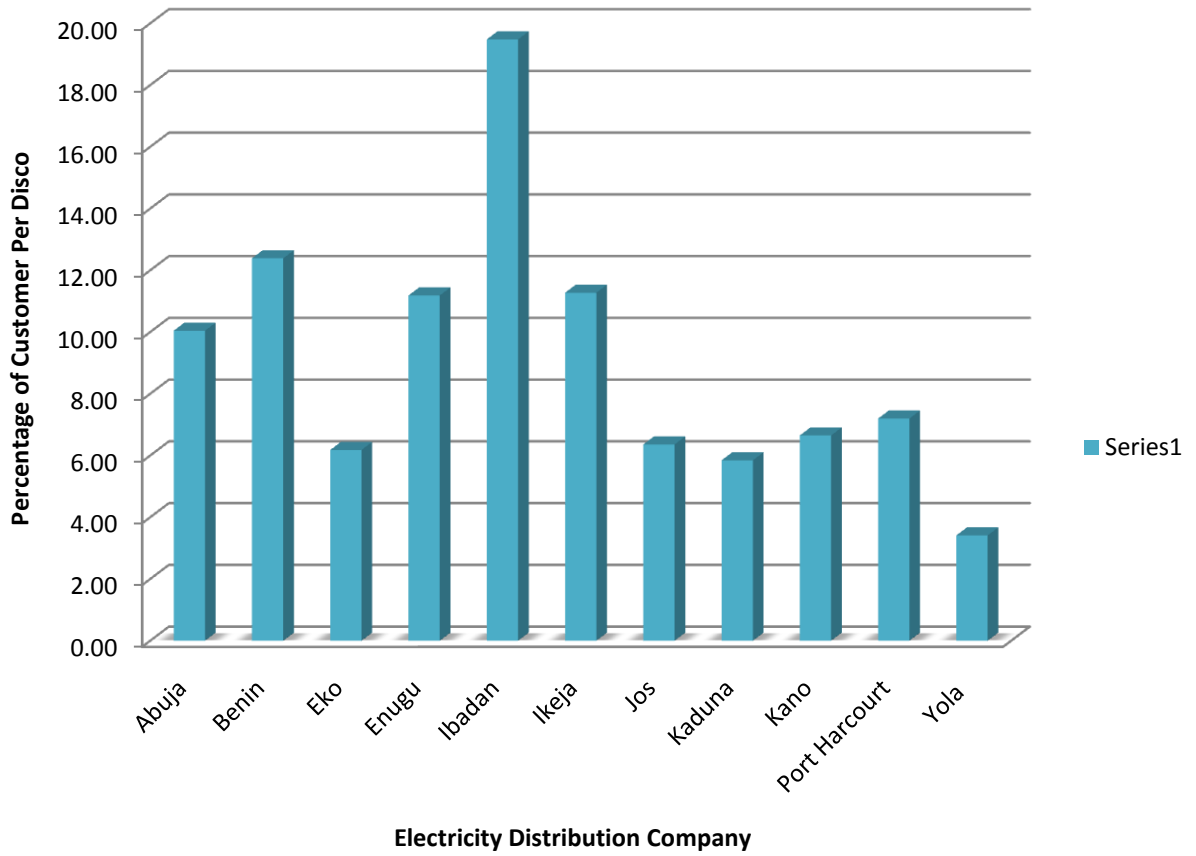
(The figures in the tables below are as supplied to the committee by the Discos. However, the committee observes that there are discrepancies in the figures but this will not materially affect the report).

1. Total Number of Customers in the DISCOS

Table 2.0

Total Number of Customers								
S/N	Distribution Company	Customer Class					Total No of Customer Per Disco	Industry Percentage (%)
		Industrial	Commercial	Residential	Govt.	Special		
1	Abuja	1,755	63,798	453,049	336	548	519,486	10.04
2	Benin	4,081	71,713	562,391	1,316	1,301	640,802	12.39
3	Eko	517	67,870	249,551	246	1,435	319,619	6.18
4	Enugu	4,016	78,249	494,478	1,056	766	578,565	11.18
5	Ibadan	2,208	102,576	900,861	1,351	647	1,007,643	19.48
6	Ikeja	1,078	124,075	455,867	455	1,582	583,057	11.27
7	Jos	2,642	56,657	258,608	10,440	507	328,854	6.36
8	Kaduna	131	68,904	225,148	4,600	3,498	302,281	5.84
9	Kano	1,008	69,018	273,431	418	72	343,947	6.65
10	Port Harcourt	882	57,927	308,381	1,220	3,820	372,230	7.20
11	Yola	17	14,490	160,142	1,720	126	176,495	3.41
Total Number of Customer by Class		18,335	775,277	4,341,907	23,158	14,302	5,172,979	100.00
% of Customers by Class		0.35%	14.99%	83.93%	0.45%	0.28%	100.00%	

