

# Nigerian Electricity Supply Industry

Market Diagnostics & Solutions Framework



JUNE 2020

# Background of the Nigerian Electricity Supply Industry

**2005**

- Formation of PHCN.
- Establishment of Nigerian Electricity Regulatory Commission (NERC).
- Enactment of Electricity Power Sector Reform Act (ESPRA).
- Created the National Integrated Power Projects (NIPP) Program.
- Establishment of Rural Electrification Agency (REA).

**2008**

- Power Sector Reform Committee presents Power Sector Masterplan.
- Introduction of Multi Year Tariff Order (MYTO) Committee.

**2011**

- Announcement of shortlisted firms for the acquisition of PHCN power assets.

**2012**

- Management contract with Manitoba Hydro of Canada for the Management of TCN.
- List of preferred bidders for 10 Distribution Companies and 5 Generation Companies were released.
- Issuance of MYTO-2

**2014**

- Announcement of Preferred Bidders for 10 NIPP assets.
- Creation of N213bn Power Bailout fund.

**2006**

- PHCN was unbundled into 18 Independent Companies.
- Commencement of 10 Generation Plants under NIPP.
- Establishment of Market Operations Department of TCN

**2007**

- The Presidency announces a 7-point Agenda with power energy on top of the List.

**2010**

- The BPE requested for Expression of Interest (Eoi) for PHCN Successor Companies.
- Presidential Action Committee on Power (PACP) and Presidential Taskforce on Power (PTFP) were established.
- Issuance of Multi Year Tariff Order (MYTO).
- Established the Nigerian Bulk Electricity Trading Ltd. (NBET)

**2013**

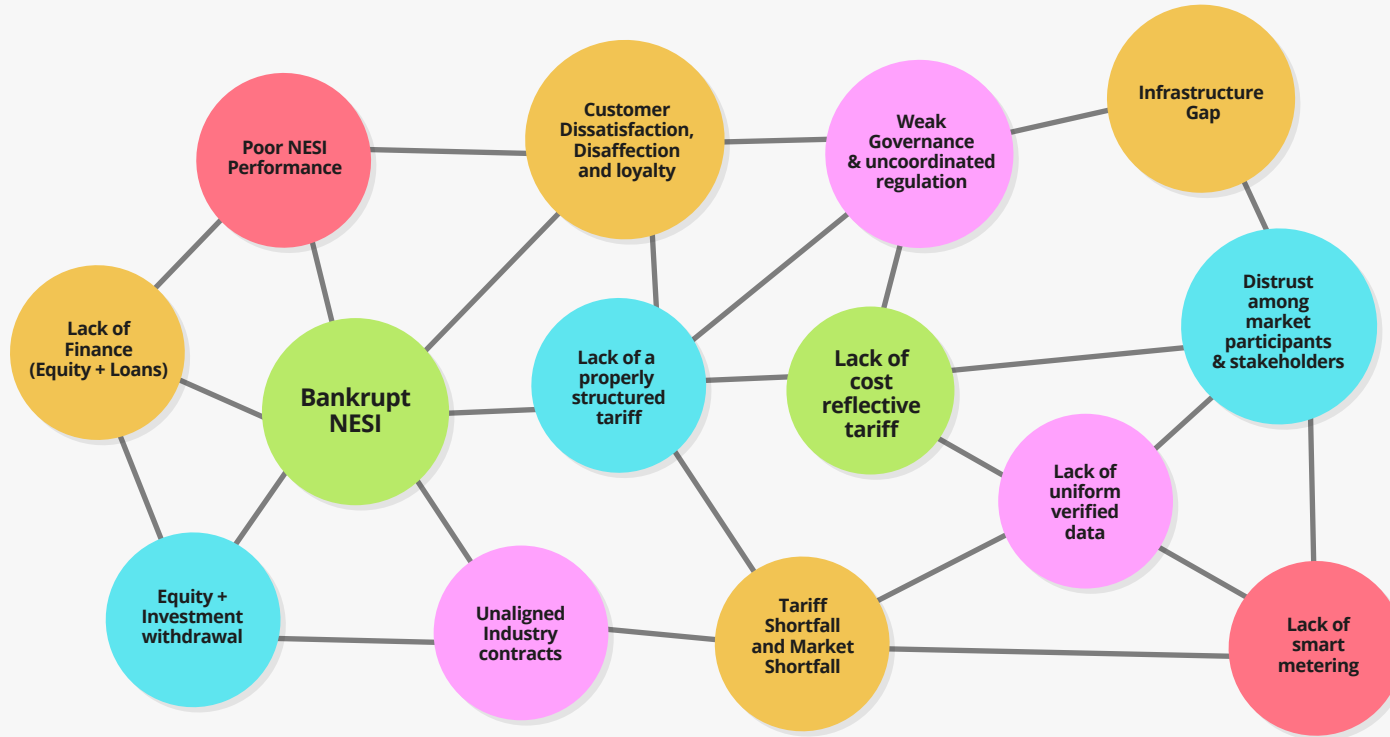
- Privatisation of 11 Distribution Companies and 5 Generation Companies.
- Signed MOUs for coal power partnerships

