

# Advisory Outlook

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## Bridging the Metering Gap Strategies for Success (Part 1)



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### Background

In 2013, the Nigerian government unbundled the Power Holding Company of Nigeria (“PHCN”) and privatized the generation and distribution segments of the electricity network in a bid to rectify historical challenges experienced in the Nigerian power industry. Through the privatization of PHCN, 6 generation companies (“GenCos”) and 11 distribution companies (“DisCos”) emerged, while the transmission segment of the network remained under the control of the Federal Government.

The key criteria for selecting the successor DisCos was the concept of Aggregate Technical, Commercial and Collection (“ATC&C”) loss reduction over a five year period. The DisCos, as per their Performance Agreement, were required to make capital investments in distribution network infrastructure (including metering) and business re-engineering programs to reduce losses and improve operational efficiency, commercial viability and service delivery.

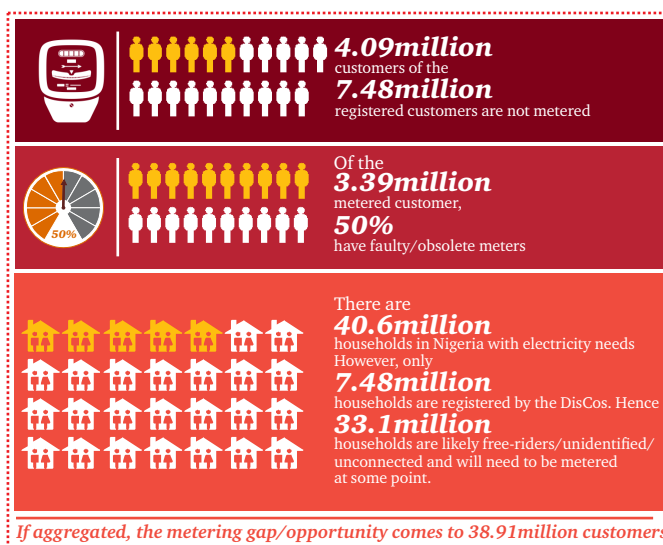
The unbundling and transfer of the successor companies to private entities has, to date failed to deliver the expected benefits. This has been largely attributed to the fact that upon takeover, the DisCos assumed responsibilities and challenges beyond the scale and scope originally envisaged. These include obsolete network infrastructure, non-functioning metering systems, non-cost reflective tariffs, high incidence of electricity theft and equipment vandalism, amongst other pertinent issues. Consequently, the DisCos have been unable to finance and roll out the desperately required strategic initiatives to improve cash flow and service delivery in order to achieve the ultimate goal of ATC&C loss reduction (which is currently at about 45%).

Arguably, metering effectively represents the foundation for sustainable revenue generation and commercial viability of the electricity sector. With electricity as the product offering, DisCos must accurately account for inflows of electricity into their network and outflows of electricity delivered to customers. This enables them provide an assurance of fair billing and payments to and from suppliers and customers alike. The implication is that metering must be a top priority for DisCos and the entire power sector value chain whose respective costs of service are all embedded in the final utility bill borne by the customer. Essentially, the power sector value chain is wholly dependent on the DisCos to provide last mile services to the customer and perform the role of revenue collections.

This critical role is only successfully enabled by an effective and comprehensive metering program that offers accountability and transparency as well as incentivizes customers' willingness to pay.

It is, important to mention, at this point that a comprehensive metering program goes beyond the installation of a metering device for customers. It must also include network metering, customer enumeration and a robust commercial vigilance/revenue assurance framework as all related constituent projects that feed into a robust metering program.

### What is the Metering Gap?



According to the Nigerian Electricity Regulatory Commission (“NERC”), the electricity customer population stands at 7.48 million of which only 3.39million (45.3% of the identified customer population) are metered, leaving the unmetered population – the metering gap – at 4.09 million customers. However, PwC analysis indicates that this figure is significantly understated. Our analysis is hinged on the following factors:

1. At least 50% of the currently installed meters are either obsolete or faulty and hence require replacements.
2. As at 2017, Nigeria's population was 190.8 million, and the projected number of households in the country for the same year was 40.6 million. This implies that only 18.4% of Nigerian households are on the distribution network.

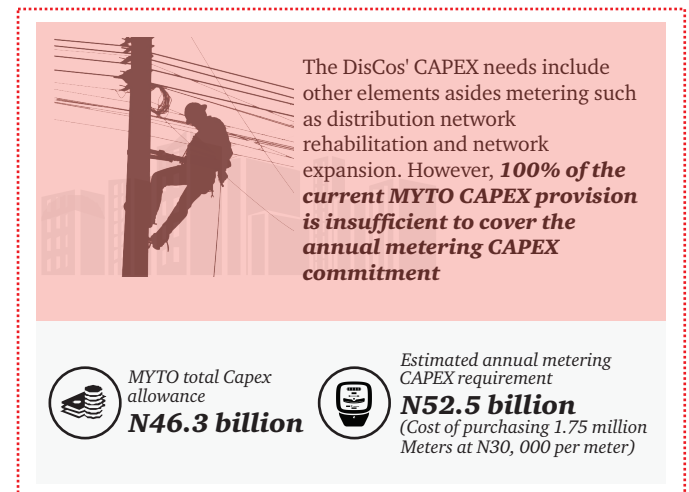
Aggregating these data points shows that a minimum of 1.7 million meters require replacement and 33.1 million households are either not connected to the grid or are consuming electricity illegally. Cumulatively, the overall metering gap in Nigeria based on unmetered identified customers (4.09 million), customers with obsolete meters (1.7 million) and unidentified or unconnected customers (33.1 million) is potentially a population of 38.91 million customers.

### Why the Metering Gap?

Maintaining NERC's conservative figures of 7.48 million known electricity customers, there are at least 5.8 million unmetered and faulty/obsolete metered customers in the country. Assuming that the price of a meter based on open market rates is NGN 30,000, the cost requirements for bridging the metering gap is approximately NGN 174 billion. However, using the unknown, unconnected, unmetered, obsolete metered customers from our analysis, the cost estimate is NGN 1.17 trillion.

Given the current realities, DisCos are faced with several deterrents which present a challenge for bridging the gap.

Although, the 11 DisCos committed to metering 1.75million customers annually on acquisition of the distribution assets, the metering capacity of the DisCos is constrained by the limited allowable capital expenditure (“CAPEX”) in the Multi-Year Tariff Order (“MYTO”). The total annual CAPEX provision of N46.3 billion in the MYTO, if utilized wholly for metering is insufficient to meet the DisCos' annual metering commitment which is estimated at N52.5 billion annually. However, it is imperative to note that metering is just one of the various CAPEX requirements for the DisCos. If 100% of the current MYTO provision is spent on metering, DisCos will have capacity to meter 1.54 million customers annually. From our estimation of the actual metering gap, it will take at least 25 years to bridge the metering gap.



Asides the inadequate CAPEX provision, the other factors limiting investments in the sector and by extension metering programs include infrastructure constraints, liquidity challenges and high value chain losses. Nigeria's total generating capacity is only 30% of the total installed capacity due to technical and gas supply restraints. Furthermore, the available 30% generation capacity further records a 52% loss across the value chain from generation to distribution. This limits the amount of revenue that can be generated by the DisCos and the bankability of proposals to potential funding partners to undertake the required capital investments in metering.

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