Percentage of Customer base per Disco in the Electricity Supply Industry

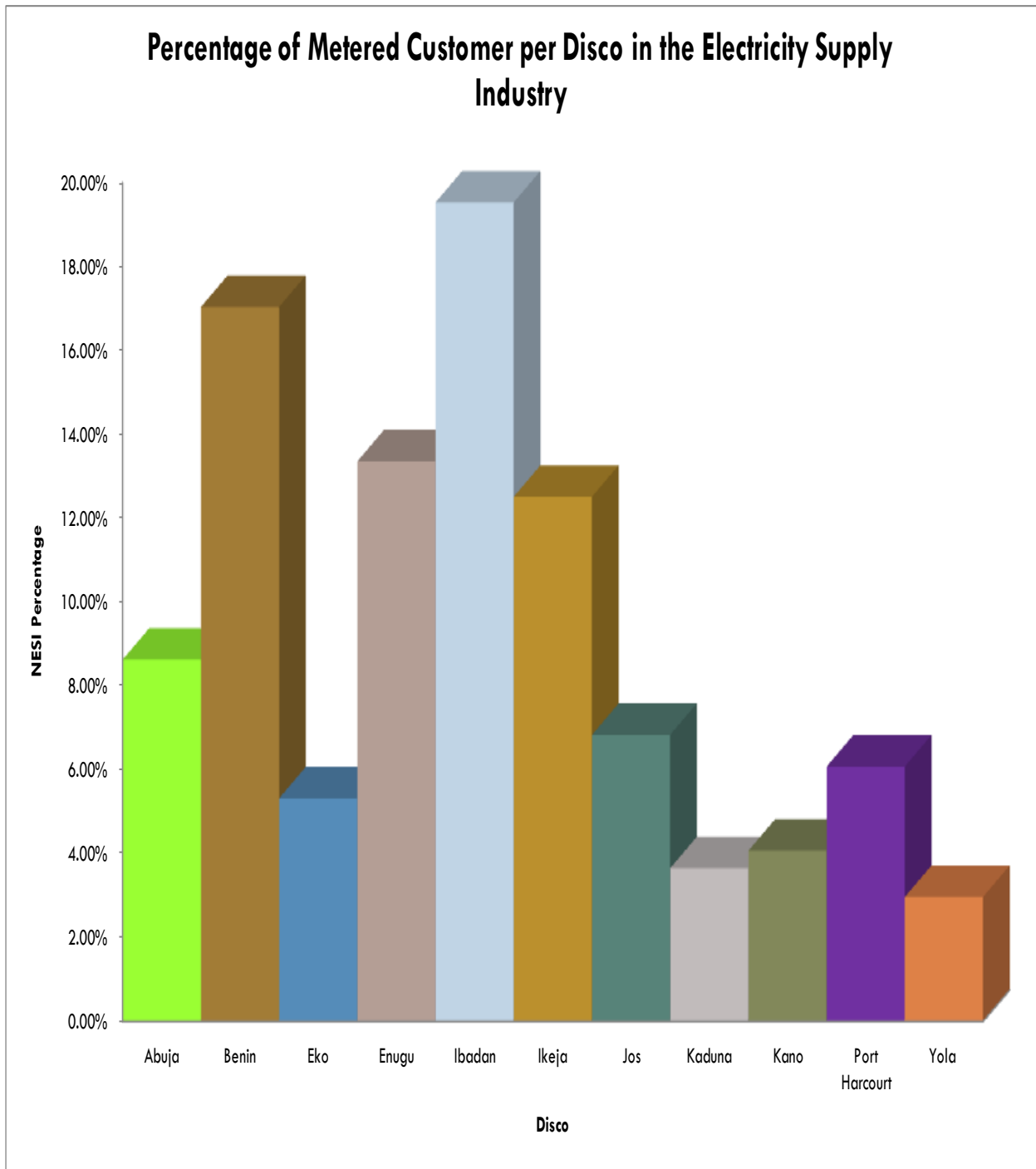


Graph 1.0

2. Number of Customers metered in the DISCOS

Table 3.0

Total Number of Metered Customers									
S/N	Distribution Company	Customer Class					Total	Percentage of Metered Customers	National Percentage Per Disco
		Industrial	Commercial	Residential	Govt.	Special			
1	Abuja	1,156	30,654	217,658	17	225	249,710	48.07	8.63%
2	Benin	3,156	65,627	422,384	891	969	493,027	76.94	17.04%
3	Eko	306	37,772	114,835	366	704	153,983	48.18	5.32%
4	Enugu	2,518	52,237	330,811	626	313	386,505	66.80	13.36%
5	Ibadan	1,200	56,157	507,010	500	327	565,194	56.09	19.53%
6	Ikeja	946	92,051	267,632	263	1,174	362,066	62.10	12.51%
7	Jos	2,642	46,757	140,828	7,073	462	197,762	60.14	6.83%
8	Kaduna	131	24,789	73,340	4,065	3,422	105,747	34.98	3.65%
9	Kano	1,250	23,286	92,763	467	95	117,861	34.27	4.07%
10	Port Harcourt	757	37,237	135,798	1,050	1,066	175,908	47.26	6.08%
11	Yola	12	7,835	77,047	970	74	85,938	48.69	2.97%
Total Number of Metered Customers		14,074	474,402	2,380,106	16,288	8,831	2,893,701		1.00
% of Metered Customers by Class		0.49%	16.39%	82.25%	0.56%	0.31%	100.00%		

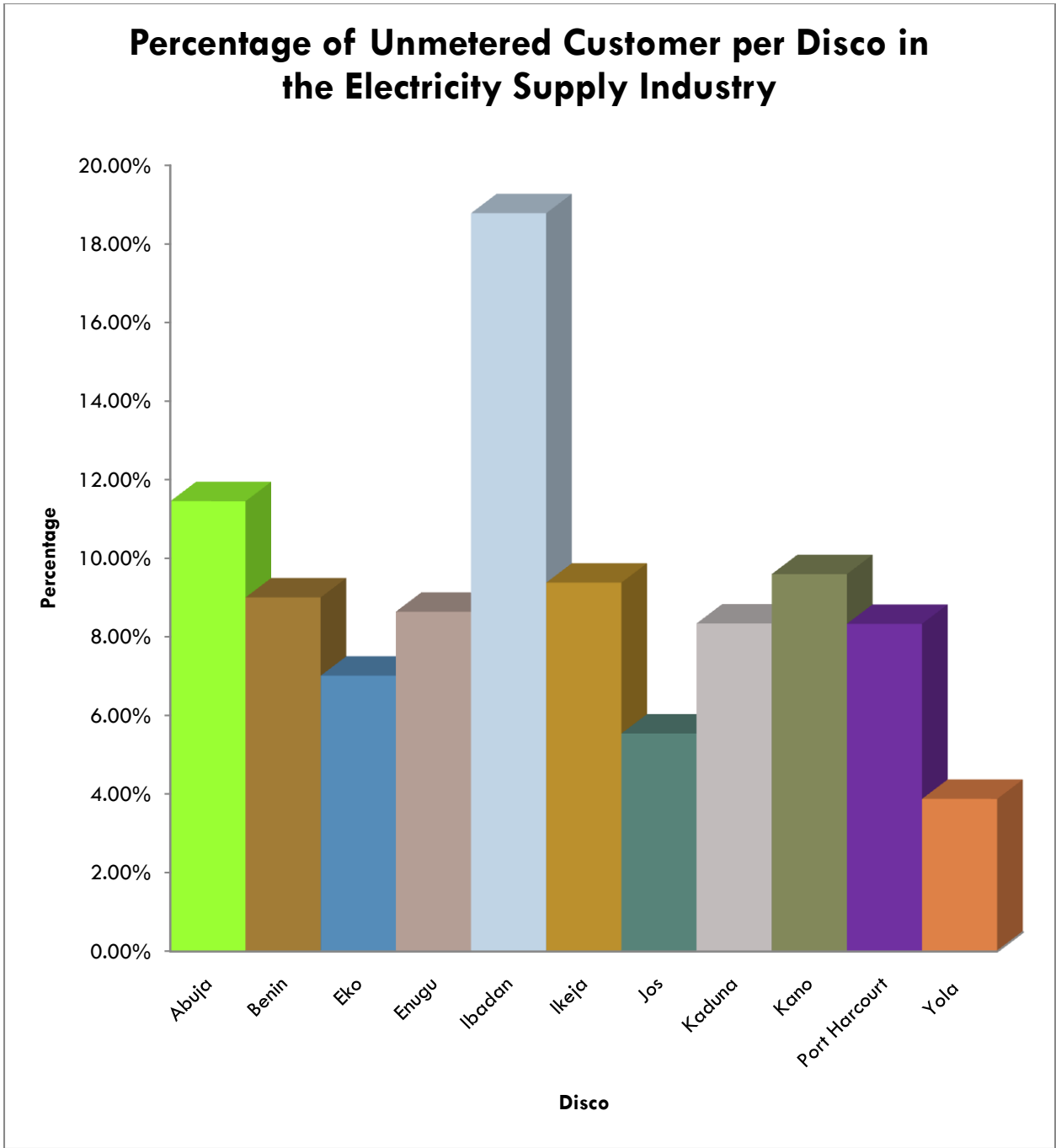


Graph 2.0

3. Number of Customers unmetered in the DISCOS

Table 4.0

Total Number of Non Meterd Customers									
S/N	Distribution Company	Customer Class					Total	% of Unmetered Customers	National % Per DisCo
		Industrial	Commercial	Residential	Govt.	Special			
1	Abuja	599	33,144	235,391	318	323	269,775	51.93	11.46%
2	Benin	2,336	34,845	174,226	465	259	212,131	33.10	9.01%
3	Eko	52	31,690	133,075	224	187	165,228	51.70	7.02%
4	Enugu	1,492	26,537	174,922	430	228	203,609	35.19	8.65%
5	Ibadan	1,008	46,419	393,851	751	320	442,349	43.90	18.78%
6	Ikeja	129	32,097	188,319	63	383	220,991	37.90	9.38%
7	Jos	0	8,796	118,377	3,367	45	130,585	39.71	5.54%
8	Kaduna	0	44,115	151,808	535	76	196,534	65.02	8.35%
9	Kano	0	45,284	180,786	10	6	226,086	65.73	9.60%
10	Port Harcourt	125	20,690	172,583	170	2,754	196,322	52.74	8.34%
11	Yola	5	7,155	83,473	750	52	91,435	51.81	3.88%
	Total	5,746	330,772	2,006,811	7,083	4,633	2,355,045		1.00
	% of Unmetered Customers by Class	0.24%	14.05%	85.21%	0.30%	0.20%	100.00%		

