

Electricity Metering System in Nigeria: An Examination of the Regulatory and Policy Initiatives to Bridge the Gap

Olanrewaju A. Aladeitan* and Suanu-Deekae K. Joan**

Abstract

The use of estimated billing system in the supply of electricity in Nigeria has generated a lot of concern as consumers complain unceasingly about the exorbitant fees charged by the Distribution Companies (Discos) for electricity usually not supplied. The overzealous nature of estimated billing is now evident as consumers still get 'crazy bills' regardless of how economical they are with the use of power, worst of all, is where the consumer has suffered series of short or long term power outages, is on vacation or shuts down the power supply to the property and is rewarded yet again with estimated billing. Despite the introduction of prepaid meters, estimated billing remains a menace to the Nigeria Electricity Supply Industry as only an insignificant fraction of consumers is metered. To resolve the consequences of estimated billing and to close the metering gap, the Nigerian Electricity Regulatory Commission (NERC) has at various times introduced measures and schemes to ensure fair and appropriate billing of electricity consumers. One of such scheme is the Credited Advance Payment for Metering Implementation (CAPMI) and the most recent one is the Meter Asset Provider (MAPs) which came into force on the 31st of March, 2018 and became enforceable on the 28th of April, 2018. This paper examines the regulatory and policy initiatives adopted at various times by NERC to bridge the metering gap with a view to identifying the effectiveness or otherwise of the initiatives in closing the metering gap. Although, the paper observed that the problem of metering in the Nigerian Electricity Supply Industry (NESI) remains largely unresolved, yet MAP regulation is a step in the right direction to solve the metering problem. The paper nevertheless concludes that for MAP regulations and any other NESI policy to be effective, the consumers of electricity must be supportive of the system by discharging their obligations and contributing their own quota towards the emergence of an efficient NESI since all the participants in the energy value chain though independent yet plays a significant role.

Keywords: Estimated billing, distribution companies, metering, NESI, MAPs

* Associate Professor, PhD (Law); B.L.; MBA, Faculty of Law, University of Abuja
08052383330. lanrealadeitan@yahoo.com

** LLB, B.L., Faculty of Law, University of Abuja, Nigeria.
07062530157. kaanawasuanu@gmail.com

Introduction

Since the commencement of the reform of the Nigerian Electricity Supply Industry (NESI) in 2001, premised on the development of a technically and commercially efficient electricity supply industry that meets all the current and prospective economically justifiable demands for electricity throughout the country by modernizing and expanding its coverage,¹ inadequate metering continue to remain as a major obstacle in achieving the goals of the policy direction to ensure that the electricity industry support national economic and social development.² As a consequence of the reform policy, efforts have been made to experiment with diverse solutions, most of which has proved unsuccessful. The importance of metering in electricity sector value chain cannot be over emphasized. It has in fact been described as the cashbox of the electric power sector industry³ because the revenue generation process in the value chain starts from the meters installed at locations such as homes, offices and industries to determine for appropriate costing, the amount of the transmitted and distributed electricity consumed at the various locations. Hence, electric meters are usually installed at customers' premises to measure electric energy delivered to customers for billing purposes. The major challenge has been the estimated billing system which is perceived by consumers as exorbitant and non-reflective of the actual cost of electricity consumed regardless of how economical they have been with the use of power or even when there was no consumption at all as a result of long term power outages. The repositioning strategy by the Nigerian Electricity Regulatory Commission (NERC) in line with the National Electric Power Policy 2001 to proceed with and complete its programme for installation of prepayment meters, expeditiously led to such schemes as the Credited Advance Payment for Metering Implementation (CAPMI) which has remained ineffective as only an insignificant fraction of consumers are metered

¹ National Electric Power Policy 2001

² *ibid*

³ Still on Metering; On Distribution, Thoughts and Opinion by Nextier Power <<https://www.nigeriaelectricityhub.com/2017/06/16/still-on-electricity-metering>>19, January 2020.

leaving a vast majority subject to estimated billing with its attendant exorbitant cost. There is, therefore, no doubt that any gap in electric metering and any form of inefficient and obsolete metering infrastructure will constitute serious challenge to the survival of the [electric] power sector.⁴ In resolving the problem of estimated billing, NERC introduced the Meter Asset Provider (MAPs) which came into force on the 31st of March, 2018 and became enforceable on the 28th of April, 2018 to bridge the metering gap.⁵ The extent to which this regulatory and policy initiative bridges the metering gap is the focus of this paper as it is evident that metering provides a lifeline for the growth and development of the electricity sector.⁶

Definition and Meaning of Metering

Metering, according to Makanjuola *et al.*, is ‘the process and method of utilizing devices to measure the amount and direction of electrical energy flow; particular for end-use’.⁷ Metering is a way of measuring the amount of physical quantity of electricity transmitted when activated by a powered device.⁸ What metering does is to capture the flow of energy through the technicality of metering instrumentation.⁹ Metering involves grid metering and retail metering.¹⁰ Grid metering is utilized for all energy generated and transmitted to the distribution sector,¹¹ while the retail metering or customer metering is for the measuring of the level of consumption of retail customers as the name implies.¹² Electric meters are usually installed at customers’ premises to measure electric energy delivered

⁴ ibid

⁵ Meter Asset Regulation 2018

⁶ ibid (n, 3)

⁷ NT Makanjuola, *et al.*, ‘Investigating the problems of prepaid metering system in Nigeria’ <<http://www.researchgate.net/publication/326493702-investigating-the-Problems-of-Prepaid-Metering-Systems-in-Nigeria/>> accessed February 18th 2020.