**2016 - Date**

- Commencement of Transitional Electricity Market (TEM).
- Issuance of MYTO 2.1.
- Created Power Sector Recovery Plan.
- Created N701bn Bailout Fund.
- Created N600bn Bailout Fund.
- NICE issued to 8nos Discos

## Issues arising from Current NESI status are Evolving and Mutating.

NESI is in a vicious cycle, which has a major effect on performance improvement. The increasing liquidity crisis poses a major risk to Nigerian banking sector.



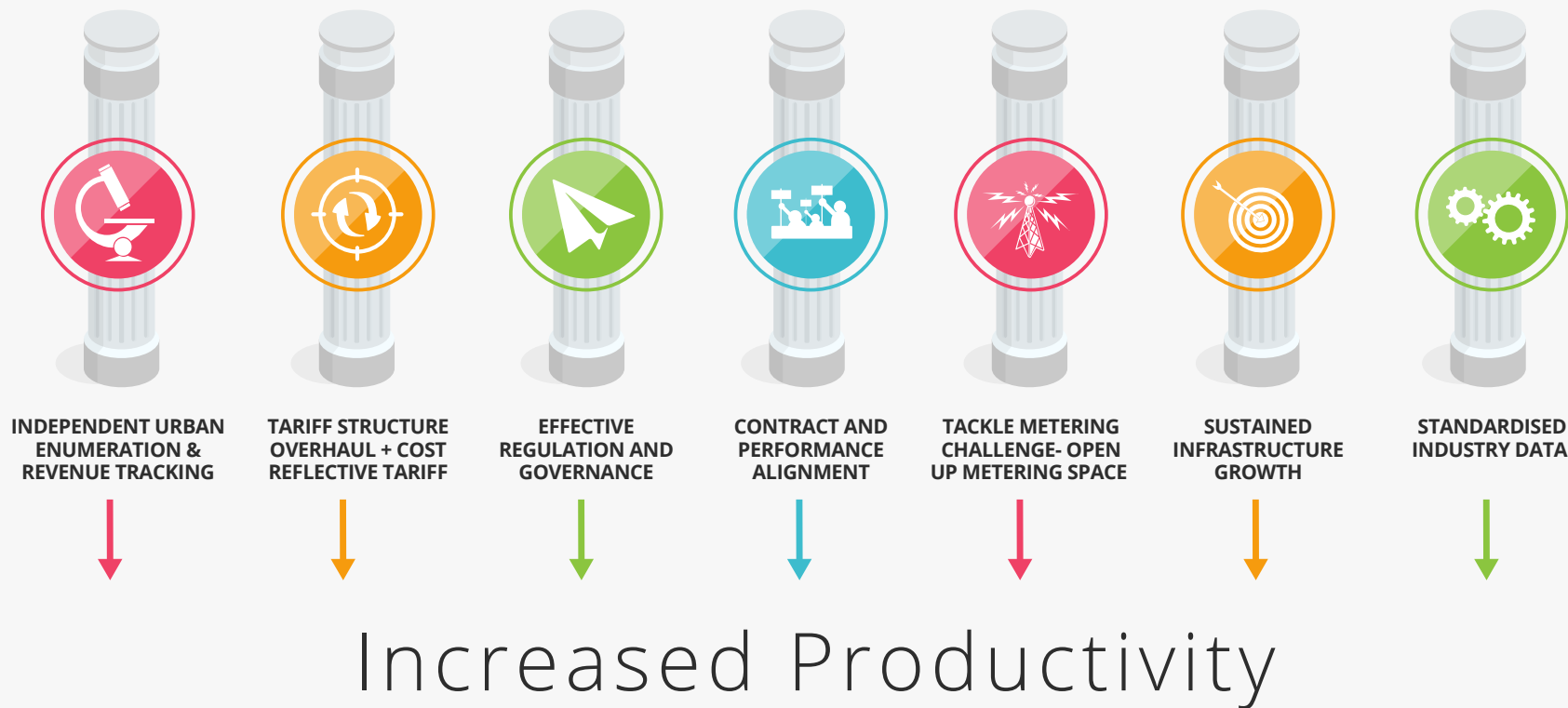


The market potential exists –

*Nigeria spends N5.075trn annually to power generators. - AfDB (Dec. 2019)*

**Create and Operate a  
Successful Electricity Market.**

## 7 Pillars for Creating a successful Electricity market.



## Immediate Actions to Create a Successful NESI Baseline Market.



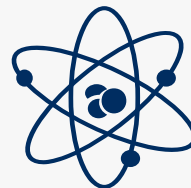
### Action 1

**Independent Urban Enumeration  
and NESI Revenue Tracking**



### Action 2

**Tackle Metering Challenge  
– Open-up Metering Space  
Independent Urban Enumeration  
and NESI Revenue Tracking**



### Action 3

**Cost Reflective and Fair  
Electricity Tariff**



### Action 4

**Sustained Infrastructure  
Growth**

# Nigerian Electricity Supply Market Diagnostic and Solutions Framework

## ACTION-1: INDEPENDENT URBAN ENUMERATION AND REVENUE TRACKING

A

### Independent Urban Consumer Enumeration

- Standardised electricity-focused enumeration of urban areas by NERC/Alternative Team, supported by international development partners.
- Enumeration to convert urban consumers to costumers.
- All NESI customers across the 11 DisCos will have unique ID Numbers.
- Enumeration Customer Data to be uploaded into Power Sector Integrated Information System.