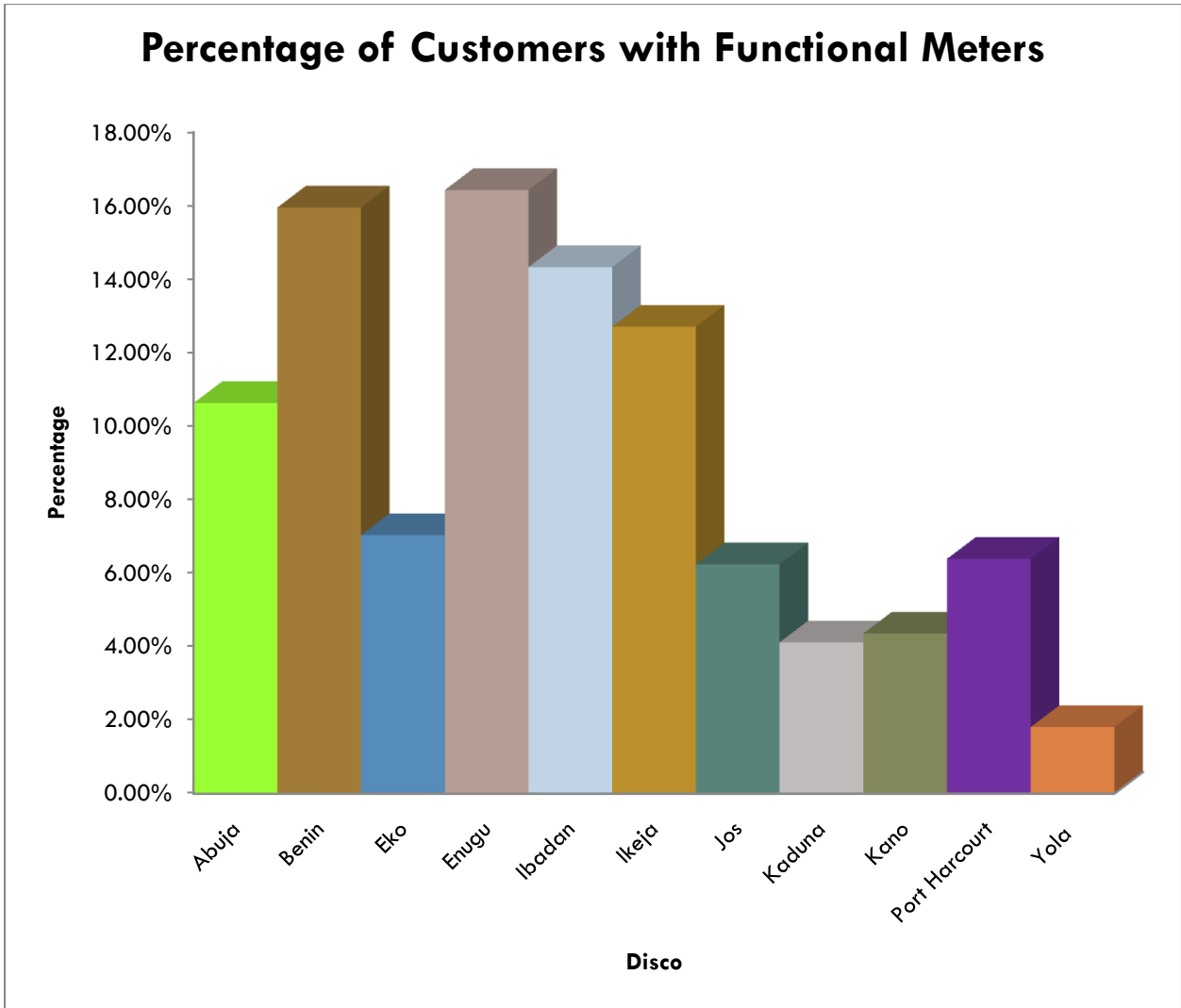


Graph 3.0

4. Number of Customers with functioning meters

Table 5.0

Total Number of Customers with Functional Meters									
S/N	Distribution Company	Customer Class					Total	% of Customers with Functional Meter	National Percentage Per DisCo
		Industrial	Commercial	Residential	Govt.	Special			
1	Abuja	1,053	30,654	217,658	18	225	249,608	48.05	10.63%
2	Benin	2,762	53,789	316,725	622	665	374,563	58.45	15.95%
3	Eko	52	31,690	133,075	224	187	165,228	51.70	7.04%
4	Enugu	2,420	51,942	330,201	607	557	385,727	66.67	16.43%
5	Ibadan	691	34,500	300,833	226	215	336,465	33.39	14.33%
6	Ikeja	1,054	71,720	224,425	194	1,026	298,419	51.18	12.71%
7	Jos	2,642	38,792	101,420	3,269	462	146,585	44.57	6.24%
8	Kaduna	129	22,765	66,457	3,974	3,367	96,692	31.99	4.12%
9	Kano	1,014	20,216	80,839	236	23	102,328	29.75	4.36%
10	Port Harcourt	692	28,783	118,967	687	907	150,036	40.31	6.39%
11	Yola	12	3,401	38,148	962	59	42,582	24.13	1.81%
	Total:	12,521	388,252	1,928,748	11,019	7,693	2,348,233		100.00%
	Functional Meters by Class	0.53%	16.53%	82.14%	0.47%	0.33%	100.00%		