⁸ Egonu Ugochi Ann et al, Challenges of Metering in Nigeria <<https://www.academia.edu/36173434/Challenges-of-metering-in-Nigeria>> accessed 8th April, 2020

⁹ ibid

¹⁰ ibid

¹¹ ibid

¹² ibid

to customers for billing purposes.¹³ They are calibrated in billing units which operate by continuously measuring the instantaneous voltage (volts) and current (amperes) to give energy used (in joules, kilowatt-hour etc).¹⁴ It is important to note that the gap in grid metering is being met but there, however, remains a huge gap in the level of metering of retail customers or what is called customer metering.¹⁵

Post-Paid Metering and Estimated Billing Challenges in Nesi

Before the privatization of Nigeria's power sector in November 2013, electricity payment was largely done through the use of post-paid meter readings and estimated billings methods.¹⁶ The post-paid billing system under the government owned horizontally integrated NESI was described by Olalere as laced with socialist-welfare service orientation.¹⁷ He submitted further that there were no emphasis on supply of meters to the final consumers and that when the private investors took over parts of the NESI in 2013, there was a huge metering gap which persists till now, and remains a significant problem.¹⁸ Post-paid metering system involves the payment of electricity bills after consumption by the customers.¹⁹ However, in instances where a customer does not have a meter, estimated billing is applied to determine the actual electricity consumed.²⁰ Estimated billing requires customers to pay either far above or below consumption since there is no metering device to detect the actual electricity consumption. These two methods of payment give room for evading payment of consumed electricity, increases the non-payment of electricity bills by customers and lead to different forms

¹³ Enertiv, What is an Electric Meter, at <<https://www.enertiv.com/resources/faq/what-is-electric-meter>> accessed April 1st 2020

¹⁴ Makanjuola (n, 5)

¹⁵ Egonu (n, 6)

¹⁶ Osasu Eghobamien, Meter Asset Provider Regulations: Same Content in Another Skin? Power Library Nigeria Electricity Hub <<https://www.google.com>> accessed February 18th 2020

¹⁷ Peter OlaoyeOlalere Metering the Nigerian Electricity Consumers 2018-SPA AJIBADE & CO <www.spaajibade.com> accessed on 10th February, 2020

¹⁸ Ibid

¹⁹ Mustapha AbdulGaniyu, The Defective Metering System in the Distribution of Electricity in Nigeria; A clog in the wheel of progress.

²⁰ Ibid

of electricity theft. With these unpleasant occurrences, there was indeed a need as is still the case for a paradigm shift from the use of post-paid metering and estimated billing to the use of prepaid meters.

Against the backdrop of the post-paid metering and estimated billing systems being inadequate to properly quantify electricity usage and payment, in 2009, prior to the privatization of the power sector, the Federal Government implemented a mass metering program called the National Prepaid Metering Program (NPPMP) to address the metering gap, with a focus on the adoption of the pre-paid metering technology.²¹ Contractors under the NPPMP were appointed to procure and install pre-paid meters at no cost to electricity customers. However, the program was not sustainable for a number of reasons such as the huge cost of funding the meters; the lack of transparency in the appointment of the contractors; the short duration of the contracts; uncoordinated meter procurement processes; increase in sub-standard meters; non-standardization of meter technology and corruption.²²

Nigerian Electricity Regulation Commission Metering Policy and Regulatory Scheme

To further advance the deployment and provide a comprehensive solution to the metering of customers and in a bid to eliminating the challenges associated with post-paid metering and estimated billing, the Nigerian Electricity Regulation Commission (NERC) introduced certain policies and regulations pursuant to section 96 of the EPRSA, to lay a framework for the full implementation of pre-paid metering to close the lingering metering gap, assuage the effect of estimated billing and ensure the effective electricity supply to consumers. The framework is also intended to improve the cash flow of Distribution Companies (DISCO), reduce cost of billing and ensure better revenue tracking. These Regulations are as follows:

²¹ Nextier Power (n, 3)

²² *ibid*

Meter Reading, Billing, Cash Collections and Credit Management for Electricity Supplies Regulation 2007

NERC in 2007, in exercise of the powers conferred upon it by virtue of section 96 of EPSRA, introduced the Meter Reading Billing Cash Collection and Credit Management for Electricity Supplies Regulation. Under the Regulation, a DISCO was under a mandatory obligation to obtain an actual reading of all the meters within its area and must not under any circumstance artificially inflate the estimated usage of either the new or old customer.²³ Also, the bill to be issued by the DISCOs shall be bills issued for electricity used at each Customer's supply address at regular intervals approved by the commission and more than one bill may not be issued during the same billing period.²⁴ The DISCO was expected to use the meter reading taken at the time of disconnection to bill every customer who was disconnected for non-payment and the bill must show the total value of all charges owed by the customer up to the time of disconnection.²⁵ A major provision of the Regulation was section 8. It provided for instances where estimated billing can be done by the DISCO subject to NERC's approval.²⁶