- Process of updating customer numbers by DisCos to be defined and centralized.

B

### Regulate Invoicing + Collection Activities (Track all Collection)

- NERC to regulate collection activities of DisCos.
- NERC to regulate invoicing (billing).
- All smart meters to be uploaded on Power Sector Integrated Information System for financial and energy information tracking. (Already in Progress, in line with Presidential Directive. Ensure Monitoring Systems are fully in place)

C

### Centralised NESI Data Management and Monitoring by NERC

- Implement the Power Sector Integrated Information System (PSIIS) - Online Platform for Integrated Data + Information + Risk Management. (Spanning from real time data on gas infrastructure to customer data).
- PSIIS to be capable of tracking ALL NESI customer payments.
- PSIIS to be integrated with Nigerian Interbank Settlement System
- PSIIS to be owned by NERC + NESI.
- Data Management System should have monitoring capabilities of ALL smart meters.

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## ACTION-2: TACKLE METERING CHALLENGE – OPEN UP METERING SPACE

A

### Deploy New Metering Strategy

- Adopt smart meters and support infrastructure (HV to Customers), for monitoring, energy/financial data validation.
- All new meters MUST be smart and pre-paid.
- Update All Metering Regulations and Orders to make Landlords responsible for the procurement of smart meters for all new Grid connections.
- All individual electricity consumers must have smart meters to be connected to the Grid.
- CBN to consider providing meter credit purchase to Landlords via commercial banks.
- FG to consider a floating bond in support of Meter Manufacturing in Nigeria.
- All new meters will only have to meet the minimum smart standards.

