

Performance Improvement Plan

For Ibadan Electricity Distribution Company

September 2019

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Acronyms

Acronym	Definition
AMI	Advanced Metering Infrastructure
ATC&C	Aggregate Technical, Commercial and Collection Losses
BPE	Bureau of Public Enterprises
CAPEX	Capital Expenditure
CMS	Commercial Management System
Disco	Distribution Company
ERP	Enterprise Resource Planning
GIS	Geographical Information System
IBEDC	Ibadan Electricity Distribution Company
IRMS	Incidents Recording and Management System
IT	Information Technology
MAP	Meter Asset Provider
MDA	Ministries, Departments and Agencies
MO	Market Operator
MYTO	Multi-Year Tariff Order
NBET	Nigerian Bulk Electricity Trading Plc.
PHCN	Power Holding Company of Nigeria
PIP	Performance Improvement Plan
RPP	Revenue Protection Project
SCADA	Supervisory Control and Data Acquisition System
WACC	Weighted Average Cost of Capital
WMS	Works Management System

1 One-page Summary for Stakeholders

During the privatization process, Integrated Energy Distribution and Marketing Limited (IEDM) through a special purpose vehicle, acquired a 60% stake in Ibadan Electricity Distribution Company (IBEDC) PLC in 2013 with 32% and 8% stake held by the Bureau of Public Enterprises (BPE) and the Ministry of Finance Incorporated, respectively.

IBEDC is primarily responsible for the distribution of electricity to Ogun State, Oyo State, Osun State, Kwara State and parts of Ekiti State and Niger State. Our goal is to generate and increase value for our customers, shareholders and other stakeholders in a sustainable manner with an objectives driven by the need to expand access to electricity for customers (both expansion and network availability), improve technical and operational performance within the franchise area (including -but not limited to- loss reduction) and break even within the time horizon while responsibly managing the socio-economic and environmental impacts of our activities. We currently serve over 1.5 million customers and have a staff strength of about 2612 permanent and 1203 temporary workers.

IBEDC's network is supplied from a transformation capacity of 2,088 MVA from across 22 TCN transmission stations. 112 33kV feeders supply 33/11kV power transformers across 119 injection substations. There are 9,137 11/0.415kV distribution transformers and 5,689 33/0.415kV distribution transformers served by IBEDC. The total transformational capacity of the 11/0.415kV and the 33/0.415kV distribution transformers are 2,667 MVA and 2,152MVA respectively. The route length for the 33kV, 11kV, and 415V feeders are 1,642.3km, 2,496.6km, and 5,927.4km respectively, resulting in a total route length of 10,065.2km.

Key outcomes from IBEDC's PIP include the reduction of ATC&C losses to 19% by 2024, 100% metering of all customers by 2024 and the improvement of customer satisfaction. The investment requirements to achieve the performance agreement targets will result in a tariff increase that reflects our actual loss performance. This increase in tariff will enable us to successfully deliver our performance plan.

Over the next five years, IBEDC plans to invest over N83billion in its network to expand capacity in line with our demand growth, replace assets and deploy state-of-the-art technology to improve the efficiency of our operations.

Our strategy over the next years is to aggressively reduce losses by deploying meters across our network to improve energy accountability and collection efficiency. Our performance strategy will be achieved by driving our efficiency through innovation.

2 Overview

We are committed to adequately powering our franchise areas. We understand that our activities impact on millions of Nigerians and their businesses on a daily basis, so we are strategically driven to deliver improved standards of living to the numerous Nigerians who depend on our services by lighting up homes and businesses, thereby stimulating economic growth and development “BY BRINGING ENERGY TO LIFE”.

For IBEDC, we are committed “To be the best power distribution company in Nigeria”.

Since takeover we invested heavily in improving our systems and infrastructure geared towards improved service delivery and meeting our target baseline Aggregate, Technical, Commercial and Collection (ATC&C) losses. A huge amount of investment (funds, human capital development, etc.) has gone into acquiring leading edge information technology (IT) infrastructure to achieve automated systems geared towards eliminating the incidence of human errors in order to significantly reduce losses.

To consolidate on our successes which has focused on building customer and stakeholder confidence in our business and processes, and advance our vision of being the provider of choice wherever energy is consumed, our performance improvement plan focuses on reducing losses by driving efficiency through improvement in business processes by implementing strategies to actualize our goals over the next five years. Some of these goals include reducing out ATC&C to 19% by 2024, recording zero deaths and casualties to both employees and stakeholders in our coverage area, achieving 100% metering of all customers by 2024.

Key challenges such as the lack of a cost reflective tariff, eligible customer declaration, customer apathy to payments, energy theft and meter bypass continue to plague our business and in effect, the market illiquidity being experienced by NESI. Our ability to attain our goals depends on the successful implementation of our risk mitigation strategies and obtaining the necessary regulatory support over the next five years. The challenges in the industry are daunting, the stakes are high, but we are determined to succeed.

Our long-term goals and objectives are to continually be the front runner in the electricity supply industry and to be the reference point across Africa as the epitome of success in the electricity distribution space.

2.1 Summary of process

IBEDC has followed a robust process to prepare this plan and justify our planned expenditure. We have adopted a bottom up approach to developing our performance improvement plan by designing a strategy with inputs from stakeholders and all the departmental teams in IBEDC.

This approach fosters a shared sense of responsibility and deepens collaboration between both internal and external stakeholders, which are key ingredients required for the successful implementation of this plan.

Business planning has been aligned with stakeholder expectations to determine our achievable goals, the cost of implementation, manpower requirements, required technology to be deployed and the innovative approaches to maximise available resources to attain optimal operational efficiency and business performance.

We have also performed a risk evaluation of our business by considering the key challenges to the successful implementation of this plan and have designed risk mitigation strategy to enable us to attain our goals.

The process is described in more detail in Section 3.

2.2 Scenarios

This PIP considers three scenarios – Zero CAPEX scenario, Regulatory Allowed CAPEX and IBEDC Required CAPEX Scenario.

The key characteristics of the scenarios are:

- **“Zero CAPEX” Scenario** based on NERC’s tariff and loss assumptions from the latest minor review (June 2019), which treated the end of 2020 as year 4 of ATC&C loss reduction;
- **“Regulatory Allowed Capex” Scenario** – The Capex and Opex requirements as well as end-user tariffs are as stipulated in the June 2019 Minor Review MYTO Model. In this scenario, it is modelled that IBEDC has access to the approved CAPEX and OPEX to determine IBEDC’s achievable loss reduction trajectory from 2020 to 2024 which is not as aggressive as NERC envisages in the Minor Review Model;
- **“IBEDC Required Capex” Scenario** – The Capex and Opex requirements are higher and reflect what is needed, and can be afforded if tariffs are cost-reflective, to achieve loss reduction (more than in the “Regulatory Allowed Capex” scenario), although still not as aggressive as NERC envisages in the Minor Review Model.

The “Zero CAPEX” scenario is currently the most probable, as it is consistent with the operational realities of IBEDC. However, the “IBEDC Required CAPEX” scenario allows IBEDC to achieve their realistic and required output goals.

The scenarios are described in more detail in Section 4.3.

2.3 Outputs with intervention

Over five years, the realistic “IBEDC Required CAPEX” scenario will allow IBEDC to:

- Reduce ATC&C losses from the current level of 46.0% to 19.1%, which will allow our business to be sustainable;
- Reduce the number of customer interruptions from the current level of over 20,000 per year to less than 7,000 per year, increasing reliability for our customers;
- Increase the number of customer connections from the current level of 1,572,424 to projected 2,278,064¹ customers.
- Significantly reduce the number of deaths and accidents in our service area.

These outputs are discussed in Section 4.4.

The justified investment plan to achieve these objectives is in Section 6.

2.4 Navigating this report

A map is required by the NERC Guidelines (p23)

Table 1: Mapping the structure of this report to NERC criteria

NERC criteria for evaluating the PIP	NERC questions for the PIP	Hyperlinks
Criterion 1 - Process	Has the Disco followed a robust process?	Section 3: Process
Criterion 2 - Outputs	Detail of individual outputs.	Section 4.4: Outputs: strategic objectives
	Does the Plan deliver the required outputs?	Section 6: Detailed Program Plans
Criterion 3 - Expenditure	Are the costs of delivering the outputs efficient?	Section 6.2: Delivering outputs efficiently
	Detail of individual cost items.	Section 6: Detailed Program Plans Section 6.9
Criterion 4 - Financing	Are the proposed financing arrangements efficient?	Section 7.3: Funding Plans

¹ This number does not take into consideration possible sub-franchising that may come up in IBEDC

	Detail of individual financing areas.	Section 7.3: Funding Plans
Criterion 5 - Uncertainty and Risk	How well does the Plan deal with uncertainty and risk?	Section 8.2: Approach to managing risk
	Detail of individual uncertainty area.	Section 8.3: Risk analysis

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3 Process

3.1 Overview

NERC PIP Guidelines p23:

Each section of the plan should have an overview and contents page. It should be easy for readers to get to the information they require (using hyperlinks).

This section covers:

- [Process for stakeholder consultation and engagement;](#)
- [Process for demand forecast;](#)
- [Process for setting output goals;](#) and
- [Process for investment planning.](#)

3.2 Process for stakeholder consultation and engagement

The stakeholder engagement strategy commenced internally in IBEDC, with all staff and vendors being made aware of the need for, and process of developing a Performance Improvement Plan. Management communicated the need for a good understanding of the PIP as all would have a role to over the next five years play in achieving its objectives and goals.

For effective outcomes, feedback was forwarded to the respective departments for action and internal meetings were organised to deliberate on the feedback. This approach enables us to enhance the mutual relationship between us and our internal stakeholders, increase motivation, provides value for the next line of action, helps formulate engagement policy for improved working relationships and aligns the goals and objectives of IBEDC for better service delivery.

In line with the feedback from stakeholders, our performance plan has been developed to ensure our outcomes are in sync with stakeholder expectations. Our electricity distribution plan has been designed to improve power supply reliability and ensure optimal equipment availability by utilising a detailed demand forecast to drive network investment. Our metering investment plan via IBEDC roll-out and MAP will deliver 100% customer metering by 2024 and thereby eliminate customer mistrust issues arising from estimated billing. Our commercial operations plan will see IBEDC invest in state-of-the-art software that will guarantee efficient billing, incident reporting, customer complaint resolution efficiency, real-time equipment monitoring, operational efficiency and business cost visibility to enable cost savings. Our

customer service plan will deliver customer interface platforms that facilitate 100% customer complaint resolution and improve revenue growth through the accurate capture of customer data. Our safety plan which enhances safety accountability at all levels, aims to deliver zero casualties through resourceful safety training programmes for both staff and stakeholders, and the procurement of quality safety equipment.

For our external stakeholder, the engagement program is geared towards gaining maximum value from each event adopted. This is achieved while applying two distinct aspect of engagement:

- Tailored Content, before, during and after the event.
- Tailored methods, to reach a wide and varied stakeholder base.

The content of engagement varies from one set of customers to another. Customers can be categorised by their level of understanding and knowledge of the electricity sector. We have proposed four levels: customers with little or no knowledge, with some knowledge, with good knowledge and the rest with expert knowledge.

Separating customers into these groupings is germane to the communications and engagement strategy that should be applied to each as shown in the following Figure 1.

Figure 1: Method of Stakeholder’s Engagement



Annex A provides the detailed results of the stakeholder engagement.

3.3 Process for demand forecast

The demand analysis was conducted using an econometric analysis. It uses our 2018 hourly load data to develop two distinct models, a structural and dynamic regression model:

- The structural model is applied to consistently energized feeders to develop and reconstruct unsuppressed demand data based on the historical observations (recorded data) of suppressed demand on the feeder data set.

- For poorly energized and sparsely populated feeders, the dynamic regression model is applied to develop the hourly demand timeseries using the influence of customer behaviour and seasonal pattern on demand consumption, observed on well energized feeders.

Detailed result obtained from the demand study is shown in Annex E.

3.4 Process for setting output goals

Our stakeholder engagement process provided feedback on the customer priorities and informed our overall strategy which is to deliver a reliable energy service and guarantee customer satisfaction. In order to define our goals, we assessed our performance against our performance agreement with the Bureau of Public Enterprises (BPE) to identify key successes and challenges for unattained KPIs. A demand and energy supply gap analysis was performed, which to determine network infrastructure investments. Investment plans and innovative strategies to meet other KPIs including loss reduction, MAP support and customer connections were then developed.

Our investment plans were then prioritized using the feedback from stakeholders, supported by an optimal plan for network expansion. The impact of our investments and outcomes on tariffs and business performance were assessed using two scenarios with different ATC&C loss trajectories. The feedback on our planned outcomes were then shared with stakeholders who gave feedback, and which has been used to finalize our performance plan.

3.5 Process for investment planning

3.5.1 Process for electricity distribution planning

Our investment plan is guided by our strategic plans which include;

- Ensuring 100% metering and optimal customer satisfaction
- Ensuring metering billing and inspection is automated.
- Centralization of management assets and network information integrated to customer data to maximize reliability and efficiency
- Deployment of a robust SCADA system utilizing communications media to control and manage the following electrical assets

The objective of our investment planning process is to deliver cost efficiency through innovative strategies implemented using a least cost plan that guarantees optimal returns,

operational efficiency, safety, excellent customer experience and sustainable energy supply. The liquidity challenges currently being experienced by NESI requires financial prudence and sensible utilisation of scarce capital to underpin our investment plans. The following sections detail the summary of our processes in developing our investment plan.

The detailed investment planning is shown in section 5 and section 6.

3.5.2 Process for commercial operation planning

NERC has set out expectations for some software applications to support commercial operations.

The current IBEDC system supports the following;

- Identification and resolution of interruptions and linked to customer database, integration of customer and asset database, creation of a centralized network asset database and IRMS integration
- Billing, service anomalies, billing adjustment, payment processing, service application, customer support, meter management system, meter information system and energy sales and
- Enabling of companywide financial management, accounting data integration, logistics support, human resource and procurement support.

Details on ongoing effort to improve the system capabilities to meet up with the set standard in the NERC PiP is shown in section 6.5.3

3.5.3 Process for meter investment planning

IBEDC have embraced two distinctive measures to close its metering gap. These measures are:

- NERC Meter Asset Provider Program;
- IBEDC Meter Roll Out Scheme

NERC Meter Asset Provider Program: this is expected to cover total metering gap of 988,917 meters. The first set of procurement admitted seven registered MAPs, listed by the Commission. They are each allocated an area of operation and specific monthly metering target which is expected to be covered by year 2021. (see attached IBEDC MAP Metering Plan)

IBEDC Meter Roll-Out Scheme: this is targeted to cater for new connections and the replacement of existing faulty meters. The total numbers estimated for these categories of

customer is 379,300 meters. This scheme is programmed to cater and avoid any future metering gap.