Methodology for Estimated Billing (MEB) Regulations 2012

The Methodology for Estimated Billing (MEB) Regulations 2012 is somewhat similar to the Meter Reading Billing Cash Collection and Credit Management for Electricity Supplies Regulation but with slight differences. Due to the continued outcry of electricity consumers over 'crazy bills', NERC in 2012 introduced the Methodology for Estimated Billing (MEB) Regulation, through which estimates are scientifically derived in order to ensure that consumers are not overcharged while DISCOs are not cheated.²⁷ The objective of the methodology according to the Regulation was to provide for the standardization of the method used by the DISCOs to estimate a customer's power usage and bills accruing thereby in instances where

²³ Meter Reading, Billing, Cash Collections and Credit Management for Electricity Supplies Regulation 2007, regulation 1

²⁴ Ibid, r4

²⁵ Ibid r6

²⁶ Ibid, r8

²⁷ Peter (n, 15)

the DISCO is unable to read the customer's bill within a billing period and also the standardization of the indices to be considered by DISCOs in estimating the power usage of a customer connected to the electricity system without a meter.²⁸ The Regulation made it mandatory for the DISCOs to endeavor to obtain the actual reading of all meters recording electricity usage at all addresses within their areas of operations.²⁹ Where the DISCO was unable to do so, the customer's electricity usage shall be determined by the company unless the consumer provides his own meter readings within the period.³⁰ The Regulation equally shielded the customers from the exploitation by the DISCOs by providing that where a Disco estimated a customer's usage the DISCO shall adopt the Commission's (NERC) approved methodology for estimated billing, and the customer's estimated electricity usage shall, under no circumstance be arbitrarily inflated by the DISCO.³¹ It equally provided for the classification of customers that may be issued estimated billings.³² These included Customers with faulty meters, that is existing customers who had been issued meters that were no longer functional;³³ Customers whose meters cannot be read, these were customers whose meter readings, could not be obtained by the DISCO due to inaccessibility occasioned by locked doors, customers not being at home at the time of reading the meter, presence of dogs on the premises etc,³⁴ and Existing Customers without meters, these were directly connected customers that have not been provided with meters.³⁵ The Regulation equally provided for the methodology for estimated billing for Metered customers, Unmetered Maximum Demand (MD) customers and Unmetered Non-MD customers.³⁶

As commendable as these Regulations were, the Regulations did little in bridging the metering gap. NERC in its report for the first quarter of 2018 stated that out of the 8,135,730 registered customers,

²⁸ Methodology for Estimated Billing 2012, regulation 2

²⁹ Ibid, r2

³⁰ Ibid, r2(2)

³¹ Ibid, r2(3)

³² Ibid, r3

³³ Ibid, r3(1)(a)

³⁴ Ibid, r3(1)(b)

³⁵ Ibid, r3(1)(c)

³⁶ Ibid, r4,5&6

only 3,434,003 (about 42 percent) had been metered as of the end of March 2018.³⁷ The Commission said in a new consultative paper,³⁸ ‘it is fully aware that the Discos have contractual obligation under the privatization programme to meter all their customers within five years as contained in the Performance Agreement signed with the Federal Government of Nigeria’.³⁹ This metering obligation has, however, not been fully met by the distribution companies, leading to mounting complaints on the side of the customers.⁴⁰ NERC further added, that ‘this was a complete failure owing to the Discos’ inability to effectively implement the guidelines’.⁴¹

It is apparent that the prevailing regime of estimation under the MEB had not been effectively and accurately implemented NERC stated.⁴² This has resulted to considerable burden being placed on unmetered customers, who ultimately are beset with outrageous and very high estimated bills that has not been objectively determined.⁴³ To find a solution to the estimated billing, NERC released a consultation paper on the Capping of Estimated Billing for Unmetered Electricity Customers seeking possible options that can be adopted for the determination of a ‘cap’ on monthly estimated bills issued to the different tariff classes of electricity end user.⁴⁴ The Consultation paper proposes three (3) options for the capping of unmetered customers as follows: (a) a maximum cap based on the projected average monthly consumption for each tariff class provided in MYTO; (b) a cap determined by applying the average consumption of each tariff class within a franchise area and (c) a cap based on the average vending of the same tariff class within the area, taking into consideration the disparity in the availability of supply within a franchise area and the customer profile.⁴⁵

³⁷ Energy News, Estimated Billing a Complete Failure: Says NERC <<http://energynews-ng.com/estimated-billing-a-complete-failure-says-nerc/>> accessed on 7th April, 2020

³⁸ Ibid

³⁹ Ibid

⁴⁰ Ibid

⁴¹ Ibid

⁴² Ibid

⁴³ Ibid

⁴⁴ NERC Consultation Paper on The Capping of Estimated Billing for Unmetered Electricity Customers, 2018 pg5 <www.nerc.gov.ng> accessed 7th April, 2020