Graph 4.0

5. Number of Customers with faulty meters

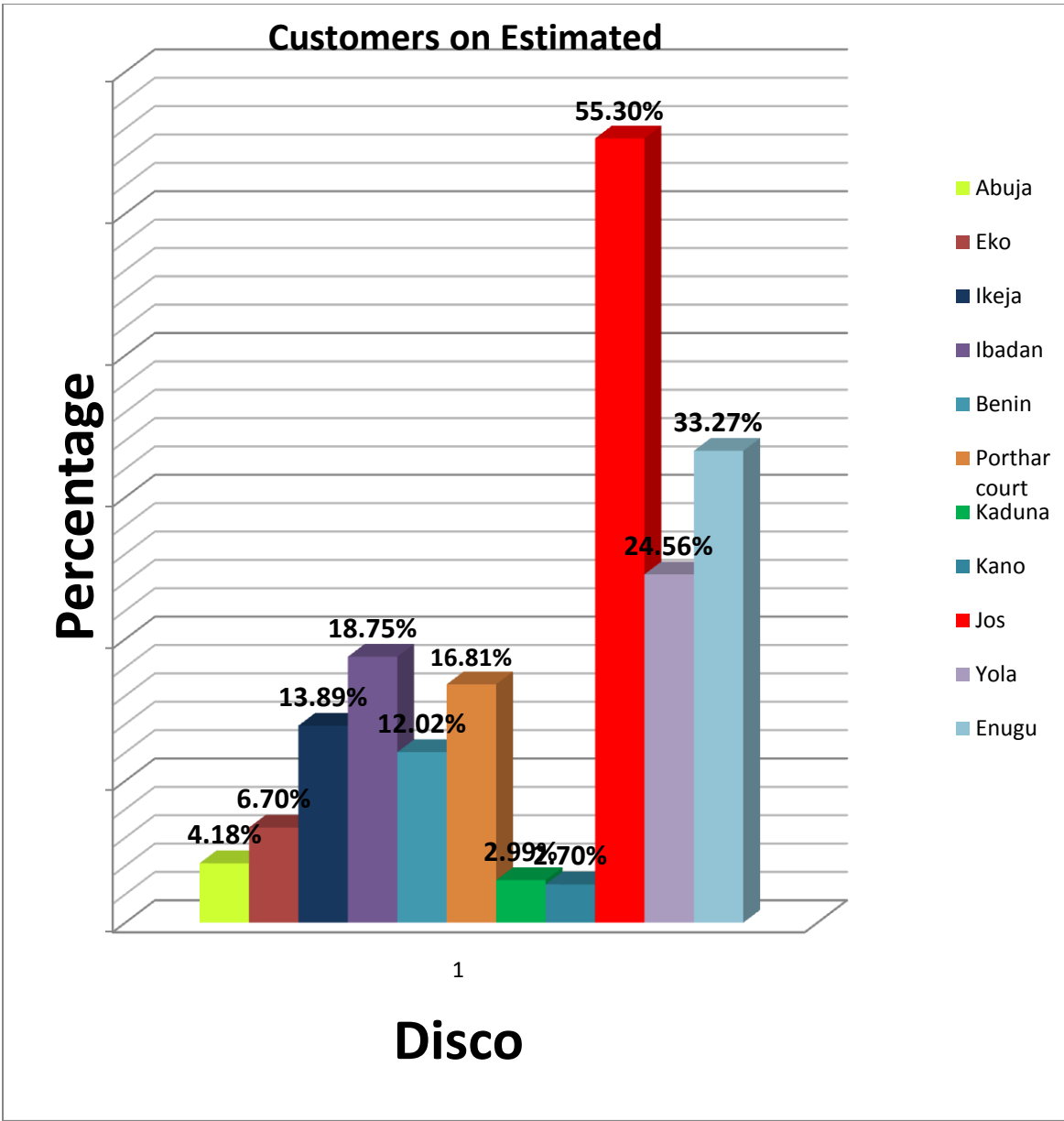
Table 5.0

Total Number of Customers with faulty Meters									
S/N	Disco	Customers Class					Total	Percentage of Customers with Faulty Meters	National percentage per Disco
		Industrial	Commercial	Residential	Government	Special			
1	Abuja	12	1,508	20,202	4	12	21,738	4.18%	3.10%
2	Eko	683	25,656	74,811	129	279	101,558	31.77%	14.48%
3	Ikeja	46	16,849	54,293	32	110	71,330	12.23%	10.17%
4	Ibadan	93	14,753	85,120	134	100	100,200	9.94%	14.29%
5	Benin	272	10,175	62,810	210	189	73,656	11.49%	10.50%
6	Portharcourt	130	8,454	16,831	368	154	25,937	6.97%	3.70%
7	Kaduna	2	2,014	6,883	91	55	9,045	2.99%	1.29%
8	Kano	236	3,070	11,528	231	72	15,137	2.70%	2.16%
9	Jos	-	15,138	34,392	1,411	236	51,177	15.57%	7.30%
10	Yola	-	4,434	38,899	8	15	43,356	24.57%	6.18%
11	Enugu	1,232	25,281	161,149	393	196	188,251	32.54%	26.84%
Total		2,706	127,332	566,918	3,011	1,418	701,385		100.00%
Percentage of Customers with Faulty meters		14.76%	15.68%	12.53%	13.05%	10.02%			

6. Number of customers on Estimated Billing

Table 6.0

S/N	Disco	Customer Class					Total	Percentage of customers on Estimated billing	National percentage per Disco
		Industrial	Commercial	Residential	Government	Special			
1	Abuja	12	1,508	20,198	4	12	21,734	4.18%	2.43%
2	Eko	83	4,539	16,727	18	60	21,427	6.70%	2.40%
3	Ikeja	98	17,906	62,849	39	99	80,991	13.89%	9.06%
4	Ibadan	12	19,609	169,076	110	104	188,911	18.75%	21.12%
5	Benin	1,299	16,280	59,006	324	118	77,027	12.02%	8.61%
6	Portharcourt	65	14,962	46,966	246	315	62,554	16.81%	6.99%
7	Kaduna	2	2,023	6,877	91	55	9,048	2.99%	1.01%
8	Kano	236	3,068	11,527	231	72	15,134	2.70%	1.69%
9	Jos	29	47,237	133,862	591	43	181,762	55.30%	20.32%
10	Yola		4,434	38,889	8	15	43,346	24.56%	4.85%
11	Enugu	1,374	26,197	164,261	441	217	192,490	33.27%	21.52%
Total:		1,374	26,197	164,261	441	217	894,424		100.00%
Percentage of customers with Functional Meters									