The meter investment planning is explained in detail in section 0 and section 6.4.

3.5.4 Process for safety investment planning

Health and Safety investment will help IBEDC achieve the following targets:

- Create awareness on the need for safety for staffs and customers of IBEDC
- Ensure IBEDC's staffs are adequately equipped with PPE and well trained on the usage
- Improved mental health of IBEDC's staffs for optimal job performance
- Reduce the number of deaths and accidents in our service area to zero.

The detailed Health and Safety explained in section 0.

4 Introducing the Context for this PIP

4.1 Overview

This section covers:

- [Introduction to IBEDC](#);
- [Scenarios in this PIP](#)
- [Strategic objectives](#); and
- [Challenges](#).

This chapter provides the information required by NERC in an “introductory chapter”.

4.2 Introduction to IBEDC

4.2.1 Vision

“To be the best power distribution company in Nigeria”

4.2.2 Mission

“Distributing power, changing lives”.

4.2.3 Overall strategy

The objectives of the IBEDC PIP Plan for the next 5 years will be driven by the need to expand access to electricity for customers (both expansion and network availability), improve technical and operational performance within the franchise area (including -but not limited to- loss reduction) and break even within the time horizon. In order to address the current problems in IBEDC and achieve the objectives, its management will implement a comprehensive plan focused on:

- Facilitating access to the network for customers (both old and new)
- 99% metering coverage for all customers
- Energy Availability (revenue increase),
- Reducing ATC&C losses in line with performance agreement,

- Reduction in operating costs by leveraging on technology,
- Breakeven within the next 5 years
- Improving customer experience through technology,
- Improving Customer Communication and engagements
- Implementing a Corporate Social Responsibility program
- Employee empowerment through quality training programs and competitive remuneration packages
- Intense customer engagement through diverse means.

4.2.4 Business environment 2013-2019

Following the privatization of the distribution companies in November 2013, the Discos have continued to operate in an adverse business environment which has led to limited progress in the performance improvement of the Discos. Some of the factors that have made the business environment very challenging are discussed below.

4.2.4.1 *Lack of cost reflective tariff*

At the time of privatization of the Discos, the Multi Year Tariff Order II (MYTO II) was in effect. However, it became clear during the privatisation process that the key assumptions of the MYTO II (including generation levels, ATC&C losses and customer numbers) were inaccurate and resulted in tariffs that were not cost reflective. Since the true PHCN performance was not known, NERC and BPE agreed that the new owners of the Discos should carry out a study to determine their baseline losses and real customer numbers at the time of privatization, and this would be the basis of a tariff reset.

Despite this commitment, the full cost of the electricity value chain has never been allowed to pass-through to tariffs since privatisation. Table 2 shows a summary of the major events that mean tariffs have not been cost reflective. Table 44 in Annex B provides a more detailed timeline.

Table 2: Summary timeline of key tariff challenges

Year	Tariff cost reflective?	Events
2013	No.	– Privatisation process recognised that tariff review would be required once true level of ATC&C losses were understood. Interim Rules Period

Year	Tariff cost reflective?	Events
		(IRP) introduced to recognise Disco's inability to pay the market until tariffs were cost reflective.
2014	No.	<ul style="list-style-type: none"> - Discos conducted Baseline Losses Studies to determine true levels of ATC&C losses.
2015	No. Only 2 months (February and April) where tariffs were closer to cost reflective.	<ul style="list-style-type: none"> - Commencement of TEM in February 2015. Discos were expected to pay full market invoices from this date. - February 2015 was the start of revised tariffs based on a new tariff model known as MYTO 2.1 which recalculated tariffs based on the results of the Disco's baseline losses study. However, MYTO 2.1 assumed that the Discos has started their loss reduction path in January 2013. This meant that tariffs were not truly cost reflective. - In April 2015, tariffs are amended to strip out collection losses. The removal of collection loss led the majority of the Discos to issue notice of Force Majeure under their Performance Agreements in 2015. - Minor reviews not implemented.
2016	No. MDA debts still not resolved. Minor reviews not implemented.	<ul style="list-style-type: none"> - New MYTO 10-year tariff order from February 2016, reinstated most collection losses but reduced allowed losses by removing Ministries, Departments & Agencies (MDA) debt. The intention was for FGN to pay these historic liabilities and introduce a mechanism to meet future bills. Addresses one of the flaws of MYTO 2.1 by adjusting the assumed first year of loss reduction from 2013 to 2015. - From March 2016, generation dropped dramatically as a result of insurgency, Discos revenue decreased dramatically as a result of less power to sell. - From May 2016, foreign exchange weakens considerably, and PPA indexation means cost of generation jumps from 12 N/kWh to 18 N/kWh. - Six monthly minor reviews in June and December were not implemented, these should have incorporated the impact of the generation level and foreign exchange in retail tariffs.
2017	No.	<ul style="list-style-type: none"> - Six-monthly minor reviews in June and December were not implemented in tariffs. - MDA payments have still not been resolved.
2018	No.	<ul style="list-style-type: none"> - Tariff freeze in January 2018, when NERC instructed the Discos to freeze their tariff at the 2017 level. - Six-monthly minor reviews in June and December were not implemented. - MDA payments have still not been resolved.
2019	No.	<ul style="list-style-type: none"> - Six-monthly minor review in June was implemented, but revised tariffs were delayed until January 2020, so tariff remains not cost-reflective. - MDA payments have still not been resolved.

The NERC tariff review process was designed with the intent to undertake major reviews every five years, in addition to minor reviews every six months to adjust tariffs for changes to the gas price, the foreign exchange rate, generation output, and inflation. The minor reviews have not been implemented since the release of MYTO 2015 and as a result, tariffs continue to slide further below cost-reflective levels, undermining the Discos' ability to fulfil their obligations under the Performance Agreements and Vesting Contract.

There is inadequate CAPEX provision in the MYTO model for the realistic performance improvement required. It is hoped that this PIP will form the basis for revised CAPEX.

The lack of a cost reflective tariff has resulted in accrued liabilities to NBET and MO and means that Discos are unable to raise finance for performance improvement.

4.2.4.2 *Eligible Customers*

The eligible customer regulations will allow large ("eligible") customers to purchase power directly from generating companies. Large customers are a major source of revenue for Discos due to their ability and willingness to pay, and heavy cross subsidies between tariff classes. Although a Competition Transition Charge and Distribution Use of System Charges were intended to address the financial impact of losing these customers, they have not yet been put in place.

Under the regulations, eligible customers are required to apply to NERC for eligible customer status, with their proposed supplier. NERC has not officially granted eligible customer status to any customers yet, but eligible customers are still taking advantage of this new policy. Since 2018, Discos have been reporting that some transmission-connected customers are defecting without approval from NERC. [IBEDC to add any specific information for how it has impacted them – numbers of customers and revenue impact]. We are aware of at least six cases across different Discos in which these customers are refusing access to the Disco to read meters and invoice them for demand. If the customers do have a PPA with a provider to supply them power, the Market Operator would need to be aware of it and account for it in Settlement Statements.

4.2.4.3 *Customer perceptions*

The lack of liquidity has resulted in an adversarial public discussion, with various participants blaming others. This has reinforced negative customer perceptions, and together with a perception of electricity as a public good that should be consumed freely, has led to low willingness to pay, energy theft, meter bypass and vandalization of power assets. This is exacerbated by insecurity in some areas of operations.

The sector should try to present a more unified vision in the future, to support customer confidence and encourage customers to pay their bills.

4.2.4.4 *Policy and regulatory uncertainty*

The regulatory rules have changed frequently and substantially during the period since privatisation in 2013. There is a need for regulatory stability, and for regulations to be applied consistently. IBEDC's ability to achieve its realistic business objectives would be enhanced by the following:

- The MYTO minor reviews of tariffs should be implemented every six months, without delay;
- Conditions precedent should be met – the conditions for the TEM were not met before it was declared. This materially contributed to the failure of participants to meet their obligations;
- Proposed new regulations to be agreed across the sector as providing benefits such as increasing investment before coming into force. In this respect Eligible Customers and Meter Asset Providers (and in the future potentially Franchising) have increased the number of players in the sector, but it is not yet clear that they will increase investment unless the resulting risks are reduced; and Proposed Business Continuity Regulations, may make it impossible to raise finance in the sector;
- Transparency is essential – instructions by NERC to specific market players (such as the MO or NBET) should be made public and consulted on – as they may result in changes to market charges that are not reflected in retail tariffs; and
- The pace of regulatory change should be slowed, and full regulatory impact assessment conducted, so that new regulations do not have unintended consequences, such as worsening the ability of market participants to raise capital or reducing the liquidity of the sector.

4.2.5 Description of achievements 2013-2019

IBEDC acquired the franchise following the conclusion of privatization in November 2013 and since then have established a strong track record of service improvement, cost efficiency and industry-leading innovation. It is delivering value for its customers through laudable projects, some of which are-

- Extensive rehabilitation of network infrastructures

- Deployment of over 250,000 state of the art meters to replace obsolete, burnt or faulty legacy meters as well as meter new customers
- 100% metering of all premium MD customers
- Leveraging on technology to deliver and enhance seamless customer experience by-
 - Migrating to a new robust and scalable billing system EMS 2000
 - Acquisition of a more robust vending platform able to handle online real time vending- ECMI
 - Introduction of e-payment channels to ease customers' vending and payment needs
 - Upgrading and re-branding of all customers contact centres franchise-wide

4.2.5.1 *2013 Achievements*

- Public awareness and sensitization on safety issues.

4.2.5.2 *2014 Achievements*

- Installation of isolators to manage energy supply to Non-MD and less viable customers.
- Diversion of some MD Customers at Oke Ilewo from Akinolugbade 11KV feeder to a more stable Ijaye 11KV feeder in Ijeun Business Hub.
- Deployment of Protective Personal Equipment (PPE) gear to 1,200 Technical staff.
- Corporate communication infrastructure.
- Scalable and robust network infrastructure to address the present and future network demands.
- Data center facility with redundant power, cooling, environmental monitoring and security.
- Training of Technical and customer care staff.

4.2.5.3 *2015 Achievements*

- Creation of Bank road 11KV feeder dedicated to all Banks in the Central Business District in Dugbe Ibadan.
- Rehabilitation of Mokola 2X15MVA Injection S/S faulty outgoing breakers.

- Replacement of a defective 15MVA power transformer to an 33/11KV at Ibadan North Injection substation.
- Replacement of faulty 33KV outdoor breaker at Igbo-oloyin.
- Replacement of 33KV transformer breaker at Ibadan North Injection substation.
- Creation of Brewery 11KV feeder from Olomore Injection Substation in Olumo Business Hub.
- Commissioning of NIPP project at Offa.
- Development and deployment of safety code manual to all staff.
- Production of safety signages across all our installations.
- SAGE ERP implementation for real time accounting, reporting and HR.
- Website services for customers payments and corporate information awareness.
- Training and Capacity Building (IBEDC-UI partnership).
- IBEDC- USAID partnership on Women and Gender Equality.
- Introduction of Sage ERP.
- Organizational restructuring and regional modelling.
- Launched several customer awareness campaigns- CAPMI, Tariff, Whistle-blower, Alternate Payment Channels, Vandalism/Safety, Bill payment.
- Regional sponsored radio programmes aired weekly across the franchise.

4.2.5.4 2016 Achievements

- Conversion from old billing system (Spectrum) to a new and robust system- EMS 2000
- Adoption of an online real-time vending platform- ECMI
- Introduction and expansion of e-payment channels across the franchise
- Re-branded Customer contact centre across the network reflect the service-oriented and customer-focused vision of the company
- Introduced an innovative and educative 'Know your energy consumption' section to enable customers monitor and manage their power consumption.
- Creation of Soka 11KV feeder from the existing overloaded Boluwaji 11KV feeder.

- Rehabilitation and reconstruction of old and weak overhead lines of Eruwa/Lanlate 33KV feeder to increase reliability of power supply to Zartech Farms at Eruwa.
- Upgrading of the underrated C.T at Abiola way 2 x 15MVA Injection substation from 400A to 1200A for more load accommodation.
- Installation of seven board panel for Jebba 2x7.5MVA, 33/11KV Injection substation.
- Successful taking over of Dogongari 1x15MVA , 33/11KV Injection substation constructed by Mainstream Energy Limited at New-Bussa.
- Development of Technical Safety Code developed, approved and communicated to all Technical staff.
- Wide Area Network service for real-time billing operations.
- IBEDC- USAID Utility Outreach programme with the introduction of Energy clubs to Junior Secondary schools.
- Creation of effective and functional recruitment portal.
- Intensive media engagement.
- Weekly publication of weekly energy allocation in Tribune Newspaper.
- Over 1000 community engagement across the franchise.
- Monthly Maximum Demand and Stakeholders communication engagement via email.
- Daily social media and website updates on the company's activities.

4.2.5.5 *2017 Achievements*

- Full (100%) metering of all premium and identified MD customers thereby meeting NERC deadline
- Exceeded N4bn monthly collection for the first time (from average of N3.5bn since takeover)
- Partnered with USAID on Loss Reduction project across Ogun state
- Launched Asset & Customer Enumeration (ACE) project
- Rehabilitation of Samonda 1x15MVA Injection and the creation of additional 1 No. 11KV premium feeder.

- Extension of 7UP 11KV feeder to capture other premium customers at Oluyole Industrial Estate.

4.2.5.6 2018 Achievements

- Successfully launched Distribution Transformer (DT) metering project
- Conversion of Joyce B 11KV feeder to premium feeder.
- Successfully launched Distribution Transformer (DT) metering project
- Asset enumeration successfully completed. Customer enumeration ongoing
- Successfully installed AMI system for select MD customers towards 100% coverage over time

4.2.5.7 2019 Achievements

- Installation of a CRM (Customer Relationship Management) system to track customer complaints and improve TAT
- Set up of call centres to handle customer complaints online real time from anywhere in the franchise
- Development of Business Intelligent platform to assist monitor and enhance reporting of performance and support Management in quality decision making.

4.3 Scenarios in this PIP

This PIP considers three scenarios – Zero CAPEX scenario, Regulatory Allowed CAPEX and IBEDC Required CAPEX Scenario.