⁴⁵ Ibid, pg8

Credited Advance Payment for Metering Implementation

Seeing that the metering gap remained elusive, NERC after due consultation with stakeholders developed a new accelerated scheme for electricity meter deployment known as the Credit Advancement Payment for Metering Implementation (CAPMI). The Credited Advance Payment for Metering Implementation (CAPMI) scheme was inaugurated in 2013 pursuant to CAPMI Order No. NERC/05/0001/13. CAPMI was devised by NERC in response to the inordinate and unexpected increase in the operating costs of the DISCOs, which it did not seem appropriate to remedy through an increase in the retail tariff.⁴⁶ CAPMI was introduced to support the rapid metering of all electricity customers across the country within a short period of time to curb the huge financial distress of Discos in meeting the needed resources to meter all customers within a limited period.⁴⁷ In other words, CAPMI⁴⁸ entails the advance payment by customers for their meter asset and associated installation costs, which payment would be refunded in full, with an accrued interest, through an incremental reduction in the fixed charge component of their electricity bill.⁴⁹

Under the scheme, customers who were willing to participate was required to advance the cost of the meter and associated installation cost approved by NERC. Once the money was advanced, the customers were supposed to be metered within 45 days of payment.⁵⁰ According to NERC factsheet on CAMPI implementation,

⁴⁶ OlaniwunAjayi, Power & Infrastructure Wrap Up-2018 Review/2019 Outlook <<http://www.olaniwunajayi.net/blog/power-wrap-up-report-2018-2019/>> accessed 7th April, 2020

⁴⁷ Egonu (n, 6) pg.22

⁴⁸ The salient features of CAPMI are that it is not compulsory but is open to all customers who are interested and are willing to participate. Customers who are not willing to participate can apply for meters as usual, and will be attended to by the Disco; CAMPI does not replace the existing meter rollout programme of the respective Discos where no upfront is required. Both activities will run side by side with each other; The standard specification of meters is as prescribed by the Metering Code; Procurement and installation of meters are within 45 days of payment by a customer; 12% nominal interest charge on the amount paid by a customer, etc.; The cost of the meters was arrived at using the standard market price plus the most efficient installation costs; The implementation of the scheme was to be closely monitored by NERC to protect customers from abuse.

⁴⁹ Olaniwun (n, 50)

⁵⁰ Peter (n, 15)

the amount to be paid by the customer was dependent on the type of meter installed. No profit was to be made by the DISCO in the supply of the meters. DISCOs shall refund the customer⁵¹ for only the cost of the actual meter and meter box, customers are to bear the cost of accessories and installation.⁵²

As laudable as CAPMI was, it was plagued by a number of critical flaws; amongst which included the fact that most DISCOs were unfaithful to the intent of the scheme. The general impression and feedback was that the DISCOs did not quite embrace the scheme as they often asked willing customers not to pay the money into the designated account or they simply refused to issue the teller for payment in the said account.⁵³ A major problem also was that even after the 60 days of payment, customers were not metered. A great deal of complaints characterized the schemes as DISCOs continued to give customer estimated billings. The overt provisions of the scheme which stipulates that customers should be refunded their monies with interest over a period of time by discounting the fixed charge element of their monthly bills were mere paper enticement as Discos paid no heed to customer's loud cry.⁵⁴

Following the recurring customer complaints about non-delivery of meters, despite full payments by customers, the initiative was wound down with effect from November 1 2016.⁵⁵ As at March 2016, only 403,255 meters had been disbursed and installed under CAPMI, 38 percent of the total deployment (151,724 meters) were financed by the electricity distribution companies, while the remaining 25,531 meters deployed were financed by the customers.⁵⁶

⁵¹ The refund due to customers shall be 12% interest and will be done through a reduction of 100% of the monthly fixed charge component of their electricity bill. The maximum period shall be three years as determined by the Commission from time to time. Any monies advanced from meter installation under the CAPMI were to be deposited in dedicated bank accounts, jointly controlled by the Disco and the vendor/installer of the meters. No official of the Disco was authorized to receive any payment in this regard.

⁵² the cost of the meters is arrived at using the standard market price plus the most efficient installation costs.

⁵³ Peter (n, 15)

⁵⁴ Egonu (n, 6) pg 22

⁵⁵ Osasu (n, 14) pg 4

⁵⁶ ibid

As at December 31, 2017, the metering gap for all Distribution Licenses was reported at 4,740,275 meters.⁵⁷

It is submitted that CAMPI would have succeeded in bridging the huge metering gap in NESI if the Discos were sincere and committed to the scheme. Given the fact that CAPMI also exhausted its period of application, raises questions on why the Discos were unable to deploy meters having been paid for a period of three years and also whether or not the scheme was a deliberate means for the Discos to solely enrich themselves at the expense of customers? It is interesting to note that despite this unwholesome practice, no Disco has been prosecuted, thus questioning the regulatory and enforcement role of NERC in supervising the scheme and also raising doubt on whether scrapping the scheme was the best solution.