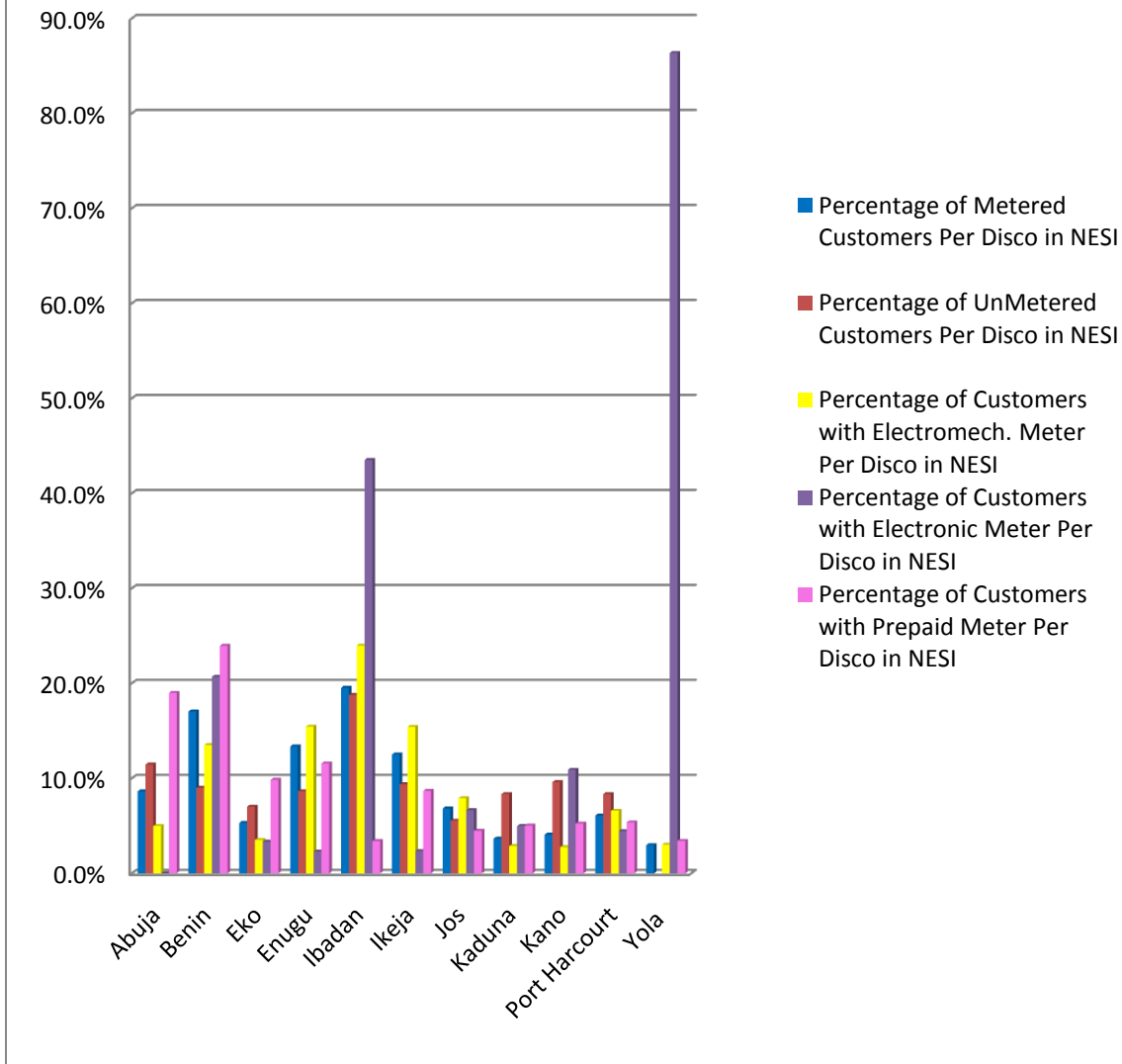
Graph 5.0

GENERAL SUMMARY OF CUSTOMERS IN THE NIGERIAN ELECTRICITY SUPPLY INDUSTRY

Table 7.0

S/N	Distribution Company	Metering Coverage in the Nigerian Electricity Supply Industry (NESI)								
		Customer Number	Metered Customers	Unmetered Customers	Electro-mechanical Metered	Electronic Metered	Prepaid Metered	Functional Meters	Faulty Meters	Customers on Estimated Billing
1	Abuja	519,486	249,710	269,775	92,181	0	157,529	249,608	21,734	21,734
2	Benin	640,802	493,027	212,131	249,811	44,566	198,650	374,563	73,672	77,127
3	Eko	319,619	153,983	165,228	65,109	7,156	81,718	165,228	101,558	21,427
4	Enugu	578,565	386,505	203,609	285,616	4,944	95,945	385,727	188,251	206,373
5	Ibadan	1,007,643	565,194	442,349	443,268	93,727	28,199	336,465	100,600	188,961
6	Ikeja	583,057	362,066	220,991	285,004	5,037	72,025	298,419	71,330	80,991
7	Jos	328,854	197,762	130,585	146,267	14,318	37,177	146,585	51,177	181,762
8	Kaduna	302,281	105,747	196,534	53,283	10,745	41,719	96,692	9,055	9,055
9	Kano	343,947	117,861	226,086	50,908	23,455	43,498	102,328	15,137	15,135
10	Port Harcourt	372,230	175,908	196,322	121,848	9,571	44,489	150,036	25,877	62,554
11	Yola	176,495	85,938	91,435	55,702	1,860	28,376	42,582	43,356	43,356
Total		5,172,979	2,893,701	2,355,045	1,848,997	215,379	829,325	2,348,233	701,747	908,475
% of Metered Customers			55.94%	45.53%	35.74%	4.16%	16.03%	45.39%	13.57%	

Summary of Metering In the NESI



Graph 6.0

CHAPTER FOUR

4.0 FINDINGS

In furtherance of the Terms of Reference, the Committee embarked on a fact finding mission to the six (6) geo-political zones of the country in order to ascertain facts relating to metering problems in the electricity industry. At the end of the exercise, the Committee came out with the following findings based strictly on the conditions stipulated in its Terms of Reference

4.1 Determine the extent of Metering of Customers in the Electricity Industry

The Committee's investigations based on the questionnaires administered to all the 11 Chief Executive Officers of the Distribution Companies licensed by the Nigerian Electricity Regulatory Commission, has revealed that the total number of customers captured in the records of operators of the Nigerian Electricity Supply Industry is **5,172,979**. This represents **18.65%** of Nigeria's total households put at 28,900,492 as provided by records from the National Bureau of Statistics in 2006⁷. This record however, does not include those enjoying electricity illegally who are not registered by the Discos, known as '**illegal consumers**'.

The number of illegal consumers according to all the Discos is quite high and very difficult to capture, however they claim to be doing their best and that as soon as they discover any illegal consumer they are immediately captured in their billing records.

⁷ The Committee regrets that this is the latest figure available for total households in Nigeria.

The data provided also indicated that out of the number of customers registered, **2,893,701 or 55.94%** were metered, while **2,355,045 or 45.53%** were unmetered. The Committee however discovered that out of the total number of customers metered about **701,385 or 22%** of the meters were faulty.

The implication of the analysis above is that at present a total of **2,956,069 or 54.83%** of all the customers registered are not metered at all or have no functional meters. On the average therefore only about **2,434,541** or a minute **8.42%** of the total households in Nigeria are currently being billed correctly by all the Discos if a household is used as our metering index. The remaining registered customers are therefore at the mercy of estimated billing. This development has created a wide gap in effective billing which calls for emergency response. The details of the different categories of customers and types of meters used are provided in Table A.

4.2 Determine the factors which delay the procurement and installation of meters in accordance with rules and regulations in the industry and deployment plans.

Metering of customers is the responsibility of licensees in this case, the Distribution Licensees, that is, the Distribution Companies. **Condition 41 of the Licence Terms and Conditions issued by the Nigerian Electricity Regulatory Commission obligates licensee to install electrical energy meters at the premises of its customers at its own expense. Being the owners of the meters, licensees are required to maintain, repair any damage or malfunction or change the meter as quickly as possible at their own expense.** The

Distribution Companies in the country have developed inertia in carrying out this all important responsibility giving various reasons.

i. Inadequate Funding

Virtually all the CEOs of the Distribution Companies (DISCOs) complained of lack of funds as a major constraint that has impeded their capacity to embark on massive procurement and installation of Meters. An average of about **N5 Billion** per DISCO was estimated by each of the CEO as the required amount that would enable them complete the programme of metering of every customer in their various companies.

However, the Committee considered the excuse of lack of funds untenable for obvious reasons:

- i. The Committee observed in the course of the inquiry that the DISCOs had meters in stock but failed and /or refused to supply and install them accordingly.
- ii. It was further established that the CEOs were responsible for the inefficiency and unaccountability that permeate the system. For instance the monies for meters are paid through draft by customers to the CEOs and there is no feedback as to whether they get the meter or not and how long the customer stays before getting meter.
- iii. It was discovered that in most of the DISCOs even though meters were in stock, customers existed who had paid for years and yet were not supplied any. This was confirmed when some customers immediately presented

receipts of payment upon the declaration of some of the CEOs of their readiness to meter within a week, those customers with evidence of payment. With this revelation, it shows that meters are not as scarce as the CEOs widely alleged.

- The Committee was informed that due to persistent clamour for funds by DISCOs for the purpose of procuring meters, NERC gave the sum of N2.9 Billion in MYTO 1 as subsidy to the DISCOs to make meters available for customers. Although the Committee was informed that the CEOs of the DISCOs are yet to fully account for the funds, yet we found that their customers have remained largely unmetered. There are also evidences of some Discos refusing customers' Prepayments for meters especially prepayments meters.

iv. Absence of Vending Infrastructure:

The Distribution Utilities cited absence or inadequate vending infrastructure as one of the major obstacles militating against the deployment of Pre Paid Meters in their Distribution Companies. According to them, their metering plan was in stages and since some areas lacked the vending infrastructure, meters could not be deployed.