The key characteristics of the scenarios are:

- **“Zero CAPEX” Scenario** based on NERC’s tariff and loss assumptions from the latest minor review (June 2019), which treated the end of 2020 as year 4 of ATC&C loss reduction;
- **“Regulatory Allowed Capex” Scenario** – The Capex and Opex requirements as well as end-user tariffs are as stipulated in the June 2019 Minor Review MYTO Model. In this scenario, it is modelled that IBEDC has access to the approved CAPEX and OPEX to determine IBEDC’s achievable loss reduction trajectory from 2020 to 2024 which is not as aggressive as NERC envisages in the Minor Review Model;

- **“IBEDC Required Capex” Scenario** – The Capex and Opex requirement are higher and reflect what is needed, at cost-reflective tariffs, to achieve loss reduction (more than in the “Regulatory Allowed Capex” scenario) which will still not be as aggressive as NERC envisages in the Minor Review Model.

Cost-reflective average tariffs, payments to the market (expected % payment to MO and NBET) and cash flow for IBEDC are outputs of all scenarios.

The differences between the three scenarios are summarised in Table 3.

Table 3: Summary of the two scenarios

Assumption	Zero CAPEX Scenario	Regulatory Allowed CAPEX Scenario	IBEDC’s Required CAPEX
Demand	Consistent demand scenario		
Generation levels	Stable at 2019 levels		
Generation tariffs	Increasing with foreign exchange; increasing due to additional capacity charges once PPAs are activated		
Tariffs	Tariff assumes NERC’s ATC&C loss reduction trajectory with the end of 2020 as year 4 of ATC&C loss reduction	MYTO tariffs from Jan 2020 with 2020 as year 1 of ATC&C loss reduction	Cost reflective tariff from Jan 2020 with 2020 as year 1 of ATC&C loss reduction
Accessible CAPEX	Zero	MYTO levels	IBEDC proposed levels in 2020-2024
Access to capital	Unable to raise capital	IBEDC’s shareholder to provide equity investment and additional loan to be sourced by IBEDC.	IBEDC’s shareholder to provide equity investment and additional loan to be sourced by IBEDC.
Actual ATC&C	2020 is year 4 of ATC&C loss reduction; limited access to capital means slow loss reduction; no solution for MDA payment	ATC&C loss reduction trajectory achievable within the limits of NERC’s Capex	ATC&C loss reduction trajectory achievable within the limits of Full Capex

4.3.1 Demand forecast

From the supplied demand data for 2018, IBEDC had a simultaneous peak demand of 545.5 MW, non-simultaneous peak demand of 1,438.4MW, and with energy supplied of 8.01 TWh. This consumption was driven by a customer population of 1,572,424 customers.

The problem faced by Discos in Nigeria is that due to the chronic shortages of power and in some cases unreliability of equipment, feeders are not always energised, and consequently only parts of the network are energised at any point in time. Consequently, the underlying *total* load is difficult to determine. To combat this issue of sparseness in the data, we modelled the time series of load of feeders using a "structural model". The Structural Model approach calculates the Unsuppressed Demand by forecasting the demand that would otherwise exist on the disconnected feeders if they were connected.

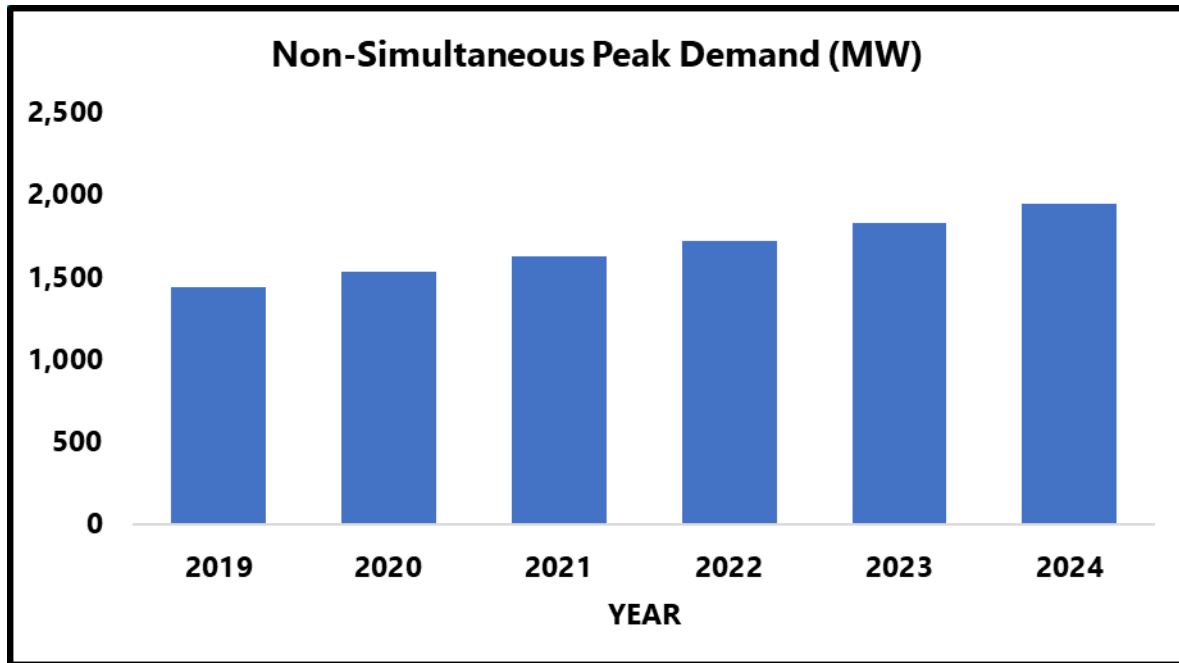
The application of a combination of a structural and a dynamic forecasting model to the hourly load data, and the customer population was used to determine the current and projected demand. Over the forecast period, the customer population is projected to increase by 1,572,424 customers to 2,278,370 customers by 2024, representing an increase of 45% over the forecast period. This translates to an unsuppressed energy consumption increase of 38%, from 8.01TWh in 2019 to 11.06TWh in 2024 – see Table 46.

Drawing these analyses together gives a peak load projection for Total Demand (Unsuppressed Demand plus Unconnected Demand) in the IBEDC franchise zone. Load for Total Demand is expected to grow from 1,438.4MW to 1942.2MW by 2024 representing a growth of 35%, as shown in Figure 2. The network infrastructure analysis presented here is based on this demand projection for customers served by IBEDC.

Table 4: IBEDC Demand Projection 2019-2024

Year	Non-Simultaneous Peak Demand (MW)	Energy (GWh)
2019	1,438.4	8,008.7
2020	1,527.0	8,530.4
2021	1,623.7	9,092.2
2022	1,719.3	9,697.7
2023	1,825.6	10,351.0
2024	1,942.2	11,056.2

Figure 2: IBEDC Non-simultaneous Peak Demand (MW) 2019-2024

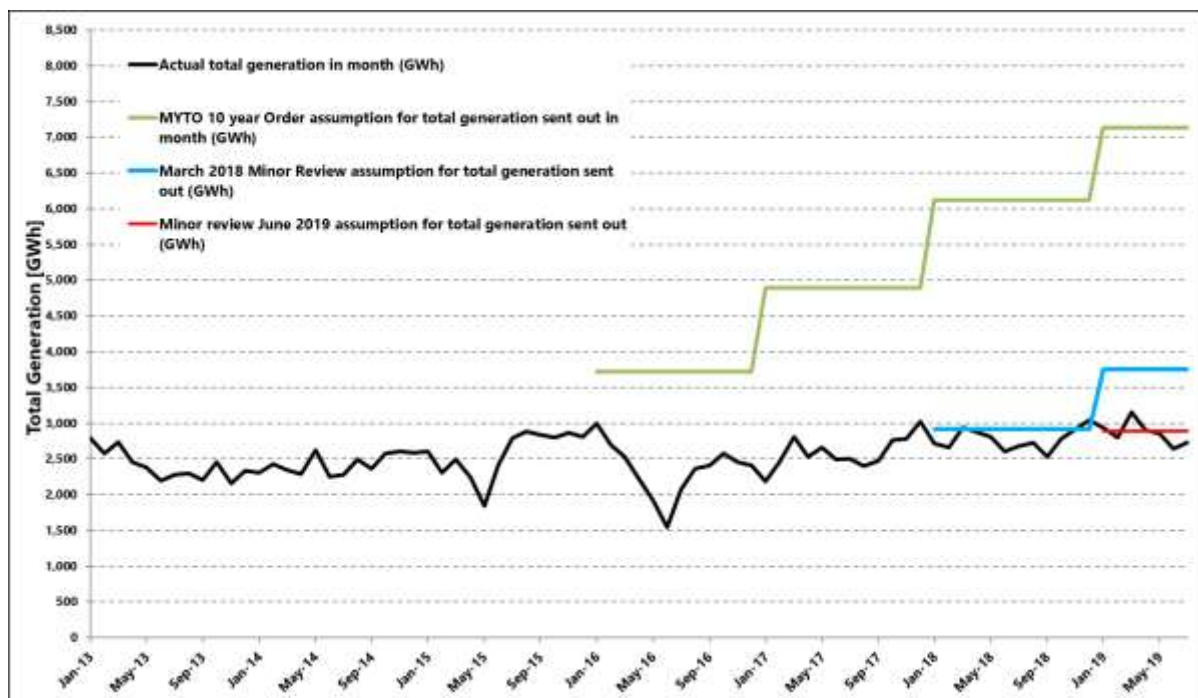


4.3.2 Generation

4.3.2.1 Energy generation

Energy generation is assumed to remain at current levels in all scenarios. For IBEDC this means an average of 29.1 MWh/month. A flat generation projection is valid given that the average monthly generation levels since 2013 have fluctuated but have not significantly improved (see Figure 3).

Figure 3: Energy sent out by Gencos from January 2013 to July 2019



If future generation rises above this level, it can be considered in future minor tariff reviews. However, it seems more appropriate to base this performance improvement plan on historic expectation, rather than MYTO projections that have proven overly optimistic in the past (see Figure 3).

4.3.2.2 Generation capacity

Although energy generation is assumed to be constant, generation capacity is assumed to increase from January 2020, as PPAs will be activated. This means that Gencos who currently do not have active PPAs will be able to charge for their capacity that is available but not used.

- **Generation capacity charges for those Gencos with active PPA's in 2019** (Omosho, Olorunsogo, Agip, Shell and Azura): Capacity charges were calculated based on the average capacity factor for each Genco in the months January to May 2019. These are 66%, 84%, 28%, 43% and 64% respectively.
- **Generation capacity charges for those Gencos without active PPA's in 2019:** Using data on the daily energy sent out from stations and the daily available capacity from the TCN daily operational reports from the start of 2013 to the end of May 2019, an average capacity factor of 54% was calculated. The average monthly energy in MWhs and the capacity factor of 54% was used to project the capacity charges expected from the remaining Gencos once their PPAs are activated in 2020.

The expected energy and capacity levels to be borne by Discos are shown in Table 47.

4.4 Outputs: strategic objectives

4.4.1 Performance Agreement

Table 5: Performance Agreement metrics

No.	Key performance index	Measurement criteria defined in privatisation	Annual Performance					
			Base line	Y1	Y2	Y3	Y4	Y5
1	Loss reduction	ATC&C (%)	42.50	36.20	30.4	24.72	19.6	15.77
2	Reliability/availability	Number of customer Interruptions (#)	20600	16480	13184	10547	8438	6750
3	Metering	Number of new consumer meters installed		168.6	265.7	315.5	303.0	158.0
4	New connection/network expansion	Number of new customer connections	1,106.0	127.4	139.5	152.9	167.5	55.6

4.4.2 Current service deficits

IBEDC has been unable to achieve the aggressive loss reduction plan which was contained in the Performance agreement due to adverse working environment explained in section 4.5. The ATC&C loss stands at 49.5% as against 43.9% at handover.

These challenges have also affected IBEDC ability to drastically improve its reliability which currently stands at 20,600 in 2018 as against 21,345 at handover.

IBEDC however has made a lot of investment to close its metering gap and replace faulty meters. IBEDC has installed 211,640 since privatization to bring current total metered customer numbers to 650,540 as against 438,900 at handover. The meter investment planning to cover the outstanding metering gap is explained in detail in section 0 and section 6.4.

Table 6: Current service levels

No.	Key performance index	Measurement criteria defined in privatisation	Annual Performance		
			2013 (handover)	2018	Six months to June 2019
1	Loss reduction	ATC&C (%)	43.9	50.6	49.5
2	Reliability/availability	Number of customer Interruptions (#)	21,345	20,600	9,612
3	Metering	Number of total consumer meters installed	438,900	35,362	4,815
4	New connection/network expansion	Number of total customer connections	12,052	166,116	260,869
8	Remittance	Market remittance to NBET and MO	100%	32%	39%

4.4.3 Goals 2020-2024

Target outputs are dependent on the modelling scenario, importantly on tariff levels and allowed CAPEX. The target outputs in the most ambitious “IBEDC Required CAPEX” scenario (with full CAPEX) are detailed in Table 7.

In all scenarios, if finance is not available to meet the required CAPEX, the achievable outputs may differ from the target output.

4.4.3.1 Achievable outputs in “IBEDC Required CAPEX” full CAPEX allowance scenario

The “IBEDC Required CAPEX” scenario based on a cost-reflective tariff, which recognises that tariffs have not permitted loss reduction to date (end of 2020 is treated as year 1 of ATC&C loss reduction) and allowing full required CAPEX to achieve the Disco’s realistic loss reduction and other output targets.

Table 7: Target service levels (“outputs”) based on the most ambitious “IBEDC Required CAPEX” (with full CAPEX) scenario

No.	Key performance index	Measurement criteria defined in privatisation	Annual Performance					
			Base line	2020	2021	2022	2023	2024
1	Loss reduction	ATC&C (%)	49.50	46.00	40.51	33.93	27.11	19.13

No.	Key performance index	Measurement criteria defined in privatisation	Annual Performance					
			Base line	2020	2021	2022	2023	2024
2	Remittance	Market remittance to NBET & MO (%)	100	100	100	100	100	100

4.4.3.2 Achievable outputs in "Regulatory Allowed CAPEX" scenario

The "IBEDC Regulatory Allowed CAPEX" scenario based on a cost current MYTO tariffs, which recognises that tariffs have not permitted loss reduction to date (end of 2020 is treated as year 1 of ATC&C loss reduction) and assuming IBEDC has access to Regulatory Allowed CAPEX to achieve the Disco's loss reduction and other output targets.