B

### Opening the Nigerian Electricity Metering Space

- All firms can import/manufacture and sell meters (based on NERC specifications) and must be registered with NERC.
- Cost of smart meters will be deregulated and will depend solely on market factors and meter functionality.
- All meters must meet the minimum 30% local content threshold.
- Only DisCos/MAPS can certify, calibrate and install meters.
- Any DisCo that connects Consumer to the Grid without enumeration or metering will be penalized.
- NAPTIN and NEMSA will commence training of thousands of Nigerians on smart meter installation/repairs.
- Consider **suspending ALL duties on electricity meter components** for 5 years.
- Incentivise local manufacture of meters with **Tax Holidays**.
- Customers will be enumerated during the metering process.
- Law **criminalizing meter by-pass** will be passed.



# Nigerian Electricity Supply Market Diagnostic and Solutions Framework

## ACTION-2: TACKLE METERING CHALLENGE – OPEN UP METERING SPACE (contd)

**C**

### Procurement and Deployment of 1million meters by FGN

- FGN to be responsible for the procurement of initial 1million smart meters, with support smart infrastructure.
- Smart meters to be deployed across the 11 DisCos by MAPs.
- Deployed meters to be activated on the Power Sector Integrated Information System for tracking.
- Cost of 1 million smart meters to be accounted for under re-capitalization of 40% FGN Equity in DisCos.
- DisCos to nominate feeders and segments to be metered.

**D**

### Smart Metering Campaign for Distribution Companies

- Only DisCos/MAPs are to be allowed to certify, seal and install meters.
- NERC to issue Regulation that Meters cannot be removed from buildings.
- Buildings can only be connected to the Grid by the DisCo, if meter is deployed by Disco or MAP.
- Smart meters once deployed, are under the custody of the Disco.
- Landlords to engage MAPs/DisCos, for the certification, calibration and installation of meters, after they buy meters.

# Nigerian Electricity Supply Market Diagnostic and Solutions Framework

## ACTION – 3 : SUSTAINED INFRASTRUCTURE GROWTH

**A**

### On-Grid Electricity Growth via PPI

- Commence implementation of Presidential Power Initiative – Siemens Infrastructure Project.
- First wave of growth to be premised on deployed urban areas with high density of pre-paid smart meters - to stabilise power sector financial flow. Align Siemens Infrastructure project will installation of pre-paid smart meters.

**B**

### Restructure NESI Loans

- Increase the repayment moratorium period on the Nigerian Electricity Market Stabilization Facility (NEMSF) by 24 months.
- Allow lending provisions by Banks to the DisCos to rank in conjunction with the CBN NEMSF to encourage further lending in the sector.
- FGN should consider write-off of all NEMSF provisions from books of the DisCos.
- CBN NEMSF to be restructured for longer duration (15 years) inclusive of a 2-year moratorium on principal and interest rate reduced from 10% to 5%;
- Acquisition debt to be refinanced by CBN to Naira loans and extended on a longer-term basis (10 years), with single digit interest rate and moratorium of two years to allow market to stabilize.
- Banks should be given a favorable prudential guideline on refinancing acquisition loans to avoid banking system crisis.

**C**

### Re-capitalisation of the Discos + Incentivize profit Re-investment

- Validate Historical Tariff under-recovery and amount owed NBET by DisCos.
- Cost of 1million pre-paid smart meters and metering support = FGN Disco Re-capitalisation.
- Cleanup DisCos' balance sheets (overstated/understated), segregate the insolvent from solvent, replace/payoff old owners. Request new DisCo owners to recapitalize DisCos.
- Deploy State Government Representatives on Boards of DisCos.
- Incentivise investors to re-invest profit in power sector for the first 5 years.