The Committee was not satisfied with the explanations offered by the DISCOs. Vending infrastructure, it was observed, simply comprises software built into a PPM Master station which automatically allows for vending often on vouchers or on electronic media. Vending in itself was the capability of a point of sale device to generate the prepaid token and

conclude the associated prepayment transaction. It is therefore strange to procure prepaid meters independent of a vending infrastructure.

There was however a consensus on the apparent need for universal vending platform which would afford customers the opportunity to purchase electricity vending vouchers uniformly in their various zones as an interim measure and eventually, all over the country as is the practice in the telecommunications industry.

v. Lack of Autonomy and Governmental Interference

The Distribution Companies in the six geo-political zones also blamed their inability to supply meters to customers on undue government interference and lack of financial autonomy. This explanation was made following the Committee's inquiry on why customers who have paid for meters were still placed on estimated billing. They hinted that PHCN operated a centralised administrative structure and hence monies collected from customers for metering purposes were transmitted to headquarters in Abuja for disbursement. According to them, more often than not the priorities of the headquarters were at variance with those of the Discos. Therefore, funds earmarked for metering purposes were not usually used by the Headquarters to expeditiously procure meters for the Discos, leaving the metering gap to persist.

These assertions were supported with some Circulars from the headquarters giving directives to the zones. For instance, the Committee was furnished with a memo dated 13th of October, 2009 from the PHCN Corporate Headquarters to all the Discos on the new

service charges and charges applicable to projects executed by ‘prospective customers’⁸. This memo specifically provided fees referred to as Connection Fees to be paid by customers before any meter could be installed at their premises.

Lack of autonomy was also confirmed in the method of awarding Contracts for the procurement of PPM meters. The Committee was informed that a major Contract for the procurement of PPMs for all the DISCOs was centrally awarded by the Headquarters to a firm which they claimed lacked the capacity to perform the service. It was alleged that by the terms of the Contract, the firm was engaged to install PPMs in about 22 states of the federation and that the Contract was crafted without an exit clause for both parties even in cases of non-performance by the Contractor. In Ikeja for instance, the CEO stated that the Company was only able to install 16, 332 meters before the Contract was terminated by the PHCN Headquarters. This, according to the allegation, was one of such Contracts foisted on the DISCOs by the Headquarters. The Contract has however become a subject of litigation and we say no more on it and on the allegations.

Interesting as the above assertions seemed, critical issues that arose for the Committee’s discussion was ownership of the meter and whether it is the customer’s responsibility to pay for even the widely touted connection fees.

In all the DISCOs, the CEOs were in agreement in ascribing the ownership of the meters to the DISCOs. This would appear to be in tandem with best practice and at any rate conforms to the provisions of the licence issued by the Regulator to the DISCOs.

⁸ See Circular dated 13th October 2009, REF/ PHCN/273D/1A.18/1505/2009

Condition 41 of the licence mandates the DISCO to install electrical energy meters at its own expense and ascribes ownership of all the metering equipment to the DISCO. With this clarification, further dwelling on the issue would only amount to an academic exercise.

However, the continuous collection from customers of different sums ranging from N25, 000 to N55, 000 for single and three phase meters as connection fees negates the provisions of Condition 41 (6) of the licence issued by NERC to the DISCOs. By this provision, the responsibility of installing and maintaining a meter as well as connecting a customer to electricity is solely that of the DISCOs. Furthermore, the Committee noted that the Capital Expenditure in MYTO 2 covers all capital costs which include metering and hence no form of payment is expected to be made again by the existing customers. The charges for New Connections will however be allowed subject to the approval of the Regulator as stipulated in an existing regulation of the Commission.⁹

vi. Lack of presence of local Manufacturers

The absence of competent local meter manufacturers was considered a critical element that accounted for the delay in meter procurement. At the moment, Unistar is the only company assembling PPMs in Nigeria. However, the Company enjoys limited patronage from the DISCOs for the singular reason given by the DISCOs that Unistar meters are not Standard Transfer Specification (STS) compliant.

⁹ See Clause 1.1.2 (iv) of Connections and Disconnections Procedure for Electricity Services, 2007, Federal Government, Official Gazette, No 103, Vol 94 of 2007

During its Public Hearing held in Kaduna, the Committee also confirmed from the MD of EMCON, that the Company was out of production due to decrease in demand of electro-mechanical meters and absence of infrastructure for the production of PPMs and other modern meters now in high demand.

The DISCOs informed the Committee that in the absence of indigenous manufacturers, the only option open to them was to import their meters. These meters are then tested at any of the three (3) Meter Testing Stations located at Lagos, Kaduna and Port Harcourt.

It is therefore imperative that more companies are encouraged to establish factories in Nigeria but under strict compliance with set standards set by the regulator. In doing this, meters will not only be readily available to the DISCOs but technology transfer will also be actualized in compliance with the country's local content policy.

4.3 Determine the practices of metering of customers including corrupt, exploitative and illegal practices of staff of the DISCOs.

Presentations during the Public Hearings further revealed that the state of Nigeria's electricity sector is abysmally undeveloped. Sharp practices and inefficiencies were observed to be present throughout the value chain, from aging power plants and terrible transmission lines to more importantly, rampant corruption and poor collection rates. In virtually all the six zones visited, we received complaints ranging from outright refusal to meter customers, estimated billing following refusal to read installed Non-PPM meters, culture of impunity of PHCN staff, connivance of some unscrupulous PHCN staff with private individuals to defraud the general public, allegations of connivance of PHCN staff and the

public to by-pass meters, demand for money for preferential treatment in various forms , such as hot lines, tamper code, PR (un-receipted additional payment) were made for supply of meters.

4.3.1 Estimated Billing

Estimated billing was the norm in all the DISCOs visited by the Committee. Customers in Lagos, Enugu, Yola, Kaduna, Makurdi and Abuja Distribution Companies alleged that delay in the supply of meters to customers and blatant refusal to obtain correct meter readings which resulted in estimated billing were deliberate. They were of the view that with the poor supply of electricity in the country and gross inefficiency on the part of Discos to curtail operational losses (human and technical) estimated billing ('crazy bills' and **charging them for power they did not consume**) remains the only option for the Disco. Even though the DISCOs claimed that average consumption of those who were adequately metered was applied to a cluster of residents to arrive at estimated consumption, customers generally believed that the DISCOs' calculations for estimated billing were not based on established scientific or reliable parameters.

It was apparent that monthly targets given to the Business Units by the DISCOs was also a compelling reason for estimation. Lack of sufficient customer data, failure to implement adequate metering policy, connivance of meter readers with customers who pay unaccounted monies directly to them to either illegally cancel bills, tampering with meters, indulging in electricity theft or enjoy certain undue privileges, and failure to install proper check meters at the exit points often times result in commercial losses. For these and other

reasons, the DISCOs resort to sharp practices to recoup the energy loss by whatever means including estimating billing and thereby mounting undue pressure on registered customers.

In Enugu, customers in Iru-Oka Community like others in various zones with similar complaints alleged that despite paying for meters and in flagrant violation of relevant regulations, they were bulk metered and “coded bills” issued them monthly at a flat rate even without supply. They appealed to the Committee to save them from double-jeopardy of being charged for what they do not consume.

Ironically, the use of meters is expected to reduce revenue leakages that occur through power theft where some consumers bypass the meters and engender probity and transparency in the system that would bring in confidence to investors and consumers. This is not the case in Nigeria.

It was also observed throughout the Discos, that because of issuance of bills on a flat rate, customers have developed the attitude of wasting the electricity which would have effectively been put into use by other consumers in other areas. This according to them was consequent upon their belief that whether or not they make efforts to conserve electricity, their bills were estimated and constant.