Table 8: Target service levels ("outputs") based on the "Regulatory Allowed CAPEX" (with full CAPEX) scenario

No.	Key performance index	Measurement criteria defined in privatisation	Annual Performance					
			Base line	2020	2021	2022	2023	2024
1	Loss reduction	ATC&C (%)	48.73	45.67	41.90	34.70	25.89	48.73
2	Remittance	Market remittance to NBET (%)	100	<100	<100	<100	<100	<100
3	Remittance	Market remittance to MO (%)	100	100	100	100	100	100

4.4.3.3 Achievable outputs in "Zero CAPEX" scenario

In the "Zero CAPEX" scenario, the target outputs are lower. A business as usual scenario based on NERC tariff assumptions from the latest minor review (June 2019), which treated the end of 2020 as year 4 of ATC&C loss reduction.

Table 9: Target service levels (“outputs”) in “Zero CAPEX “scenario

No.	Key performance index	Measurement criteria defined in privatisation	Annual Performance					
			Base line	2020	2021	2022	2023	2024
1	Loss reduction	ATC&C (%)	49.5	42.0	42.0	42.0	42.0	42.0
2	Remittance	Market remittance to NBET & MO (%)	<100	<100	<100	<100	<100	<100

4.4.4 Projected investment

The target outputs assume all the allowed CAPEX is spent in each scenario. In some scenarios, finance may not be available to meet the required CAPEX, in which case the achievable outputs may differ from the target outputs.

Table 10: Assumed CAPEX for the all scenarios

Naira million	2020	2021	2022	2023	2024
Allowed in MYTO Minor Review (June19)	11,320	11,320	14,150	14,150	14,150
Projected in this PIP (full proposed CAPEX above NERC limit)	18,655	18,570	17,566	16,276	12,861

4.4.5 Justification for IBEDC's goals

The goals set by IBEDC in this PIP have been aligned to fulfil the following objectives;

- Performance Improvement to achieve loss reduction, metering gap closure and improved customer satisfaction shown in section 6
- Ensure improved relationship between relevant stakeholders and IBEDC shown in section 3.2
- Ensuring FG objective of economic recovery tied to measurable improvements in the power sector is met and
- IBEDC’s ability to deliver set goals and targets are dependent on the level of accessible finance.

4.5 Challenges

IBEDC understands that for successful implementation of the PiP, there needs to be a comprehensive risk assessment and possible mitigation strategies. Some of the risks already identified include;

- Loss reduction pathways acknowledged in MYTO
- MDA debts
- Tariff review
- NBET bills
- Generation level and
- Eligible Customers

Detailed list of the risks, the risk description, risk likelihood, risk impact and risk management strategy are discussed in section 8.3.

5 Infrastructure Review

5.1 Overview

This section covers:

- [Current state of infrastructure;](#)
- [Review of current limitations;](#)
- [Need for area strategies;](#)
- [Recent and ongoing projects;](#) and
- [Implications of the infrastructure review.](#)

Each section of the plan should have an overview and contents page.

5.2 Current state of infrastructure

IBEDC serves Oyo, Ogun, Osun, Kwara and parts of Ekiti, Kogi and Niger states, Nigeria. The distribution network, operated at three voltage levels, serves major residential, commercial and industrial hubs within the state, covering 23 business units within its network. There are 112 33kV feeders, 232 11kV feeders and 113 33/11kV Distribution Transformers connected to 22 TCN stations.

Table 11: IBEDC's Distribution Network

s/n	Distribution Network	Number
1.	Business Units (BU)	23
2.	33kV feeders	112
3.	11kV feeders	232
4.	Distribution Transformers	115

IBEDC's single line diagram (SLD) shows the network configuration and the flow of energy from Transmission Company of Nigeria (TCN) stations to 33kV feeders, to injection substations and then to 11kV feeders as shown in Figure 4.

IBEDC's network is supplied from 22 TCN transmission stations with a combined nameplate capacity of 2088 MVA. The 112 33kV feeders supply 235 33/11kV power transformers across

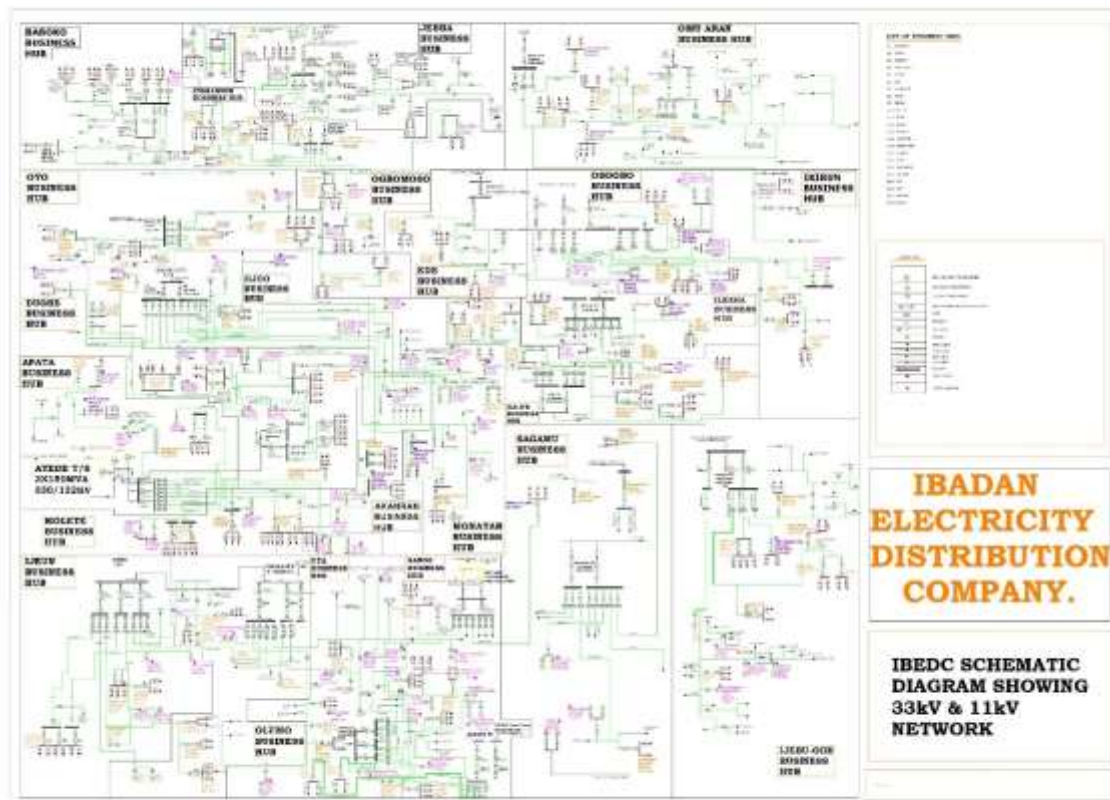
199 injection substations. With a total 33/11kV power transformer transformation capacity of 2013 MVA, 232 11kV feeders are energized for onward downstream power distribution.

There are 9137 11/0.415kV distribution transformers and 5689 33/0.415 kV distribution transformers served by IBEDC. The total transformational capacity of the 11/0.415kV and the 33/0.415kV distribution transformers are 2667 MVA and 2152 MVA respectively – see Table 12. The route length for the 33kV, 11kV, and 415V feeders are 9,744 km, 4,904 km, and 43,935 km respectively, resulting in a total route length of 58,583 km.

Table 12: IBEDC Network Configuration

S/N	Network Parameters	Unit	Total
1.	Transmission Substations	count	22
2.	132/33kV transformers	count	46
3.	Injection Substation	count	199
4.	33/11kV Transformers	count	235
5.	33/0.415kV Transformers	count	5689
6.	11/0.415kV Transformers	count	9137
7.	Installed Transmission Capacity	MVA	2088.0
8.	Installed Transformer Capacity (33/11kV)	MVA	2013.0
9.	Installed Transformer Capacity (33/0.415kV)	MVA	2152
10.	Installed Transformer Capacity (11/0.415 kV)	MVA	2667
11.	Route Length 33kV Feeders	ckt km	9,744.23
12.	Route Length 11kV Feeders	ckt km	4,904.11
13.	Route Length 415V Feeders	ckt km	43,935.05

Figure 4: IBEDC's Single Line Diagram



5.2.1 Analysis of Regulatory Asset Inventory

IBEDC's has 10,149 items all in good working condition listed on its asset inventory with purchase price worth NGN 129.705 Billion out of which 4,422 have been fully depreciated but still in use.

IBEDC funded these assets through CBN/NEMSF and IGR. NEMSF and IGR funding value stands at NGN 4.211 Billion and NGN 125.49 Billion.

Table 13: Description of IBEDC Regulatory Assets

S/N	Network Parameters	Unit	Purchase Price (NGN Billion)
1.	Building	111	1.866
2.	Communication Equipment	23	0.079

S/N	Network Parameters	Unit	Purchase Price (NGN Billion)
3.	Computer Hardware	864	0.574
4.	Distribution Transformer	401	21.245
5.	Furniture & Fittings	2951	0.177
6.	Generator	75	0.039
7.	Land	125	3.676
8.	Lorry	8	0.040
9.	Meter	1289	26.379
10.	Miscellaneous Equipment	97	0.048
11.	Motor Vehicle	304	1.502
12.	Office Equipment	2152	0.198
13.	Overhead/Underground Lines & Accessories	116	37.588
14.	Plant & Equipment	7	0.048
15.	Poles & Fixtures	193	21.476
16.	Sub-Station	1433	14.768
	Total	10149	129.705

5.3 Review of current limitations

5.3.1 Technical network constraints

5.3.1.1 Projected Load by TCN Station

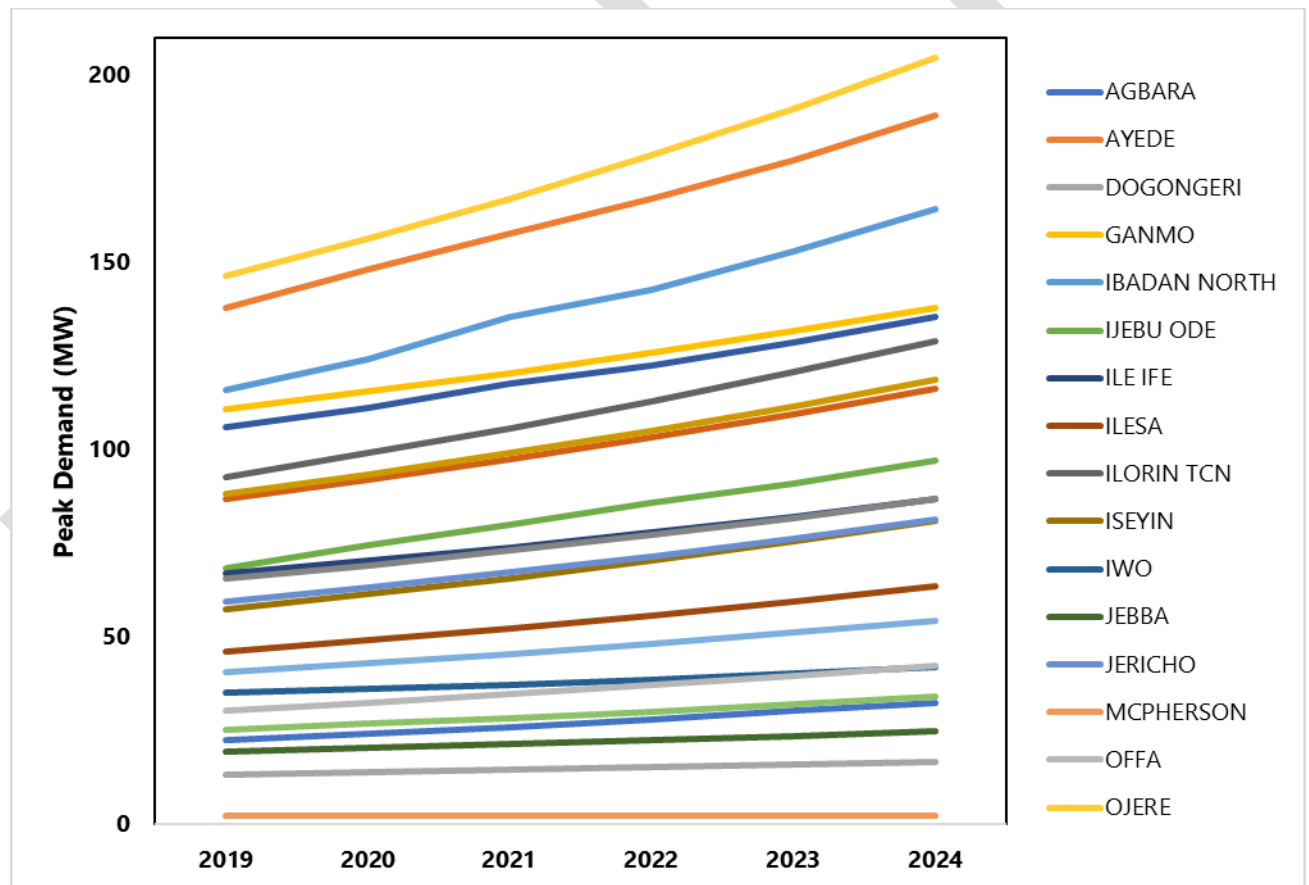
The forecasting methodology applied in this study was performed at the 11kV and 33kV feeder level, thereby generating a demand forecast for each feeder. A summary of the 33kV demand forecast and the TCN substation demand forecast are presented in this report. The projected load summarised at TCN substation level is graphically shown in Figure 5.

While the total nameplate capacity across the TCN stations supplying IBEDC is 2088 MVA, however, the total operational capacity, i.e., the total loading allowed on the transformers, is about 72%. With the 2019 peak demand of 1,438.4 MW, the current TCN operational capacity

is adequate to supply IBEDC's power, however, the disaggregate values of peak demand downstream the TCN stations reveal this operational capacity is insufficient. Across the 22 TCN stations that supply the IBEDC's franchise, by nameplate capacity (2088 MVA) there is adequate capacity to meet the peak demand in 2019 in 12 stations, however, this reduces to 5 by 2024 if additional investment is not put in place if no TCN investments are made.