Meter Asset Provider (MAP) Regulations 2018

This is the latest Regulation and initiative introduced by NERC in a renewed effort to close the metering gap.⁵⁸ NERC introduced the Meter Asset Provider (MAP) Regulations on 8th March 2018, pursuant to its powers under section 96(2) of the EPRSA 2005.⁵⁹ MAP takes the cost of metering completely away from the DISCOs and places same on the consumers.⁶⁰ This is done through the instrumentality of the Meter Asset Providers (MAPs) who have been licensed, in conjunction with the DISCOs to supply meters to the premises of customers who request for same and then charge fees for the meter asset in addition to the electricity tariff for a period of 10 years.⁶¹ It is through the meter fees that MAPs will recover their investment and profit in providing the meter.⁶² The objectives of the regulations are to encourage the development of independent and competitive meter services in NESI; eliminate estimated billing practice in NESI; attract private investment to the provision of metering services in NESI; Close the metering gap

⁵⁷ ibid

⁵⁸ Ibid (n, 15)

⁵⁹ EPRSA Act 2005

⁶⁰ Peter (n, 15)

⁶¹ Ibid

⁶² ibid

through accelerated meter roll out in NESI and enhance revenue assurance in NESI.⁶³

MAP regulations make provision for the granting of permits to MAPs.⁶⁴ MAPs are companies authorized by NERC to supply, install and operate meters on customers premises on behalf of the DISCOs.⁶⁵ Accordingly, MAPs are to enter into an agreement with the DISCOs called the Metering Service Agreements (MSAs) for the provision of metering services and Service Level Agreements (SLAs) which define the level of service that the DISCOs expect each MAP to provide to consumers.⁶⁶ The DISCOs will include a metering service charge as a clear line item on the bill of each customer that has been provided with the meter under the MSA agreement with the MAPs.⁶⁷ The cost structure of the metering charge covers two costs; the cost of providing the meter asset and the ongoing cost of operating and maintaining the meter.⁶⁸ It is important to note that the metering charge is separate from the MYTO 2015 energy service charge.⁶⁹ The MAP regime provides for two payment mechanisms.⁷⁰ Under the first arrangement, where the customer chooses to pay upfront, the relevant customer will not be liable for the payment of the metering service charge and will only be billed the usual energy charge.⁷¹ The second arrangement is where the customer is supplied a meter by a MAP and is registered by the relevant DISCO which subsequently collects meter service charge from the customer for the meter supplied by the MAP.⁷² The DISCOs are required to ring-fence the sums collected and remit same to the MAPs in each billing cycle.⁷³ By regulation 17(4) which provides that where a customer fails to pay for metering service

⁶³ MAP 2018 ,r 2

⁶⁴ Ibid, r8

⁶⁵ Ibid, r3

⁶⁶ Ibid, 19

⁶⁷ Ibid, r10(5)

⁶⁸ Ibid, r 21

⁶⁹ Reason Abajuo, The 2018 MAP Regulations: Ending Collection Losses in Nigeria's Electricity Supply Industry <<https://www.researchgate.net/publication/323952229>> accessed February 19th, 2020

⁷⁰ MAP 2018, r 17, r18

⁷¹ ibid,r 8

⁷² ibid, r17(3)

⁷³ Ibid, r23

charge in any given month or months, the cumulative metering service charge will be deducted upon the subsequent payment. For those who do not pay for the meters upfront, the payment for the metering charge will only cease upon full amortization of the meter over its technical life. The regulation gives NERC the right to audit the procurement process undertaken by the DISCOs, and prohibits the DISCOs, their core investors, subsidiaries, affiliates, directors and relatives from setting up, owning shares or holding directorships and senior management position.⁷⁴ Finally, the regulation further gives justification to NERC to take necessary action to drastically reduce the DISCOs' ability to bill customers on an estimated basis by providing that within 120 days from the commencement of the regulation, NERC shall issue an Order that will cap the bills of unmetered customers.⁷⁵

Implication of the Map Regulation

The provisions of MAP regulations have significant implications on the key stakeholders involved: The Customers, the Distribution Companies, the Meter Asset Providers and NERC. The customers who happen to be the end users are greatly affected due to the fact that MYTO 2015 which is applied to energy bills of the customers states that each DISCO tariff reflects its metering costs.⁷⁶ By paying their usual energy bills, customers are already paying for the DISCOs metering costs hence, the Regulation has duplicated charges for the customers who are mandated to pay a separate metering service charge when meters are installed.⁷⁷ However, where a customer elects to pay upfront, he is not liable to pay the metering service charge.⁷⁸ Also, the regulation makes no provisions for customers who paid for meters under CAPMI but were not provided such meters. Hence, they lose money paid for meters under the CAPMI and lose money paid for duplicative metering service charge in the MAP.⁷⁹

⁷⁴ *ibid*, r26

⁷⁵ *ibid*, r8(2)

⁷⁶ MYTO 2015, Par 13(1)

⁷⁷ Reason (n, 67) pg7

⁷⁸ *ibid*

⁷⁹ *ibid*

Furthermore, the contractual agreement as agreed between the DISCOs and MAPs provides for the payment of metering service charge by customers who are not parties to the agreement. The customer is thus left at the mercy of the MSA parties and regulator, and he/she is given no opportunity to voice his concerns over the cost of the meter or metering services.⁸⁰ Although the MAP regulation states that the metering service charge will cease upon full amortization of the meter, since the customers are not privy to the terms of the MSA, they are unlikely to be able to determine when the meter asset has been fully amortized. Hence, they face the risk of continuing payment of the charges long after the meter asset been fully amortized.⁸¹

Finally, MAP regulation provides that the customer (defined as any end user who is contracted to receive electricity supply from a DISCO) shall provide access for the provision of meters in their premises.⁸² A customer will be disconnected by a DISCO if he/she refuses to allow the installation of a meter by a MAP.⁸³ This provision while appearing to be referring to unmetered customer is ambiguous and can be interpreted to cover even customers that currently have meters installed in their premises since there is no specific exclusion of metered customers in the regulation. The question therefore is whether existing metered customers will also be disconnected if they refuse the installation of a new meter by MAP?⁸⁴