4.3.2 Corruption

Typical in the entire geo-political zones visited was the allegation of corruption and extortion against some unscrupulous PHCN staff.

A unique example was the case of Tudun-Wada community in Lugbe, Abuja, where customers complained of being extorted by a certain contractor (Adume Nig. Ltd) who was neither a licensee of NERC nor a contractor to PHCN. All the consumers feeding from Adume Nig. Ltd point load 300KVA 33/0.415 transformer pay their bills to the contractor and the consumers are happy with him. Only God knows how many Adume Nig. Ltd we have nationwide and the number of customers under them. Chairman of the Tudun-Wada Residents Welfare Association, Mr. Clement Oba Ehigiator, alleged that the community had been in darkness for the past four years without power, but when the residents, through self-help, bought two transformers, officials of the PHCN refused to have them installed. Instead, the staff connived with the contractor to install another transformer and then compelled residents to pay N5, 000 each to be connected.

Speaking before the committee departed on a fact-finding mission to the community, the Chief Executive Officer of the Abuja DISCO, Engr. Abdulganiyu Umar, noted that he was hearing about the matter for the first time and that he would investigate the matter thoroughly and report back to the committee. He denied giving such approvals to anyone to distribute power on behalf of PHCN. During our visit to the community, the Committee was informed that the transformer which was neatly installed by a Contractor was commissioned by the staff of Abuja DISCO. Further efforts made by the Committee to verify the allegations failed as the Service Manager on site could not respond to the questions asked by the Committee. Documentary evidences in the form of bills were tendered by residents to buttress the fact that some other party was collecting revenue in the area other than PHCN.

Ironically, some residents of the area however, informed the Committee that they were satisfied with the services being rendered to them by the parties involved alleging that they had been out of electricity supply for more than 8 years. They further reported that all entreaties made to PHCN to assist them to enjoy public electricity supply were rebuffed.

In a related development in Makurdi, the committee was informed that in Adeke area having over 500 households, customers connected to a transformer located at Police Mobile squad pay a fix sum of N2,000 each to the Police rather than the Distribution company.

In Enugu, customers accused PHCN staff of extortion through the instrumentality of hoarding 'tamper codes', which were required to reactivate prepaid meters that were designed to periodically trip off as a means of safeguarding them against tampering. It was reported that the cases of extortion occurred when customers were compelled to visit the PHCN offices for issuance of the tamper-codes required to reactivate the meters.

The Committee discovered that the issue of illegal activities was not restricted to PHCN staff alone as some customers were accused in all the Discos of by-passing prepaid meters through the piercing of protective pipes used to safeguard cables and diverting load to heavy equipment like Air-conditioners and electric cookers from the meter. This practice was frowned at as it deprived the Discos of revenue. The Committee was informed that sometimes, customers bribed PHCN staff in order to allow them commit these illegal acts.

At Makurdi, one Peter Idoko complained that a PHCN staff, Odeh Luke, after receiving the sum of N20, 500.00 entered into agreement on the 7th of December, 2011 in Kwarafa Business Unit to transfer a meter with No. JS/03/S25/000019 to him, even though he knew that such request amounted to an act of illegality. Although the Committee was informed that Odeh Luke was not a staff but an I.T student attached to that office at the time, PHCN is vicariously liable for all acts committed in the course of his attachment¹⁰.

In Yola, there were complaints about the dichotomy between the rich and poor in the allocation of lines as neighbourhoods with rich residents after paying an agreed amount, were allocated 'hot lines' to the detriment of other customers who were sometimes left to wallow in darkness for a long period of time

4.3.3 Culture of impunity

Allegations bordering on non-challant attitude of staff of PHCN were also lodged. Staff were accused of overreaching customers who they feel are always at their mercy.

In Kaduna for instance, a customer complained that he had an encounter with KEDC staff in his factory who purportedly came to change the CTs of his MD meter. He stated that he allowed them to carry out their assignment after a long drawn argument. He however later discovered that the KEDC staff not only changed the CTs but installed a completely new meter. This was done in flagrant violation of the rules regarding change of CTs or meters which requires a customer to be communicated accordingly prior to effecting such changes.

¹⁰ Upon the intervention of the Committee the sum of N20,500 was refunded by PHCN to the customer

He sought to know and he was informed that it was legal for a customer to install a check meter to verify the accuracy of the bills issued to him. This he said was necessary because a meter wrongly calibrated can ground a business as meters have a way of picking wrong billing. He appealed that **for purposes of transparency and fairness, the duty to meter customers should be left for a third party rather than the DISCOs.**

Although the KEDC refuted the allegation, the Committee on further inquiry found out that the allegations were true.

In a similar development, one Dr. Tafar Bello-Danbazau , Sarkin Yakin accused a KEDC staff of requesting for gratification before repairing a transformer. He stated that there existed a group of touts popularly called “NEPA 2” who indulge in all manner of nefarious activities to the knowledge of the DISCOs.

Despite these plethora of allegations against the PHCN staff, the CEOs feigned ignorance of the customers' plights, saying that they were not aware that customers were being subjected to such treatments.

4.4 Suggest how NERC can ensure effective and quick metering of customers in the Industry

- i. NERC should recommend a clear cut guideline on procurement of meters for operators based on provisions made in the MYTO and authorize Discos to enter into agreements with financial institutions, metering service providers and manufacturers to facilitate mass metering of customers in order to urgently close the metering gap. NERC should provide some form of partial risk guarantee assuring

financiers that provisions for such accelerated metering scheme can be adequately catered for in the MYTO 2.

- ii. NERC should intensify efforts to convince Government to provide further intervention funds similar to the N2.9 billion metering support provided in 2010-2011 MYTO. This should however be strictly monitored to ensure efficient procurement and installation of the meters to all the unmetered customers and those with faulty meters. All DISCOs should be made to account to the Commission for the N2.9 Billion given to them to procure meters, failing which the relevant officers should be reported to relevant law enforcement agencies for further investigation.
- iii. NERC should improve upon its monitoring and enforcement strategies with respect to the Metering Code, Regulations on Metering, Billing and Collection and other rules relating to metering and customer care.
- iv. New service procedures should be streamlined and made less cumbersome to facilitate the efficient metering of existing unmetered customers and other potential customers who approach the Disco for meters. NERC should produce the enabling New Services Regulation.

NERC should encourage the massive deployment of affordable non Maximum Demand meters with prepayment functionality by all the Discos and who shall put in place a cost-effective mechanism for monitoring these meters to forestall incidence of by-pass or tampering

4.5 Suggest possible remedial actions to deal with lapses and corrupt practices

- a. NERC should as a matter of urgency initiate a legislation that would make all forms of illegal activities affecting the integrity of the electricity meter to be punishable by jail term or fines to be paid by those found culpable either on the side of the operator (PHCN) or the customer.
- b. Cases of corrupt practices reported by the customers should be thoroughly investigated and culprits sanctioned in accordance with established rules. Where elements of criminality are established, such cases should be forwarded to the specific agencies (EFCC, Police, ICPC) for prosecution.
- c. The Chief Executive Officers of the Distribution Companies should be made to answer allegations of corruption such as the case discovered in Tudun Wada Village and other similar cases that may be reported from time to time.

4.6 Suggest a framework for effective implementation and monitoring of metering and billing activities post MYTO 2.

- a. NERC should set up an effective multi-disciplinary monitoring and enforcement team that would ensure the implementation of all the metering provisions as enshrined in MYTO 2 and all the other Regulations affecting customer care
- b. NERC should encourage the Discos to launch a massive campaign on metering and what is being done to correct the metering gap. All available meters found in the various PHCN stores all around the country, should immediately be deployed and no form of payments should be demanded by the Discos for metering services. This is

in consonance with the Universal Metering provision that has been embedded in MYTO 2 to enable all electricity consumers to be metered on a continuing basis.