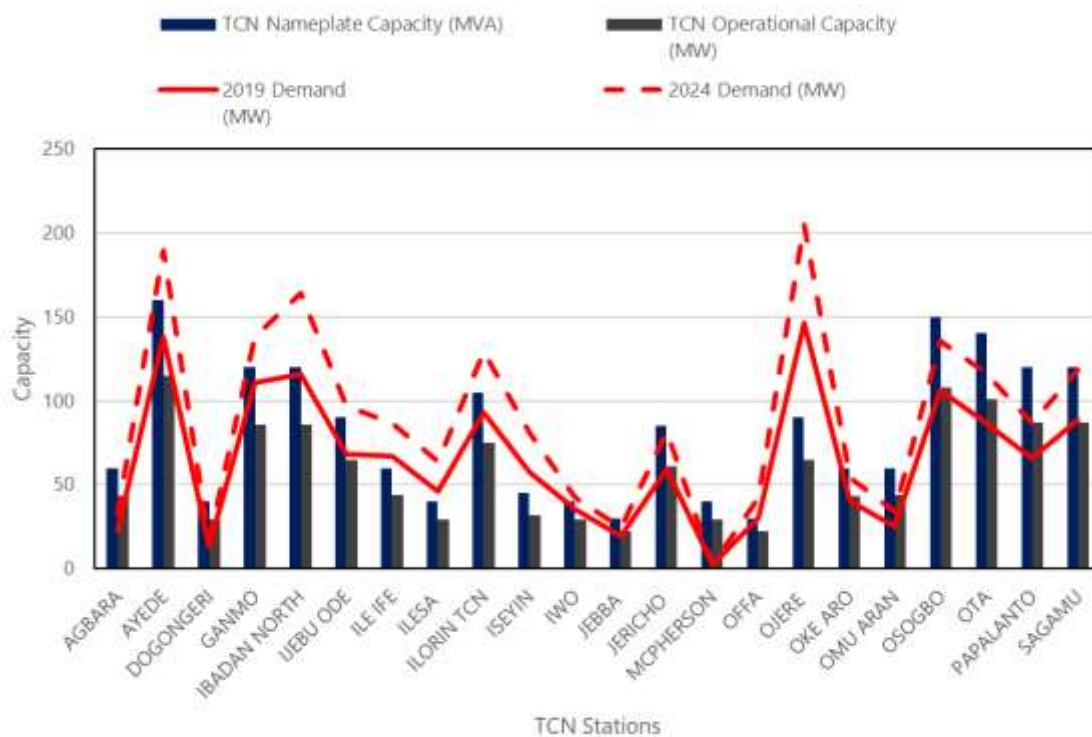
Currently IBEDC shares some TCN stations with Ikeja Electric, Benin Electricity Distribution Company and Abuja Electricity Distribution Company hence the demand projection impact on these TCN stations are limited to IBEDC load only.²

Figure 5: Load Forecast by TCN Stations



² The analysis does not include the 132kV eligible customer demand.

Figure 6: Demand Forecast (2019 & 2024) and TCN Station Capacity



5.3.2 Aging infrastructure

60% of Distribution infrastructure are assets taken over from the defunct PHCN and are likely obsolete with attendant negative impact on reliability. Measures are being taken to replace the obsolete and non-functional assets.

5.3.3 Customer enumeration analysis

IBEDC to complete

To support efforts in regularizing illegal connections, IBEDC has engaged the service of EXERNEGIA-GEOTECHNICS consortium and 485 staff with customer enumeration in different business hubs. The enumeration efforts have been yielded the following results;

- Customer base from 1,546,170 to 2,090,781
- Collection rate from 62.5% to 67.3%.

5.3.4 Metering gaps

Table 14 provides a metering gap analysis, including both meters to be provided by IBEDC and those to be provided by MAPs.

Table 14: Review of metering gaps

Metering	Priority assigned by NERC in PIP Guidelines	Current situation	IBEDC desired implementation date
Bulk metering (market interface)	Very high priority	IBEDC intends to invest NGN 1.88B over the next five years to improve monitoring and reconciliation of boundary point energy transactions, improve billing and collection efficiency, monitor energy sales across the network value chain and data gathering for demand forecasting and energy supply analysis	Dec 2024
MDA metering	Very high priority	IBEDC has a total of 2312 MDAs out of which 1491 are metered and 821 are unmetered. IBEDC plans to spend NGN 100m CAPEX and NGN 18m OPEX to ensure 100% MDA metering is achieved.	Dec 2024
Revenue Protection Project (RPP) supported by Advanced Metering Infrastructure (AMI)	High priority	The RPP is currently implemented to systematically record and monitor consumption of selected groups of customers using remote metering enabled by Advanced Metering Infrastructure (AMI); and to adopt	Dec 2024

Metering	Priority assigned by NERC in PIP Guidelines	Current situation	IBEDC desired implementation date
		consistent corrective action when irregular situations are detected, to ensure full metering and billing of consumption on a permanent basis.	
Customer metering	Not assigned	IBEDC plans to reduce its current metering gap using authorized MAP by increasing the number of new meters installed to an average of 34,100 per month. This is to reduce estimated billing and to improve customer trust in their energy billing	Dec 2021

5.3.5 IT gaps

Table 15 provides the status of all the management systems required by NERC and those identified by IBEDC.

Table 15: Review of management system gaps

Management system	Priority assigned by NERC in PIP Guidelines	Current situation	IBEDC desired implementation date
Incidents Recording and Management System (IRMS)	Very high priority	IBEDC has an IRMS platform which supports identification and resolution of interruptions and linked to customer database. There is currently ongoing work to ensure the IRMS is integrated with the point of electricity supply and network assets using	October 2022

Management system	Priority assigned by NERC in PIP Guidelines	Current situation	IBEDC desired implementation date
		GIS to keeps permanent track of activities at the regional Distribution Operation Centres.	
Commercial Management System (CMS)	High priority	IBEDC has in place CMS which supports billing, service anomalies, billing adjustment, payment processing, service application, customer support, meter management system, meter information system and energy sales. Effort is already in place to ensure metering billing and inspection is automated.	October 2020
Enterprise Resource Planning (ERP) information system	High priority	IBEDC has in place an ERP information system which enables companywide financial management, accounting data integration, logistics support, human resource and procurement support.	
Geographical Information System (GIS) mapping of customers and network assets	High priority	IBEDC has in place a GIS which enables integration with customer and asset database, creation of a centralized network asset database and IRMS integration.	
Supervisory Control and Data Acquisition System (SCADA)	High priority	IBEDC is currently working on deployment of a robust SCADA system utilizing communications	October 2024

Management system	Priority assigned by NERC in PIP Guidelines	Current situation	IBEDC desired implementation date
		<p>media to control and manage the following electrical assets: Transformers, Feeder Lines, 33kV Outdoor Circuit Breakers, 11kV Feeder Panels, Transformer Control Panels, Line Control Panels, Line Isolators, Injection Substation's Auxiliary Transformers (For station services), Tripping Units, Voltage Transformers and Current Transformers, Injection substations</p>	
Works Management System (WMS)"	Medium priority	<p>IBEDC is currently working on the centralization of the management of assets and network information to maximize reliability and efficiency. Spatial asset management, network planning and analysis, operational awareness, field mobility, and seamless integration with key network systems are features that will be introduced for the benefits of effective network data management, improved decision making and lower TCO.</p>	October 2024

5.4 Recent and ongoing projects

IBEDC has 70 ongoing projects broken into Commercial, Technical and IT projects with a value of NGN 6.75 billion.

Detailed Breakdown of the projects is shown in 0.

Table 16: Breakdown of Ongoing Projects in IBEDC

Type of Meters	Number	NGN (million)
Commercial	18	5,992.9
IT Projects	12	312.5
Technical	40	443.2
Total		6,748.6

5.5 Implications of the infrastructure review

There has been a prolonged period of underinvestment in the distribution networks in Nigeria. In November 2013, IBEDC inherited networks from PHCN that had received minimal investment for many decades. In some cases, this was simply emergency investment to maintain supply, or expansion based on political rather than economic drivers.

For instance, most projects were considered constituency projects and executed as such without any cost benefit considerations. Transformers, meters etc were been deployed to locations where there is no economic impact.

Much investment is needed to turn IBEDC into a modern distribution company.

In developing this PIP, IBEDC has prioritised investment to best deliver the outputs given current liquidity constraints. The process for investment planning was discussed in section 0. The output goals are defined in Table 7 in section 4.4.

Resulting infrastructure investment plan is in section 6.

6 Detailed Program Plans

6.1 Overview

This section covers:

- [Delivering outputs efficiently;](#)
- [Electricity distribution investments;](#)
- [Working with Meter Asset Providers \(MAP\);](#)
- [Commercial operations investments;](#)
- [Health and safety plans;](#)
- [Resourcing plans;](#) and
- [Overall investment plan.](#)

The detailed program plans discussed in this section are plans IBEDC wishes and can only achieve in the "IBEDC Required CAPEX" Scenario discussed in section 4.3. Reference to 6.9 for detailed breakdown

6.2 Delivering outputs efficiently

How the planning for each output delivers efficiently:

In order to efficiently deliver outputs in the PIP, we had to ensure that our internally prioritized initiatives were aligned with the feedback received from our stakeholders. The issues that were priority for our stakeholders bothered on metering and power supply availability/reliability which both coincide with our priority initiatives for investment.

Investing in improving the availability/reliability of power supply enable us increase revenues and recover our costs. Supporting the MAP metering exercise of our customers as well as investing in network metering infrastructure is top priority for us as we believe that it will greatly reduce commercial and collection losses within our network. Our investments in state-of-the-art technology will provide us the platform for real-time monitoring of our network performance and business operations which will allow us to perform efficiently. The planned acquisition of SCADA will help us to better ascertain technical losses. Our optimisation model for network investments (OMNI) tool will be used to prioritise all network investments to ensure optimal use of available capital. Our planned training programmes will equip our

workforce with the capacity required to deliver their KPIs efficiently. We will also keep engaging our stakeholders to identify their challenges to develop the required solutions for customer satisfaction.

6.3 Electricity distribution investments

Over five years in the required “with intervention” scenario, Electricity distribution investment can help IBEDC achieve the following targets if cost-reflective tariffs and full CAPEX is allowed:

- Reduce ATC&C losses from the current level of 49.5% to 19%, which will allow our business to be sustainable;
- Reduce the number of customer interruptions from the current level of over 20,000 per year to less than 7000 per year, increasing reliability for our customers;
- Increase the number of customer connections from the current level of 2,090,781 to projected 2,278,064 customers.

6.3.1 Network Investment Summary

Our five-year network investment plan summarised in IBEDC’s investment requirement over the next five years to achieve the target outputs in this plan is a CAPEX of N83.9billion. IBEDC’s funding plan is discussed in Section 7.

Table 35, will see IBEDC undertake projects to upgrade existing network capacity, invest in technological enhancements to reduce outages and system downtimes, acquire tools to analyse network performance and network assets that provide real-time visibility and performance data. The projected investment requirement over the five years is N83.9billion.

6.3.2 Network metering plans

IBEDC have over 150 bulk meters in place in IBEDC/TCN touchpoints. However, these bulk meters although still functional, are old and getting obsolete.

The bulk meters are slated for gradual replacement with meters compatible with TCN AMI system being put in place. Priority will be given to high value network that serves heavy users like Steel companies that account for substantial part of IBEDC revenue.

IBEDC intends to invest NGN 20.3B over the next five years to improve monitoring and reconciliation of boundary point energy transactions, improve billing and collection efficiency,

monitor energy sales across the network value chain and data gathering for demand forecasting and energy supply analysis. The breakdown of the investment is shown in **Table 17**.

Table 17: Network Metering Investment Plan

Type of Meters	Number	Capex (Naira Million)				
		2020	2021	2022	2023	2024
Single Phase Prepaid Meters (Split-Type)	240,000	1764.1	1810.1	3275.1	3328.8	966.4
Single Phase Post-paid Meters (Compact)	16,000	80.5	82.6	213.5	217.0	88.2
Three Phase Prepaid Meters (Split-Type)	54,500	1132.6	1286.7	1287.4	610.6	265.9
Three Phase Post-paid Meters (Compact)	16,000	149.5	153.4	396.5	403.0	163.8
Whole Current 3-Phase Meters	1,350	28.5	36.6	45.4	46.1	46.9
Low Voltage CT Operated MD Meters	1,450	112.1	115.1	138.8	100.8	102.4
11KV HT VT/CT Metering Panel	140	56.9	68.1	60.4	51.2	41.6
33KV HT VT/CT Metering Panel	220	131.1	134.5	156.5	159.0	179.6
Statistical Meter for Distribution Trf.	1,500	138.0	141.6	146.4	148.8	151.2
Feeder Meters for 11KV and 33KV Lines	65	17.3	7.1	7.3	7.4	7.6
Grid Meters	100	13.8	14.2	14.6	14.9	15.1
Total	331,225	3624.5	3850.0	5741.9	5087.6	2028.6

In procuring these meters, competitive contract bidding with set criteria benchmarking industry best practices will be adopted. Meters will be AMI compliant to ensure commercial transactions with NBET and TCN and amounts of energy injected to the networks operated by the IBEDC are efficiently recorded.

6.3.3 New connections plans

IBEDC has put in place a connection plan with clear and transparent procedures to attend any request of new service connection, including on-line application, publication on the IBEDC's website of all the information on the connection process, providing customers WEB access to

records of GIS, provision of information on status of requests for connection to Contact centres and procedures to be followed for applications.

New Connection Procedure

In handling new connections request, customers are required to fulfil the following conditions before putting in a connection request;

- apply for electricity supply in a format required by the IBEDC and approved by the Commission
- provide a declaration of supply requirements completed by an appropriate authority in a format required by the IBEDC and approved by the Commission
- provide IBEDC with acceptable identification and all information necessary to enable it to arrange to provide supply to the address
- pay any capital contribution, connection charge and security deposit requested by IBEDC and approved by the Commission

Existing Supply Address Procedure

In handling exiting connections request, customers are required to fulfil the following conditions before putting in a connection request;

- submit to a IBEDC, an application in his or its name, in a format required by IBEDC and approved by the Commission
- accept the terms and conditions of the supply of IBEDC, approved by the Commission
- pay any connection charge and or security deposit required by IBEDC and approved by the Commission
- provide the IBEDC with acceptable identification and all information necessary to enable the IBEDC arrange to provide electricity supply to the address

6.4 Working with Meter Asset Providers (MAP)

IBEDC plans to reduce its current metering gap using authorized MAP by increasing the number of new meters installed to an average of 34,101 per month. This is to reduce estimated billing and to improve customer trust in their energy billing.