# Nigerian Electricity Supply Market Diagnostic and Solutions Framework

## ACTION - 4: COST-REFLECTIVE AND FAIR ELECTRICITY TARIFF

A

### Major Review of Tariff

- Close the BPE Performance Contract cycle in June 2020 and start new Performance Cycle.
- Clear GenCo Historical debt. Stop the use of Sovereign Guarantees in procuring power and power related projects.
- Tariff to be based on Asset-Based Regulatory Structure.
- Regulator to consider transferring Power Evacuation risk for new IPPs to IPPs. TCN to only be responsible for electricity wheeling risk.
- Regulator to consider transferring Gas Transportation risk to NGC.
- Consider providing special FOREX window for power sector loan repayment.
- Relevant stakeholders including the legislative arm and Civil Society Organizations should be transparently carried along in the tariff review process to ensure stakeholder buy-in.

B

### Tariff Structure and Methodology

- Remove Aggregate Technical Commercial & Collection (ATC&C) Losses, as this cannot be transparently and objectively measured (currently no meters).
- Replace ATC&C Losses with deregulated prices - Fix the Wholesale price for GenCos and cap Retail prices within the **Lifeline**, **Peri-Urban** and **Commercial** tariff price range.
- Maintain a 3-tier tariff structure- **Life Line**, **Peri-Urban** and **Commercial**. (Commercial to subsidize **Lifeline** + **Peri-Urban** tariff).
- **Automate** Minor Tariff Reviews

C

### Tariff Structure Overhaul + Cost-Reflective Tariff

- Align all updated Transaction Contracts to MYTO. MYTO premised on verified Asset base.
- MYTO to be based on enumerated customers who are metered.
- MYTO to be three tiers - Life Line, Peri-Urban (30% energy cap) and Commercial (70% energy cap) – capped at 40% Discount to Average Self-Generation). Commercial tariff - to be cost reflective, overall.
- DisCos to be responsible for customer segmentation into Lifeline, Peri-Urban and Commercial classes but based on energy consumption.

# Nigerian Electricity Supply Market Diagnostic and Solutions Framework

## ACTION - 4: COST-REFLECTIVE AND FAIR ELECTRICITY TARIFF

**D**

### Disco Asset Inventorisation

- Regulator to issue guideline for DisCo Asset Inventorisation.
- DisCos need to develop their asset inventory, verified by the NERC.
- DisCo Asset Register to be taken into consideration in tariff determination.
- Conclude DisCo asset inventorisation before tariff review. Any other indicator that is to be used as input to tariff determination should be independently verified.

**E**

### Modified Role of NBET

- NBET to play the role of 'price differential absorber' for the electricity market.
- NBET to absorb market shortfalls, pending re-capitalisation of the affected DisCo.
- FGN can regulate tariff via NBET. If FGN decides to restrict the price of electricity, NBET to pay the price differential on GenCo invoice (i.e. shortfall between what it collects from DisCos and what is invoiced by GenCos.)
- FGN to expand NBET's mandate to cater for financial shortfalls, via a range of financial instruments.
- NBET to ensure all Transaction Contracts are aligned (load schedules and risks).

# Stablised Nigerian Electricity Market

## No More Government Financial Support



- ✓ **100,000 new semi-skilled + 1,000 skilled jobs.**
  - ✓ GDP Growth.
  - ✓ Sustain Energy supply and payment for 4,500MW.
  - ✓ Commence target 18hr power supply to key cities.
  - ✓ No more FGN Support to NESI

## Expected Outcomes



The Nigerian Electricity Supply Industry requires major intervention if the gains of the Power Sector Reforms are to be realised. The liquidity crisis is not the problem, but a key symptom of the problem that can be solved.



The supply of 4.5GW and payment for electricity should be used as a foundation for the growth of the Nigerian Electricity Supply Market, to 7GW, 11GW and 25GW.



When the challenges of the Nigerian Electricity Supply Market are fixed, it will have a ripple effect on the Nigerian Electricity Supply Industry. This will provide a major boost to Industrial growth in Nigeria.



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