The implication of MAP on the Distribution Companies may appear punitive for failing to meet their metering targets as they are required to open a guaranteed line of revenue for MAPs.⁸⁵ While the metering responsibility has been acceded to the MAPs, there would still be a significant level of metering effort required on the part of the DISCOs which will in effect require additional expenditure beyond the current provisions in the Multi Year Tariff Order

⁸⁰ *ibid*

⁸¹ *ibid*

⁸² MAP 2018 ,r17(1)

⁸³ *ibid*

⁸⁴ Reason (n, 67)pg7

⁸⁵ *Ibid*

(MYTO).⁸⁶ DISCOs will need to ramp up their respective networks to ensure they are suitable for temper resistant metering, thus requiring additional CAPEX and ongoing OPEX for payments to MAPs especially considering the fact that the regulation anticipates the MAPs to be paid in full the Meter Service Charge(MSC) by customers during each billing cycle without taking into account of instances where the DISCOs receive only part payment from customers.⁸⁷ Furthermore, the regulation provides that the DISCOs will be expected to provide guarantee or payment security and make periodic payment to the MAPs for the cost of the installed meters over a period of 10 years (which is the tenure of the MAPs permit in the first instance according to the regulation) whilst the MAPs are supposed to execute a performance bond under a Service Level Agreement in favour of the DISCOs.⁸⁸ Upon default of payment by the DISCOs, the MAPs will be entitled to draw down on the guarantee or payment security depending on the payment structure between parties which could be a loss to the DISCOs. Equally, the regulation allows the customers to exercise the choice of providing customer-financing for meter installation.⁸⁹ Where a customer however pays upfront, he is not liable to pay any meter service charge to the DISCO.⁹⁰ The DISCOs therefore bears the burden of paying for both the aggregated cost of metering and ancillary meter-maintenance to be provided by the MAPs. The regulation equally finds the DISCOs liable for the payment of the applicable metering service charge in the case prolonged power outage exceeding two weeks, whether or not the DISCOs are responsible for the power outage.⁹¹

In comparison to the other stakeholders, the implication of MAP on the Meter Asset Providers appears to be relatively safe.⁹² However, the general uncertainties arising from the regulation will

⁸⁶ Samson Ozah and IvieEhanmo 'Analysis of the NERC Regulation on Meter Asset Provider (MAP) 2018 <https://www.academia.edu/36537634/Analysis_of_the_nerc_map_Regulation_2018>' accessed n February 19th, 2020

⁸⁷ *ibid*

⁸⁸ MAP 2018,r 21(1)(a)

⁸⁹ MAP 2018,r18

⁹⁰ *ibid*

⁹¹ Reason (n, 67)pg8

⁹² *ibid*

affect them in the long run if there is no sustained compliance.⁹³ Specifically, the regulation provides that where a meter is damaged and it is established that the customer willfully damaged a meter, the MAP replaces the meter based on an upfront payment by the customer or other mutually agreed terms of payment.⁹⁴ Hence, the MAP is at a loss and will face an uncertainty if the meter is damaged by a customer who is unwilling or unable to pay for a new meter since the DISCO will certainly resent bearing the new cost and will likely prevent enforcement of the security it provided if the meter is damaged by a customer.⁹⁵ These provisions of the regulations on the terms of the MSA do not envisage this circumstance either. The DISCO will likely not disconnect the customer, but may resort to estimated billing. Thus the MAP loses.⁹⁶

On the implication of MAP on NERC, although NERC introduced MAP based on a regulation pursuant to its powers under EPSRA, there is a likelihood that these regulations will face judicial review⁹⁷ as it is arguable that the new metering service charges qualify as new tariffs or amendments to MYTO 2015.⁹⁸ While NERC called for public hearing before issuing the regulation, there is no provision for public consultation before approval of the metering service charges. Hence, it is possible for the metering service charges to be challenged on the basis of non-compliance with section 76 of EPSRA which outlines the procedure for establishing tariffs by NERC.⁹⁹ More so, Paragraph 18(g) of MYTO 2015 states that “DISCOs can finance rapid deployment of meters and have the capex for such extra meter rollout imputed back to the revenue requirement and recovered through tariff”. It appears that NERC either has achieved this recovery through tariff through the regulation or has contradicted its MYTO 2015.¹⁰⁰

93 ibid

94 ibid

95 ibid

96 ibid

97 ibid

98 ibid

99 ibid

100 ibid

On the whole, the enactment of the regulation is timely and commendable if well implemented with the cooperation of all relevant stakeholders. However, one major drawback with the regulation is the introduction of a monthly meter service charge which is to be borne by the electricity consumers with the likely increase in the bills to be paid by consumers who still grapple with the problem of unstable power supply and the harsh economic situation.¹⁰¹