The MAP rollout plan is shown in **Table 18** below;

Table 18: MAP Rollout Plan

MAP Name	Contracted Meters	Metering period (months)	Monthly Target	2019	2020	2021
MAP 1	158,111	29	4392	31,621	79,057	47,433
MAP 2	254,901	29	7081	50,980	127,451	76,470
MAP 3	116,875	29	3247	23,376	58,433	35,066
MAP 4	135,444	29	3762	27,089	67,722	40,633
MAP 5	87,661	29	2435	17,531	43,831	26,299
MAP 6	128,640	29	3573	25,727	64,321	38,592
MAP 7	107,285	29	2980	21,456	53,644	32,185
Total	988,917			197,780	494,459	296,678

IBEDC commenced deployment of 988,917 meters under the MAP scheme in August 2019 and expected to conclude deployment by December 2021 based on the meter deployment plan submitted to NERC.

6.5 Commercial operations investments

6.5.1 Incident Reporting Management System

IBEDC has an IRMS platform which supports quick and accurate identification of location and analysis of extent of any interruption in electricity supply to customers and enable fast resolution and service restoration. The IRMS platform is linked to IBEDC's customer and asset database.

The IRMS module enabled reception and automatic classification of complaints, follow up of complaints and actions on the distribution network and presentation of information to management to assist in monitoring company performance and making decisions.

IBEDC is currently working to ensure the IRMS is integrated with the point of electricity supply and network assets using GIS by Dec 2022 to keep permanent track of activities at the regional Distribution Operation Centres.

IBEDC plans to spend NGN 325 million CAPEX to ensure this requirement is achieved. The annual break down is shown in Table 19.

Table 19: Projected CAPEX Summary for IRMS

Year	CAPEX NGN (million)
2020	65
2021	65
2022	65
2023	65
2024	65
Total	325

6.5.2 Revenue protection plans

6.5.2.1 Revenue Protection Project & Advanced Metering Infrastructure

IBEDC has in place a robust Revenue protection plans which is supported by Advanced Metering Infrastructure (AMI). The Revenue Protection plan (RPP) is targeted at high voltage customers, medium voltage customers, and low voltage customers with monthly consumption above 1,000 kWh to ensure that every unit (kWh of electricity) consumed in that “high value” segment of the market served by the IBEDC is metered and billed on a permanent basis.

IBEDC’s Revenue Protection Plan is based on the following;

- need to systematically record and monitor consumption of selected groups of customers targeted by the RPP using remote metering enabled by Advanced Metering Infrastructure (AMI); and
- need to adopt consistent corrective action when irregular situations are detected, to ensure full metering and billing of consumption on a permanent basis.

To achieve both tasks, organizational arrangements (creation of one or more Metering Control centres) is implemented to make proper and timely use of the information provided by the AMI with the support of state-of-art software (Meter Data Management (MDM), and to adopt consistent corrective action if needed.

6.5.2.2 Regularisation of illegal customers

IBEDC has put in place area strategies which include;

- Regularization of consumers not registered as customers located in manageable areas.

- Consumption assessment in areas with constraints limiting the utilities' field operations i.e. non-manageable areas
- Regularization of service delivery (electricity supply and commercial operations) in non-manageable areas with high/medium commercial losses

6.5.2.3 *Revenue protection for MDAs*

IBEDC is currently metering MDAs gradually based on their business/strategic importance, magnitude of their consumption and promptness in settling bills. IBEDC has a total of 2312 MDAs out of which 1491 are metered and 821 are unmetered.

6.5.3 Management system plans

6.5.3.1 *Commercial Management System*

IBEDC has in place CMS supports the following activities;

- generation and issuance of bills and related processes
- management of cases involving violation of contracts and irregular/illegal service connection
- massive rebilling for extended periods (around 5 years)
- processes related to collection of bills and management of unpaid bills
- management of requests from customers applying for a new service connection or any change in their current contract
- management of complaints received from customers.
- tracking of meters and other devices
- snapshot on the status of various customer-related performance indicators and
- management of energy sales to dealers.

IBEDC has plans to upgrade the entire meter reading process by automating the meter reading, bill consumption, meter inspection, spot billing etc through the deployment of mobile terminals and appropriate software to be used by the field resources.

IBEDC plans to spend NGN 25 million CAPEX to ensure this requirement is achieved. The annual break down is shown in

Table 20.

Table 20: Projected CAPEX Summary for CMS

Year	CAPEX NGN (million)
2020	5
2021	5
2022	5
2023	5
2024	5
Total	25

6.5.3.2 Enterprise Resource Planning System

IBEDC has in place Enterprise Resource Planning system which supports the following activities;

- Companywide financial management, including budget preparation and monitoring of execution
- Accounting data integration: management of receivable accounts and payable accounts, banking operations, tax declaration and general accounting
- Management of liquid assets, expenses and investment budget, bank reconciliation statement, assets management, loans and leases management, and internal risks and insurances management
- Planning, operations and management of inventories of warehouses and other facilities for storage of materials and equipment
- Operations related to management of human resources: management of employees' database, payroll, recording of attendance, training, evaluation and promotion, recruitment and occupational health and
- Processes for procurement of goods and services companywide.

IBEDC plans to spend NGN 425 million CAPEX to ensure this requirement is achieved. The annual break down is shown in Table 21.

Table 21: Projected CAPEX Summary for ERP

Year	CAPEX NGN (million)
2020	85

2021	85
2022	85
2023	85
2024	85
Total	425

6.5.3.3 Geographic Information System

IBEDC has in place Geographic Information system which supports the following activities;

- reliable network assets and customer’s databases
- a centralized Network Asset Database (CNADB) that integrates technical information from the electricity network assets and connectivity between them to customer database by interfacing between the Geographic Information System (GIS), Commercial Management System (CMS), Incidents Recording and Management System (IRMS) and Supervisory Control and Data Acquisition System. The interfacing enables outage prediction capabilities, regularization process of consumers illegally connected to the network, checking adequacy of billing of unmetered customers and linking metered customers to reading routes.

IBEDC plans to spend NGN 290 million CAPEX to ensure this requirement is achieved. The annual break down is shown in Table 22.

Table 22: Projected CAPEX Summary for GIS

Year	CAPEX NGN (million)
2020	290
2021	
2022	
2023	
2024	
Total	290

6.5.3.4 Supervisory Control and Data Acquisition System

IBEDC is currently working on deployment of a robust SCADA system utilizing communications media to control and manage the following electrical assets; Transformers, Feeder Lines, 33kV Outdoor Circuit Breakers, 11kV Feeder Panels, Transformer Control Panels, Line Control Panels,

Line Isolators, Injection Substation’s Auxiliary Transformers (For station services), Tripping Units, Voltage Transformers and Current Transformers, Injection substations

IBEDC plans to incorporate the Supervisory Control and Data Acquisition (SCADA) system to remotely operate, supervise and control their high and medium voltage infrastructure. The SCADA system will be complemented by IRMS to manage and resolve incidents at low-voltage level to increase quality and reliability in electricity supply and reduce operating costs.

IBEDC plans to spend NGN 3.6 billion CAPEX to ensure this requirement is achieved. The annual break down is shown in Table 23.

Table 23: Projected CAPEX Summary for SCADA

Year	CAPEX NGN (million)
2020	1,479.42
2021	1,479.42
2022	204.00
2023	213.00
2024	224.00
Total	3,599.84

6.5.3.5 Works Management System

IBEDC is currently working on centralization of the management of assets and network information to maximize reliability and efficiency, spatial asset management, network planning and analysis, operational awareness, field mobility, and seamless integration with key network systems are features that will be introduced for the benefits of effective network data management, improved decision making and lower TCO.

IBEDC plans to incorporate the Works Management System (WMS), also identified as Enterprise Asset Management System (EAMS), to support planning and execution of works in electricity networks infrastructure, including construction of new networks (expansion plans), rehabilitation/upgrade of existing networks and works to connect new customers. The Works Management System will also enables efficient execution of processes for network planning, costing, preparation of quotations to applicants, assignment of works to own staff/appointed contractors (work orders generation process), control of flow of materials, supervision of execution of works and commissioning of works.

IBEDC plans to spend NGN 75 million OPEX to ensure this requirement is achieved. The annual break down is shown in Table 23.

Table 24: Projected CAPEX Summary for WMS

Year	CAPEX NGN (million)
2020	15
2021	15
2022	15
2023	15
2024	15
Total	75

6.5.4 Customer services

The major focus for IBEDC is to provide exceptional service at every point of interaction to ensure that the company's Customer Care is known to exceed the customer's expectation in service delivery. IBEDC's objectives are

- To improve customer satisfaction by prompt resolution of customer complaint
- To build a strong and healthy customer database by capturing 100% customer information on IBEDC's database
- To improve service delivery through uptime infrastructure delivery within franchise area

6.6 Health and safety plans

IBEDC Health and Safety requirements include training of staffs and procurement of Personal Protective Equipment (PPE) like Safety belts, Helmets, Safety boots, Gloves.

IBEDC plans to spend NGN 319.2 million CAPEX and NGN 660.23 million OPEX to ensure this requirement is achieved. The annual break down is shown in Table 25.

Table 25: Projected Health and Safety OPEX and CAPEX Summary

Year	CAPEX NGN (million)	OPEX NGN (million)
2020	96.18	106.79
2021	81.00	99.28
2022	51.68	123.89
2023	45.09	213.11
2024	45.26	117.16
Total	319.2	660.23

Table 26: Historical Annual Safety Trainings

Year	Name of Training	Details of each named Training
2016	Ladder Safety	Conducted for all Technical Line Workers in the region on the safe use of ladders
	Grounding and Earthing	Conducted for Technical Staff on the need for protection for electrical installation and overhead line maintenance
	Practical Demonstration on Use of Grounding Equipment	Technical training with practical demonstrations in the use line grounding equipment for all technical staff
	Technical & Safety Sensitization Workshop	Conducted for all Technical Staff on Safety & Preventive Maintenance, Safe Fault Clearing, Customer Relationship for Technical Staff and Email Etiquette
	Safety Orientation	Induction Training for newly employed Technical Staff
	Defensive Driving	Defensive driving techniques training for 30 company drivers
	5S Training	Housekeeping training for staff members
	IBEDC Safety Rep & Formation	Training conducted for selected Safety Representatives in all the Business Hubs
	Grounding Equipment & The Use	Technical training with practical demonstrations in the use line grounding equipment for all technical staff
	Orientation	Induction training for new Distribution Substation Officers
2017	Ladder Safety	Conducted for all Technical Line Workers in the region on the safe use of ladders
	Job Safety Analysis	Conducted for Technical Staff on hazard identification and controls skills required for their daily tasks
	Emergency Response and Evacuation Procedures	Conducted for Technical Staff on how to effectively respond in emergency situations and evacuate if necessary
	Fire Extinguisher Training	Conducted for Technical Staff on the use of fire extinguisher
	Health Awareness Training	Conducted for all Staff in the regions
Technical Safety Code	Conducted for Technical Staff for the effective communication and implementation of the Technical Safety code	

Year	Name of Training	Details of each named Training
	Technical Safety & Injury Prevention	Training aimed at improving operational safety and reducing losses and was conducted for 250 participants
	5S Special Training	Special Housekeeping training for all the Admin staff and Supply Chain staff with aim to sustain standards & improve productivity
	Hygiene & Handwashing Techniques	Aimed at promoting good sanitary and good hygiene practice
	Orientation	Induction training for the new Revenue Protection & Distribution Substation Officers
2018	First Aid at Work	Conducted for Technical Staff on how to give adequate first response care to injured persons
	Safety Orientation	Induction Training for newly employed Technical Staff
	Safe Fault Clearing Activities	Conducted for Technical Staff on safety precautions required for incident free overhead line fault clearing
	Personal Protective Equipment	Conducted for Technical Staff on how to use their PPE
	Substance Misuse and Abuse	Conducted for Technical Staff on the impact of risk of working under the influence of intoxicating substances and company policy on same
	Job Danger Analysis	The training was conducted for both commercial & technical staff to assist them in identifying and controlling hazards in their jobs
	Fire Extinguishers Training	Fire Response Training carried out for 11 participants in the Regional Office following the deployment of new sets of fire extinguisher to the Regional Office
	Fire Safety Refresher	Training conducted for staff on how to prevent and manage fire emergencies
H1 2019	Effective Communication	The training was aimed at reducing internal & external communication breakdown and the associated operational hazards
	Technical Training	Aimed at improving operational health & safety culture
	Health and Safety & the Future of Work	Training was aimed at creating safety awareness for the staff to commemorate the World Safety Day
	Technical and Operational Safety Training	Conducted for all Technical Staff.
	Solid and Hazardous waste management	

Year	Name of Training	Details of each named Training
	ISO 45001;2018 Internal Auditors training	Conducted for selected representatives from all IBEDC department
	First Aid and Emergency Response Training	Conducted for all Technical Supervisors, Team leads and O&M Supervisors

Table 27: Historical Community engagement and safety trainings

Year	Name of Training	Details of each named Training
2014		
2015		
2016	Public Electrical Safety Awareness Training	Conducted across towns & villages under IBEDC coverage area
2017	Public Electrical Safety Awareness Training	Conducted across towns & villages under IBEDC coverage area
2018	Public Electrical Safety Awareness Training	Conducted across towns & villages under IBEDC coverage area
H1 2019	Word Safety Day Community Awareness Training	Training awareness on safety for community representatives

Table 28: Planned annual safety trainings

Year	Name of Training	Details of each named Training
H2 2019	Emergency Response Management	Training for technical staff to equip them on emergency preparedness & loss recovery
	Stress Management for Optimal Productivity	Training for staff to make them understand stressors, their effects and controls
	Permit to Work- Refresher	Refresher training for technical staff on permit system
	Behavioural Safety	Behavioural safety training for staff (Commercial & Technical)

Year	Name of Training	Details of each named Training
2020	Drugs & Alcohol and their Effects	Training to address and discourage the use of substance abuse by staff
	Use & Maintenance of PPE	Training focusing on all the technical staff across the Business Hubs
	Ladder Safety & Working at Height	To address all issues that could lead to work at height incident
	Effective Line Grounding Techniques	To address all issues that could lead to work at height incident
	Basic First Aid Techniques	Training to address life-saving techniques during emergencies
2021	Journey Management I	Training for all the company drivers aimed at preventing losses to vehicular incidents
	Journey Management II	Training for all the company drivers aimed at preventing losses to vehicular incidents
	Confined Space & Substation Safety	To ensure safety & performance in the control room
	Equipment Safety	To ensure safe use of equipment
	Ergonomics Principles	To reduce the risks of injuries in the office environment
	Office & Field Safety	To address all office & field practices, unsafe acts & conditions that can cause or increase the likelihood of accident
2022	Food & Health	
	First Aid at Work	To equip staff with adequate skills to treat injured persons
	Emergency Preparedness	
	LOTO	To reduce risk of accidental release of energy
	Environmental Safety	
2023	Lone Working	To reduce the prevent and reduce the risks of lone working

Year	Name of Training	Details of each named Training
	Field Safety & Crisis De-escalation Techniques	Training aimed at providing personnel with adequate skills to avert assaults
	Team Leadership	Training specifically for all team leads and technical supervisors
	Managing Psychosocial Hazards on the Job	To reduce the effect of mental stress for improving job performance
	Housekeeping	To ensure office tidiness and disease control
2023	Safety from the Control Room to the Line	
	Personal Protective Equipment	
	Fire Safety and Prevention	To reduce the risk of fire
	Solid Wastes & Management	To create environmental awareness & improve compliance
	Task Analysis	To assist in identifying hazards and control measures

Table 29: Planned community engagements on safety

Year	Name of Training	Details of each named Training
H2 2019-2024	Public Electrical Safety Awareness Training	To be conducted across towns & villages under IBEDC franchise

6.7 Resourcing plans

6.7.1 Human Resources

IBEDC HR requirements include delivery on IBEDC improvement plans, associated costing on impact of network improvement and maintenance, improved service delivery to customer, improved management system for IBEDC's staff, development of projections for new hires,

acquisition of work tools and technical trainings on ERP management and meter bypass detection.