- c. Metering charges of all forms should be stopped since such costs have been captured in the new tariff and be amortized over a period of time. This should be stipulated in the customer's bill and should be discontinued when the meter is fully paid for as percentage of the total cost of serving the customer. NERC should effectively monitor the adherence of the Discos to this provision as soon as MYTO 2 becomes effective and universal metering is commenced.
- d. NERC should encourage a common vending platform for ensuring ease of vending by the customer from more than one source for installation by the Distribution Companies.
- e. NERC should equally launch a massive campaign on the information regarding metering in MYTO 2. The electricity customers should be properly educated on their rights and obligation on what they need to do if they are to get metered on time and pay the approved MYTO (2) tariff.
- f. NERC should encourage the liberalization of Meter Test Stations to enable the meters being imported into the country to be properly calibrated before being installed in customer's premises.

Reference:

1. Proceedings from the Public Hearings held in the Six geo-political zones and Abuja

CHAPTER FIVE

5.0 RECOMMENDATIONS

It is obvious and clearly substantiated by the findings of the Committee that the metering gap existing in all the Distribution Companies visited and from data received is wide and unacceptable. The gap without doubt constitutes a major hindrance in the quest for sustainability in the growth of electricity in Nigeria. This is so because without an objective parameter for measuring usage of electricity which is represented by the meter, the expected inflow of revenue for energy delivered cannot be achieved. Conversely too, the customers who do not have meters would continue to be exploited even when they are not supplied with electricity. In order to address this lingering crisis and set the electricity sector on a path of sustainable growth and development, the Committee recommends as follows:

1. Distribution Companies should be given operational and financial autonomy to engage in innovative strategies of financing efforts aimed at bridging the existing Metering gap provided the provisions relating to metering in MYTO 2 are not bridged.
2. In order to effectively erase backlog of meters, the Committee recommends the creation of a fund to adequately meter all unmetered customers. It is suggested that the Federal Government should provide an intervention fund estimated at N50 billion to close the metering gap.

3. Cases of criminality such as illegal distribution and sale of electricity without license as in Tudun Wada and Mopol Barracks in Abuja and Makurdi respectively, should be properly investigated and those found guilty, sanctioned according to law. Appropriate disciplinary measures should be instituted by the Discos supported by NERC to ensure that all forms of indiscipline being exhibited by some staff of the Discos are eliminated.
4. NERC should intensify its monitoring and enforcement apparatus to ensure proper implementation of existing regulations on metering, billing and cash collection as well as overall improvement in customer service to eliminate the culture of impunity prevalent at present in the electricity sector. The era of arbitrariness should as a matter of urgency be replaced with that of objectivity and decorum in dealing with electricity customer issues and complaints.
5. NERC should encourage Discos to undertake capacity building and training of their staff particularly in area of customer relations in order to promote better customer service in all Discos.
6. In view of the findings by the Committee of the existence of obligatory metering provisions (Condition 41) in the Terms and Conditions of Distribution Licensees, the Committee hereby emphasizes that NERC should enforce the aspects that relate to metering all customers at the Discos cost. This is coterminous with the principle that meters are the property of the Distribution Companies and hence they should concomitantly bear the cost. The Committee is however, apprehensive at this target of bridging the gap giving the huge metering crises.

- The Committee recommends a phased but consistent approach in order not to create unrealistic expectations.
7. The issue of illegal consumers of electricity needs to be addressed in order to reduce the tendency of the Discos to continuing with the controversial practice of given legal customers estimated bills.
 8. The Committee further recommends that there should be aggressive, comprehensive and simultaneous phased metering of all distribution and point load transformers in the network.
 9. NERC should evolve a regulation that would ultimately make it obligatory for Discos to meter their distribution transformers for adequate energy accounting and equity.
 10. The Committee equally recommends that NERC should encourage the production of meters locally as a long term measure to eliminate all forms of shortage in metering in Nigeria. Indigenous Companies should be encouraged to partner with foreign meter producers to set up factories in Nigeria for the manufacturing of all forms of meters and not just the present practice of assembling Completely-Knocked-Down (CKD) parts.

CHAPTER SIX

6.0 CONCLUSION

The Committee wishes to conclude by saying that the state of metering in the Nigerian Electricity supply Industry is indeed in dire need of emergency response to correct the wide gap. The situation is so alarming that if urgent remedial measures, some of which were enunciated in the Committee's recommendations, are not implemented, may threaten the reform of the power sector by the Federal Government of Nigeria.

A situation where more than half of the registered customers by all the Distribution Companies throughout the nooks and crannies of Nigeria, are billed on estimation is unacceptable and urgently needs to be reversed.

The viability of any electricity business is predicated upon a steady stream of predetermined income which is computed on the basis of its revenue requirement and a margin of profit. The revenue requirement represents all cost elements which include meters that are required for measuring electricity usage for billing purposes. The neglect of this very vital component of the electricity value chain in Nigeria has in the opinion of the Committee, been the most important factor that has created the present decay in the Electricity sector. It is therefore imperative that all stakeholders should on a consistent basis implement the Committee's recommendations to effectively resolve this problem.

This report has sadly called attention to the very low utilization of electricity in Nigeria. This is a reflection of the non-industrial nature of the Nigerian economy. For instance industrial usage is only an insignificant 0.71% of the low customer base of 5,172,979 customers in a country of about 160 Million people! Government and all its institutions must take all

necessary measures to redress this state of affairs by any means necessary including waging a sustained and relentless war against graft and all forms of inefficiencies.

At this point the Committee wishes to express its appreciation to the Management of the Nigerian Electricity Regulatory Commission (NERC) headed by Dr. Sam Amadi, Chairman/CEO and all the Commissioners for the opportunity to be of service to the nation, the Chief Executive Officers of all the 11 Distribution Companies who supplied the data required to diagnose the state of metering in Nigeria and Nigerians from all works of life who attended the Public Hearings held in the Six Geo-Political Zones of Nigeria and Abuja.

Thank you.

Signed:

1. Mr. Bamidele Aturu - -----
2. Alh. Iro Dan Fuloti - -----
3. Engr.(Dr.) Solomon Nyagba - -----
4. Chief Ganiyu Makanjuola - -----
5. Engr. (Mrs) Mary Awolokun - -----
6. Engr. Isa Usman Emoabino - -----
7. Dr. Abba Ibrahim - -----
8. Engr. Cornelius Ugorji - -----
9. Mr. Juddy A. Okere - -----
10. Engr. Emmanuel Ezekwere - -----
11. Mr. James Ewah - -----
12. Mr. Abubakar Shuaibu - -----
13. Mr. Shittu H. Shaibu - -----

LIST OF APPENDICES

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3. Sample Letter of appointment of Members
4. Sample Letter requesting CEO's of distribution companies (DISCO's) to forward information and data on metering
5. Questionnaire sent to the Disco's for data collection
6. Advert in National Dailies inviting stakeholders and the general public to the Public Hearings
7. List of attendees at the various public hearings in the Six Geopolitical Zones of the country
8. Memo from PHCN Headquarters on service charge and charges applicable to projects executed by prospective customers
9. Licensing Terms and Conditions
10. EPSR ACT 2005 (see copy at www.nercng.org)
11. Regulation on Meter Reading, Billing and Cash Collection (see copy at www.nercng.org)