Furthermore, the Regulation gave wide discretionary power to the DISCOs by providing that the DISCOs would first declare a ‘gap’ in metering before the other processes follow.¹⁰² The implication of this provision is that there is little room for a private investor to effectively and directly participate in metering unless a DISCO deems it fit that a MAP is needed, hence placing the MAPs at the mercy of the DISCOs.¹⁰³ This may be very restrictive and considering that the DISCOs are also private entrepreneurs, there might be conflict of interest and the declaration of metering gap may take a very long while.¹⁰⁴ Also important to note is that the regulation provides that its applicability shall not affect metering contracts entered into by DISCOs prior to its coming into effect and that the provisions of all other Regulations, Rules and Codes of NERC shall only be applicable to the extent of their relevance.¹⁰⁵ It is unclear whether the technical advantages and amortization benefits in MAP Regulations will continue to apply to new meters installed as a replacement to old meters, subsequent to the commencement of MAP Regulations.¹⁰⁶ It is also not clear, the extent of the relevance contemplated by MAP Regulations, with regard to other NERC Regulations already in existence and which regulation would override the other where there is an inconsistency.¹⁰⁷

¹⁰¹ Peter (n, 15)

¹⁰² Ayodele Oni An Evaluation of the Nigerian Regulatory Commission Meter Asset Provider Regulations 2018<www.lexlogy.com> accessed February 19th,2020

¹⁰³ *ibid*

¹⁰⁴ *ibid*

¹⁰⁵ *ibid*

¹⁰⁶ *ibid*

¹⁰⁷ *ibid*

Order on Unauthorized Access, Meter Tampering and Bypass

In a bid to discouraging meter tampering and reduce collection losses to electricity DISCOs, NERC issued an Order on Unauthorized Access Meter Tampering and By-Pass (NERC/REG/41/2017) on the 6th of December, 2017. The Order seeks to penalize customers who commit any of the infractions indicated in it and ensures that the DISCO is able to recover the lost revenue during the period of the said unauthorized access, meter tampering or bypass.¹⁰⁸

The tampering and bypassing of meters by electricity consumers remains one of the reasons DISCOs gives for their failure to reduce collection losses in metered area. Meter tampering and bypass refers to the practice of interfering with meters such that the readings are not reflective of the actual electricity consumed by the customers.¹⁰⁹

The Order specifies conditions for the reconnection of customers to a DISCO's distribution network following disconnection due to meter tampering and bypass. The conditions include significant reconnection costs to be paid by the errant customer.¹¹⁰ Customers are also required to administrative charges in addition to the prescribed reconnection costs.¹¹¹ The DISCO who has been paid both the reconnection penalty and administrative charge is expected to reconnect such consumer within 48hours; otherwise the DISCO will be liable to pay the customer N1000 (if residential) N1,500 (If commercial) and N2000 (if industrial or special) customers for each day of failure to reconnect or.¹¹² The DISCO is also obliged to pay the customer who is unjustifiably disconnected.¹¹³ What is not clear from the order however, is that if a consumer is unjustifiably disconnected or has paid the penalty and administrative charge for unauthorized access but the DISCO refuses to reconnect such a consumer for periods of 6 months after, whether

¹⁰⁸ Ibid (n, 15)

¹⁰⁹ Aelx sp, 'The NERC Order on Unauthorised Access, Meter Tampering and Bypass' <<https://ng.vlex.comvid/the-nerc-order-on-70424593>> accessed Februar 20, 2020

¹¹⁰ ibid

¹¹¹ ibid

¹¹² Peter (n, 15)

¹¹³ ibid

all that the DISCO is expected to pay such customer still remains paltry amount indicated in that order.¹¹⁴

Smart Metering Regulation No. NERC/REG/4/2017

The Smart Metering Regulation¹¹⁵ basically targets the quality and standard of meters to be deployed and installed by the DISCOs to ensure accurate measurement of usage and bills are generated by the supplying DISCOs and paid by the customer.¹¹⁶ A smart meter is an electronic device that records consumption of electric energy and communicates the information to the electric supplier for monitoring and billing.¹¹⁷ Smart meters enable two-way communication between the meter and the central system. Such an Advanced Metering Infrastructure (AMI) differs from automatic meter reading (AMR) in that it enables two-way communication between the meter and supplier. An Advanced Metering infrastructure refers to systems that measure, collect, and analyze energy usage and communicate with metering devices such as electricity meters gas meters, heat meters and water meters either on request or schedule.¹¹⁸

The Smart Meter Regulation sets out the minimum physical, functional, interface and data requirements for a Smart Metering System. This covers all classes and types of smart meters, communication systems and other components of an Advanced Metering Infrastructure(AMI)¹¹⁹ deployment in order to measure electrical energy consumption, support billing (Multi-Tariff and Multi-Source) Prepaid and Credit Payment functionality, remote load

¹¹⁴ For reconnection charges, customers on single phase residential will pay N50,000 on first incident and N75,000 on subsequent charges. Three phase residential will pay an initial charge of N100,000 and N150,000 while single phase commercial pays N50,000 and N75,000 subsequently. Three phase commercial pays N100,000 and Maximum Demand Meters customers Pays 300 percent of the last 450 percent of the last authorized recorded monthly consumption.