IBEDC plans to spend NGN 555 million CAPEX to ensure this requirement is achieved. The annual break down is shown in Table 30.

Table 30: Projected HR CAPEX Summary

Year	CAPEX NGN (million)
2020	163
2021	179
2022	81
2023	71
2024	61
Total	555

6.7.2 Security

IBEDC Security requirements include deployment and maintenance of CCTV surveillance camera to all 15MVA and above injection substation and entry controls biometric device installations across the franchise.

IBEDC plans to spend NGN 833 million CAPEX to ensure this requirement is achieved. The annual break down is shown in Table 31.

Table 31: Projected Security CAPEX Summary

Year	CAPEX NGN (million)
2020	140.00
2021	150.00
2022	168.00
2023	180.00
2024	195.00
Total	833.0

6.7.3 Fleet Logistics

IBEDC Fleet and Logistics requirements include deployment of operational, status and articulated vehicles, fleets maintenance, fleets servicing and fleets repairs.

IBEDC plans to spend about NGN 5.28 billion CAPEX to ensure this requirement is achieved. The annual break down is shown in Table 32.

Table 32: Projected Fleet Logistics OPEX and CAPEX Summary

Year	CAPEX NGN (million)
2020	1055.8
2021	1055.8
2022	1055.8
2023	1055.8
2024	1055.8
Total	5,279.0

6.7.4 Building and Facilities

IBEDC Fleet and Logistics requirements include renovation of Business and Service Hubs, completion of buildings acquired and situated within the franchise zone and construction of 5 regional offices.

IBEDC plans to spend about NGN 2.7 billion CAPEX to ensure this requirement is achieved. The annual break down is shown in Table 33.

Table 33: Building and Facilities CAPEX Summary

Year	CAPEX NGN (million)
2020	543.68
2021	578.05
2022	615.85
2023	457.44
2024	503.18
Total	2,698.20

6.7.5 Other resource requirements

IBEDC other resource include IT requirements needed to achieve the planned MDA Collection Strategy, Customer Service and Revenue Efficiency, Customer Regularization, New Connection Request. The resources include Internet and WAN Connection at Business Units, Disaster Recovery Site, Computer systems, Storage and Backup systems, Application development,

Application licensing, Data centre upgrade, Billing and Vending system, Handheld devices and tablets, Document management system and Microsoft exchange.

IBEDC plans to spend 2.51 billion CAPEX to ensure this requirement is achieved. The annual break down is shown in Table 34.

Table 34: Other resource requirement CAPEX Summary

Year	CAPEX NGN (million)
2020	1332.5
2021	376.0
2022	257.5
2023	257.5
2024	287.5
Total	2,2511

6.8 Achieving Cost Efficiency

IBEDC has a policy in place which ensure procurement of goods and services are cost efficient without compromising optimal quality. The procurement policy supports two types of procurement;

- Competitive procurement in which bids from competing contractors, suppliers, or vendors are invited by openly advertising the scope, specifications, and terms and conditions of the proposed contract as well as the criteria by which the bids will be evaluated and
- Direct Procurement in circumstances where there is only one vendor that can supply the goods, works or services being procured and there is no reasonable alternative or substitute for the item and (or) there is an urgent need for the goods, works or services being procured and because of the urgency, the other available methods of procurement are impractical in the circumstance.

In ensuring cost efficiency on the PIP, IBEDC will put in place additional steps which include;

- Sampling the pricing as put forward by providers to ensure the best in quality service and price is obtained
- Ensuring purchase of employee work tools and Personal Protective Equipment are made in bulk in order to gain some degree of economies of scale

The flowcharts of IBEDC's procurement scenarios for goods and services are shown in Annex B.

6.9 Overall investment plan

IBEDC's investment requirement over the next five years to achieve the target outputs in this plan is a CAPEX of N83.9billion. IBEDC's funding plan is discussed in Section 7.

Table 35: Network Investment Plan

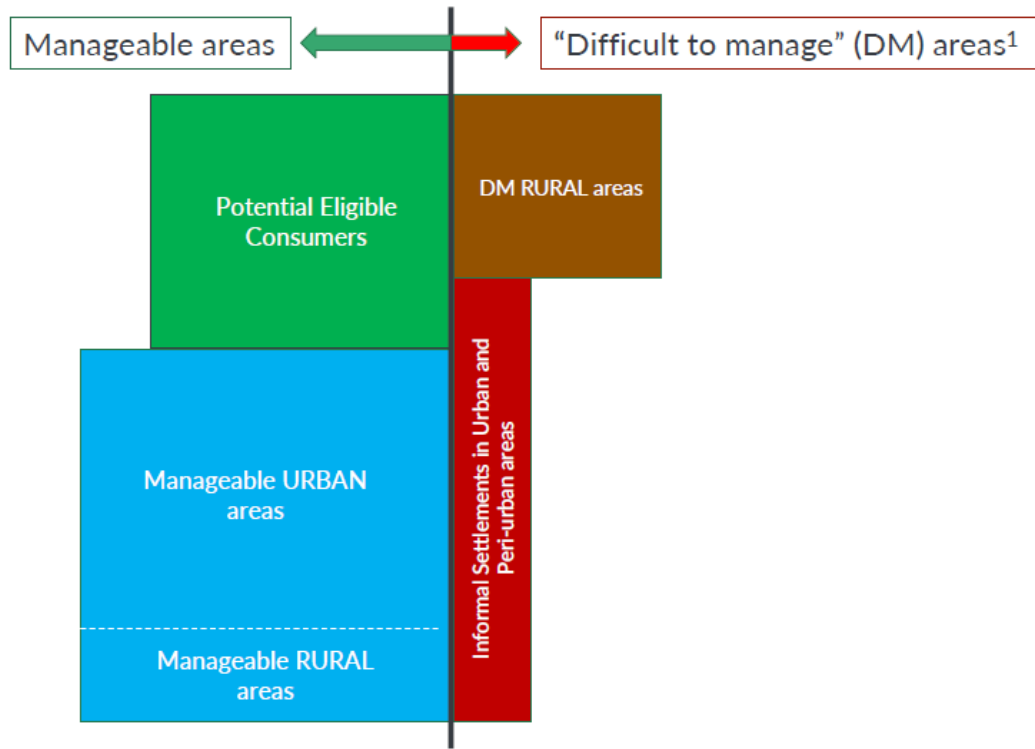
Network Investment Type	Capex (N Million)				
	2020	2021	2022	2023	2024
Bulk Metering	4,433	4,680	6,600	5,960	2,915
CMS	5	5	5	5	5
Revenue Protection	25	250	20	20	20
GIS	290	-	-	-	-
IRMS	65	65	65	65	65
WMS	15	15	15	15	15
SCADA	1,479	1,479	204	213	224
ERP	85	85	85	85	85
OTHER IT NEEDS	1,333	376	258	258	288
Human Resources	163	179	81	71	61
Health and Safety	96	81	52	45	45
Fleet Logistics	1,056	1,056	1,056	1,056	1,056
Building and Facilities	544	578	616	457	503
Total	18,655	18,570	17,566	16,276	12,861

6.10 Innovative strategies

IBEDC's plan is to segment the customers and the feeders by which they are served into different market segments (manageable and difficult-to-manage) as shown in Figure 7 and then address the different customer market segment identified with different strategies.

IBEDC is currently using an OMNI tool to rank feeders into the different market segment.

Figure 7: Four market segments defined by CaBTAP



6.10.1 Manageable Areas

6.10.1.1 Manageable Urban Areas

This market segment will be IBEDCS’s high priority areas for ring-fencing communities and providing reliable power supply at cost-reflective tariffs. IBEDC will identify communities in this market segment of the network who are willing to pay for cost-reflective power supply to cover the cost of possible embedded generation sources and additional investments in ensuring reliable power distribution in such areas. IBEDC will prioritize investments in feeders and associated distribution infrastructure in these areas.

6.10.1.2 Manageable Rural Areas

This market segment will be IBEDC’s high priority for ring-fencing communities and providing reliable power supply at cost-reflective tariffs. IBEDC will identify communities in this market segment in the network who are willing to pay for cost-reflective power supply to cover the

cost of possible embedded generation sources and additional investments in ensuring reliable power distribution in such areas.

6.10.1.3 *Potential Eligible Customers*

IBEDC plans to retain all potential eligible customers by upgrading their service level through prioritized infrastructure investment currently provided to ensure they get improved reliable and quality power supply.

IBEDC, however is willing to allow potential eligible customers who are not owing IBEDC and willing to pay the Distribution Use of System (DUoS) charge and the approved Competition Transition Charge (CTC) to sign up as eligible customers.

6.10.2 Difficult to Manage Areas

6.10.2.1 *Informal and urban peri-urban areas*

Identified community settlements in urban and peri-urban areas will be engaged to determine affordable tariffs and energy requirements. Based on agreed commercial commitments from the settlements, proposed strategies include

- Bulk metering for the settlement
- Leasing off for distribution sub-franchising
- Supply based on payment performance from the community
- Engagements with the state and local governments to determine energy subsidies and network investment support for poorer settlements.

7 Financial plan

7.1 Overview

This section covers:

- [Planned outputs](#) from the three scenarios and
- [Funding plans](#); and

7.2 Planned outputs

This PIP considers three scenarios – Zero CAPEX scenario, Regulatory Allowed CAPEX and IBEDC Required CAPEX Scenario.

The key characteristics of the scenarios are:

- **“Zero CAPEX” Scenario** based on NERC’s tariff and loss assumptions from the latest minor review (June 2019), which treated the end of 2020 as year 4 of ATC&C loss reduction;
- **“Regulatory Allowed Capex” Scenario** – The Capex and Opex requirements as well as end-user tariffs are as stipulated in the June 2019 Minor Review MYTO Model. In this scenario, it is modelled that IBEDC’s has access to the approved CAPEX and OPEX to determine IBEDC’s achievable loss reduction trajectory from 2020 to 2024 is not as aggressive as NERC envisages in the Minor Review Model;
- **“IBEDC Required Capex” Scenario** – The Capex and Opex requirement are higher and reflect what is needed, at cost-reflective tariffs, to achieve loss reduction (more than in the “Regulatory Allowed Capex” scenario) which will still not be as aggressive as NERC envisages in the Minor Review Model.

The “Zero CAPEX” scenario is currently the most probable, as it is consistent with the operational realities of IBEDC. However, the “IBEDC Required CAPEX” scenario allows IBEDC to achieve their most ambitious output goals.

7.2.1 Zero CAPEX Scenario

This is a scenario that assumes that IBEDC will not be able to raise any funds needed for Capex investments. The current loss position is maintained. The tariffs used at MYTO Minor Review tariffs for 2020 to 2024 is retained. The energy received from 2020 till 2024 is assumed to be

the same with 2019 projected levels till year end and IBEDC is expected to meet its full market obligation.

Table 36: Zero Capex Scenario – Inputs

Assumptions	2020	2021	2022	2023	2024
Capex (billion N)	11,320	11,320	14,150	14,150	14,150
ATC&C Actual	49.6%	49.6%	49.6%	49.6%	49.6%
ATC&C NERC tariff	20%	16%	16%	16%	16%

Without any CAPEX investments, IBEDC will not be able to fully remit to the market as expected by NERC, with NBET bills remittance incomplete as shown in Table 37. In this outcome, there is nothing available for operating expenditure which will mean the business cannot operate.

Table 37: Zero Capex Scenario – Outputs

		2020	2021	2022	2023	2024
<i>Cost-reflective tariff</i>		88.45	90.77	92.17	94.20	96.57
<i>Allowed tariff</i>		46.50	44.18	43.61	43.75	44.27
Opening cash flow	Nm	7,837	-	-	-	-
Receipts						
Cash Collection from Credit customers	Nm	82,025	77,920	76,921	77,172	78,085
Equity Injection	Nm	-	-	-	-	-
Bank loan drawdown	Nm	-	-	-	-	-
Shareholder Loan	Nm	-	-	-	-	-
Payments						
Payment to NBET	Nm	57,301	51,227	51,065	51,579	52,495
Payment to MO	Nm	28,307	22,439	21,603	21,339	21,424
<i>% of NBET Bill Paid</i>	%	56%	46%	41%	38%	35%
<i>% of MO Bill Paid</i>	%	100%	100%	100%	100%	100%
Loan Payment	Nm	4,254	4,254	4,254	4,254	4,166
Loan Default	Nm	-	-	-	-	-
Staff Cost	Nm	-	-	-	-	-
<i>% of staff cost paid</i>	%	0%	0%	0%	0%	0%
Accounts Payable	Nm	-	-	-	-	-
Taxation and VAT	Nm	-	-	-	-	-
Capex	Nm	-	-	-	-	-
Cash available for distribution	Nm	-	-	-	-	-

		2020	2021	2022	2023	2024
Dividends	Nm	-	-	-	-	-
Cash available after dividends	Nm	-	-	-	-	-
Closing cash flow	Nm	-	-	-	-	-

7.2.1 Regulatory Allowed CAPEX Scenario

This is a scenario that assumes that IBEDC can CAPEX raise the Regulatory Allowed Capex needed for Capex investments through its IGR.