¹¹⁵ Smart Metering Regulation No. NERC/REG/4/2017

¹¹⁶ Peter (n, 15)

¹¹⁷ <https://n.m.wikipedia.org/wiki/smart-meter>

¹¹⁸ *ibid*

¹¹⁹ *ibid*

Control (connection/disconnection) and to report events/alarms to other control and monitoring system.¹²⁰

Abolition of NERC Order on Capping of Estimated Bills in NESI 2020

With the incessant increase of estimated billing despite the proposed capping for estimated billing, NERC on the 25th day of February, 2020 suspended estimated billing and issued an order: ‘Order on the Capping of Estimated Bills in the Nigerian Electricity Supply Industry (NESI)’ repealing the Methodology for Estimated Billing Regulations 2012.¹²¹ By that Order, estimated billing is repealed and ceases to have effect as a basis for computing the consumption of unmetered customers in the NESI. DISCOs are to ensure that all customers on tariff class A1 in their franchise areas are properly identified and metered by 30th April 2020 while all unmetered RS and C1 customers are not to be invoiced for the consumption of energy beyond the cap stipulated in schedule 1 of [this] the order.¹²² Also, all R1 customers, who by definition consume no more than 50 kilo watt hour (kwhr) of energy per month shall continue to be billed at N4kwhr and a maximum of N200 per month unless otherwise amended by order of the NERC.¹²³ The order further instructs that the energy cap prescribed by the commission shall only apply to R2 and C1 customers, adding that all other customers on higher tariff classes must be metered by DISCOs no later than April 30th, 2020.¹²⁴ Any customer on such higher tariff class not metered by 30th April 2020 shall remain connected to supply without further payment to the DISCO, until a meter is installed on the premises under the framework of Meter Asset Provider (MAP) regulations or any other financing arrangement by the NERC, while those customers whose current estimated bill are lower than the prescribed energy cap shall remain so without any upward adjustment until a meter is also installed under MAP.¹²⁵ Any

¹²⁰ Nigerian Electricity Smart Metering Reeregulation

¹²¹ AdewaleSanyaolu, “NERC abolishes estimated billing by Discos” the Sun Newspaper (Lagos February 25 2020)

¹²² Ibid

¹²³ Ibid

¹²⁴ Ibid

¹²⁵ Ibid

customer that rejects the installation of a meter shall not be entitled to supply and must be disconnected by the DISCO and shall only be reconnected to the network with the installation of a meter.¹²⁶

Conclusion and Recommendation

The problem of metering in the Nigerian Electricity Supply Industry remains an unresolved mystery with a major concern being how Discos will be able to fund the metering infrastructure gap. Historically, Discos were required to meet meter supply obligations to all customers who made advance payments in line with the Credited Advance Payment Metering Initiative (CAPMI) pursuant to an Order issued by the NERC in 2013, however this scheme failed thus necessitating the need for MAP regulation.¹²⁷ The metering gap for all Discos as at December 31, 2017 has been put at 4,740,275 meters¹²⁸ and will presumably increase significantly upon the conclusion of the ongoing customer enumeration thereby revealing huge metering deficit in NESI which will most likely stretch the financial elasticity of the meter funders in the long run, if not managed. Arising from this development, the million-dollar question is whether MAP has fully addressed the financial capacity of the Discos in implementing the meter roll out project as part of their performance obligations whilst tariff remains below the cost reflective price for NESI. Even though MAP regulation is a step in the right direction to solve the metering problem in Nigeria, the non-cost reflective tariff constitutes one of the major drawbacks.¹²⁹

Since the success of MAP is, however, dependent on the success achieved by the Discos, there has to be a tariff regime that will enable the Disco to fund their capex needs, including metering, given that the primary obligation to meter remains with the Disco. It is, therefore, imperative for the key participants to cooperate and work together to curb the retail metering facing NESI. The apparent absence of cooperation between the Discos and MAPs or any electricity supplier is a major factor militating against several

¹²⁶ Ibid

¹²⁷ Samson (n, 83)pg 6

¹²⁸ MAP Reg 4(2)

¹²⁹ Samson (n, 83) pg 6

initiatives churned out by NERC over the years to remedy the defects in NESI.

Furthermore, Discos and MAPs must be seen to be transparent in the charging, receipt and accounting of the periodic Meter Service Charge. As such, it is suggested that in addition to the details required to be published in regulation 8(11) of MAP, Discos should publish the market value of the meters and the estimated period to which the charges apply. This would enable the customers repose confidence in the process and the parties.

The Discos and MAPs must also ensure that the meters to be deployed under the scheme are in tune with modern technology which would enable such meters to be remotely and effectively monitored and read so as to ensure that consumers are charged only for actual consumption and also to help check the prevalent vice of electricity theft. In addition, it is suggested that each Disco is to set up a Meters and Bills Reconciliation Committee or a forum to cater for all meter and electricity charges dispute. The Committee may also be charged with the responsibility of attending to customer's requests and complaints on metering within the licensed area.

It is noteworthy that the *sui generis* nature of the regulation is designed to eliminate the possibility of denying liability through a plea of non-privity of contract between the customers and the Meter Asset Providers. While the MAP regulation allows the parties to determine appropriate dispute resolution methods in their agreements, it must be emphasized that MAPs and Discos will need to obtain adequate legal guidance in drafting their SLAs and MSAs to cater for all possible incidents of dispute.

It is also pertinent to state that for MAP regulations and any other NESI policy to be effective, the consumers of electricity must be supportive of the system by discharging their obligations and contributing their own quota towards the emergence of an efficient NESI since all the participants in the energy value chain though independent yet plays a significant role.