The tariffs used at MYTO Minor Review tariffs for 2020 to 2024. The energy received from 2020 till 2024 is same as assumed in the MYTO Minor Review model. The ATC&C loss reduction projection is a trajectory that IBEDC can achieve given the limited Regulatory Allowed Capex for 2020 to 2024.

Table 38: Regulatory Allowed Capex Scenario Inputs

	2020	2021	2022	2023	2024
Assumptions					
Capex (billion N)	11,320	11,320	14,150	14,150	14,150
Projected ATC&C	48.7%	45.7%	41.9%	34.7%	25.9%
ATC&C NERC tariff	20%	16%	16%	16%	16%
% of CAPEX from IGR	0%	0%	0%	0%	0%
% from Debt	100%	100%	100%	100%	100%
Debt Rate	10%	10%	10%	10%	10%
Tenor – Debt (years)	20	20	20	20	20
Cash Injection (Nm)	500	500	500	500	500

In this outcome, CAPEX funding is raised but due to the tariffs not being cost-reflective, funds generated from the operations are insufficient to cover market bills. there is nothing available for operating expenditure which will mean the business cannot operate and a default on the loan repayment will occur.

Table 39: Regulatory Allowed Capex Scenario Outputs

	2020	2021	2022	2023	2024
<i>Cost-reflective tariff</i>	87.02	84.52	80.43	73.33	66.38
<i>Allowed tariff</i>	45.97	39.77	39.19	38.77	38.94

		2020	2021	2022	2023	2024
Opening cash flow	₦m	7,837	-	-	-	-
Receipts						
Cash Collection from Credit customers	₦m	83,372	83,919	88,598	99,904	114,719
Cash Injection	₦m	500	500	500	500	500
Bank loan drawdown	₦m	-	-	-	-	-
Loan	₦m	11,320	11,320	14,150	14,150	14,150
Payments						
Payment to NBET	₦m	59,148	57,726	63,242	74,811	89,628
Payment to MO	₦m	28,307	22,439	21,603	21,339	21,424
<i>% of NBET Bill Paid</i>	%	58%	52%	52%	56%	63%
<i>% of MO Bill Paid</i>	%	100%	100%	100%	100%	100%
Loan Payment	₦m	4,254	4,254	4,254	4,254	4,166
Loan Default	₦m	-	1,330	2,659	4,321	5,983
Staff Cost	₦m	-	-	-	-	-
<i>% of staff cost paid</i>	%	0%	0%	0%	0%	0%
Accounts Payable	₦m	-	-	-	-	-
Taxation and VAT	₦m	-	-	-	-	-
Capex	₦m	11,320	11,320	14,150	14,150	14,150
Capex used (%)	%	100%	100%	100%	100%	100%
Cash available for distribution	₦m	-	-	-	-	-
Dividends	₦m	-	-	-	-	-
Cash available after dividends	₦m	-	-	-	-	-
Closing cash flow	₦m	-	-	-	-	-

7.2.1 IBEDC Required CAPEX Scenario

In the IBEDC Required Capex scenario, it is assumed that IBEDC will be allowed to invest a higher Capex than the Regulatory Allowed Capex. Also, it is assumed that IBEDC could charge a truly cost-reflective tariff which will cover this higher investment level and will make it much easier for IBEDC to source and spend above the MYTO Capex limit especially in years 2020 and 2021. IBEDC will be able to achieve losses that are more aggressive than in the Regulatory Allowed Scenario.

Table 40: IBEDC Required Capex Scenario – Inputs

Assumptions	2020	2021	2022	2023	2024
Capex	18,655	18,570	17,566	16,276	12,861
Proposed ATC&C	46.0%	40.5%	33.9%	27.1%	19.1%
ATC&C NERC tariff	36%	30%	24%	18%	12%
% of CAPEX from IGR	29%	29%	29%	29%	29%
% from Debt	71%	71%	71%	71%	71%
Debt Rate	10%	10%	10%	10%	10%
Tenor – Debt (years)	20	20	20	20	20
Cash Injection	500	500	500	500	500

In 2020, the average tariff increases to 82.69 N/kWh as against the 46.50 N/kWh in MYTO 2019, which will allow IBEDC settle market bills, fund both CAPEX and OPEX, and settle our debt obligations. This trend will then be expected to continue over the next years.

Table 41: IBEDC Required Capex Scenario – Outputs

		2020	2021	2022	2023	2024
<i>Cost-reflective tariff</i>		82.69	78.41	72.93	68.41	63.81
Opening cash flow	₦m	7,837	6,817	2,362	-	-
Receipts						
Cash Collection from Credit customers	₦m	156,016	163,116	168,482	174,347	180,437
Cash Injection	₦m	500	500	500	500	500
Bank loan	₦m	-	-	-	-	-
Loan	₦m	13,336	13,276	12,558	11,636	9,194
Payments						
Payment to NBET	₦m	96,002	96,282	96,885	97,503	98,138
Payment to MO	₦m	22,922	22,439	21,603	21,339	21,424
<i>% of NBET Bill Paid</i>	%	100%	100%	100%	100%	100%
<i>% of MO Bill Paid</i>	%	100%	100%	100%	100%	100%
Loan Payment	₦m	4,254	5,820	7,380	8,855	10,133
Loan Default	₦m	-	-	-	-	-
Staff Cost	₦m	6,899	7,737	8,675	9,728	10,909
<i>% of staff cost paid</i>	%	100%	100%	100%	100%	100%
Accounts Payable	₦m	9,787	10,382	11,216	12,134	13,146
Taxation and VAT	₦m	149	5,743	6,764	7,341	7,869
Capex	₦m	18,655	18,570	17,566	16,276	12,861

		2020	2021	2022	2023	2024
Capex (%)	%	100%	100%	100%	100%	100%
Cash available for distribution	₦m	19,021	16,736	13,813	13,306	15,651
Dividends	₦m	12,203	14,374	13,813	13,306	15,651
Cash available after dividends	₦m	6,817	2,362	-	-	-
Closing cash flow	₦m	6,817	2,362	-	-	-

7.3 Funding plans

IBEDC plans to raise 70% (NGN 60 billion) of its CAPEX requirement through CBN loan or Bank of Industry and the remaining 30% through Shareholders equity investment and funds generated from the business as return on capital investments component of our allowed costs.

The expected interest rate on the loan is going to be 10% with a 20-year tenure. This is currently the cheapest source of funds available to IBEDC

It is worthy of note that IBEDC will only be able to access this loan if there is adequate Government and Regulatory support needed to convince lenders against any uncertainty (like the removal of collection loss in 2015) which might affect the loan repayment.

8 Risk assessment and management

8.1 Overview

This section covers:

- [Approach to managing risk](#); and
- [Risk analysis](#).

8.2 Approach to managing risk

IBEDC has carried out a risk analysis of the business environment in the coming years. The following four step approach to risk management was followed:

- A series of risk identification sessions were held in which the major technical and commercial risks to the Performance Improvement Plan were identified and listed;
- A subjectively assessed risk likelihood was assigned to each identified risk according to the following ranges:
 - High: 67% - 100% probability of occurring
 - Medium: 34% - 66% probability of occurring
 - Low: 0% - 33% probability of occurring
- Similar subjectively assessed impacts (high, medium, low) were attached to each identified risk.
- For risks assessed as being high/medium or above the following risk management strategies were formulated:
 - Avoidance (eliminate, withdraw)
 - Reduction (optimize – mitigate)
 - Sharing (e.g. insure, transfer)
 - Retention (accept and budget)

The risk analysis is summarised in the next section.

8.3 Risk analysis

Table 42 provides a risk assessment for this performance improvement plan.

Table 42 – Risk assessment and management

Risk title	Risk description	Risk likelihood	Risk impact	Risk management strategy
<i>Brief title</i>	<i>Description</i>	<i>e.g. High, medium, low</i>	<i>e.g. High, medium, low</i>	<i>Avoidance (eliminate, withdraw) Reduction (optimize – mitigate) Sharing (e.g. insure, transfer) Retention (accept and budget)</i>
Loss reduction pathway in tariffs.	Discos have argued that NERC should recognize the actual loss position of the Discos. Discos have been unable to reduce losses due to non-cost reflective tariffs, low CAPEX allowance in the MYTO which doesn't reflect reality, high energy charges from NBET, and MDA collection loss is yet to be addressed. The timeline of non-cost reflective tariffs is provided in Section 0 in Table 2.	High	High	Retention (accept and budget). The decision on tariffs is outside the direct control of the Discos. Within the different scenarios modelled in section 0, we have considered different possible scenarios for allowed ATC&C losses. We have considered the impact this will have on Disco performance during the tariff period. It will be important to negotiate with NERC to avoid the worst tariff scenarios.
MDA payment.	MDA debts are not paid to date, current deliberations between the Discos and FGN only focuses on federal MDAs and not state. Discos need to engage with state MDAs to address the debt currently being accrued at the state level.	High	High	Retention (accept and budget). The decision on tariffs and the solution to MDA debt payment is outside the direct control of the Discos. Within the different scenarios modelled in section 0, we have considered different possible scenarios for MDA payment.

Risk title	Risk description	Risk likelihood	Risk impact	Risk management strategy
				It will be important to negotiate with FGN to avoid the worst MDA scenarios.
Performance agreement timescales.	<p>The performance agreements end date was originally December 2019.</p> <p>BPE has indicated that 2017 and 2018 will be treated as non-performance years.³ However, they are treating 2015, 2016 and 2019 as loss reduction years. None of the Discos have achieved the first three years of loss reduction, and even with cost reflective tariffs, it is unlikely they will achieve their full loss reduction commitment by the end of 2021.</p> <p>Based on the current performance of the Discos, the call option to buy back the Discos at \$1 if they fail to meet their commitments.</p>	High	High	<p>Avoidance (<i>eliminate, withdraw</i>).</p> <p>Under the current treatment of the loss reduction targets, Discos can use their businesses without compensation. This makes it very challenging to finance improvements unless the targets are made more achievable.</p> <p>This risk is not possible to manage, unless BPE amend the performance agreement targets to reflect an achievable trajectory.</p> <p>Negotiating with BPE is essential. If this is not resolved, the business may not be viable.</p>
Minor review.	No minor review has been implemented in tariffs since 2015 to date leaving the Discos operating under impossible economic conditions, and unable to meet their obligations.	High	High	<p>Avoidance (<i>eliminate, withdraw</i>).</p> <p>Failure to implement a minor review could qualify as a "change of law" force majeure event under the performance agreement, since the regulation is not being enforced.</p> <p>By declaring force majeure within the timescales, Discos would protect themselves from the performance targets and make themselves eligible to receive full compensation if the situation is not rectified in performance</p>

³ BPE - Presentation on the Review of Performance Target Dates of the DISCOS (21st February 2019)

Risk title	Risk description	Risk likelihood	Risk impact	Risk management strategy
				agreement timescales. To date, Discos have been reluctant to declare force majeure because of political implications. Once new performance agreements and tariffs have been implemented, Discos should enforce their entitlement to a cost-reflective tariff.
NBET charges for generation inconsistent with Disco tariffs.	<p>The NBET invoices issued to the Discos have remained significantly higher than MYTO projections, largely because NBET has been charging the Discos using the actual economic indices i.e. forex etc. However, the tariffs used by NBET remain higher than the generation tariff in the June 2019 MYTO minor review model.</p> <p>Once PPAs are activated, generation costs will deviate further from MYTO assumptions as capacity factors will be considerably higher once successor and NIPP generators can charge for available capacity.</p>	High	Low (providing minor reviews implemented)	<p>Retention (<i>accept and budget</i>).</p> <p>The scenarios in this report assume that generation tariffs are consistent with NBET current tariffs in real 2019 terms.</p> <p>This is addressed retrospectively when NERC use actual NBET invoices in minor reviews but will have an impact in short term cashflow and ability to meet market remittances.</p> <p>Regulatory need.</p> <p>NERC are requested to ensure their generation tariff formulae are consistent with those being applied by NBET, and that the capacity factor assumptions are consistent with SO declarations for all generation, so that the MYTO model provides a realistic tariff base.</p>
Generation levels.	<p>In past MYTO models, forecast generation levels have been significantly in excess of reality. Actual generation levels have changed very little since 2013.</p> <p>When there are generation shocks (such as in 2016), there is a disproportionate impact on</p>	High	High	<p>Retention (<i>accept and budget</i>).</p> <p>The scenarios in this report assume that generation levels remain at 2019 levels, with no increase.</p> <p>Regulatory need.</p>

Risk title	Risk description	Risk likelihood	Risk impact	Risk management strategy
	payment, due to customer dissatisfaction and the fact that fixed costs are spread over fewer kWhs.			MYTO minor reviews will be essential for tariffs to keep pace with generation levels.
Eligible Customers.	Some transmission connected customers of the Discos have self-declared themselves eligible customers and are currently receiving power illegally through TCN. Customers who self-declare themselves without due process create a risk to Disco revenue, financial performance, energy received and customer numbers. At present, TCN is refusing to Disconnect illegally defaulting customers as required under the Supplementary Order on the Commencement of TEM.	High	IBEDC risk assessment based on number of eligible customers	<p>Avoidance (<i>eliminate, withdraw</i>).</p> <p>If the market issue is not resolved, and tariff levels are not adjusted to compensate, the only option for some Discos may be withdrawal via force majeure.</p> <p>Regulatory need.</p> <p>It is important that any Eligible Customers pay the Competition Transition Charge (CTC) and that their status is legal.</p>
Meter Assets Providers (MAP).	The MAP regulation has been in effect for over a year now, however there has been limited progress by the MAP's in commencing metering. Recent reports indicate that a number of MAP's currently do not have the necessary finance to commence metering within the set timelines. Metering is likely to be based only on those customers who can afford to pay. Discos are not permitted to use regulated CAPEX for metering.	High	High	<p>Reduction (<i>optimize – mitigate</i>)</p> <p>IBEDC has managed their MAP contracts to ensure best possible service.</p> <p>However, a residual risk remains because the metering allowance by NERC is not adequate to allow financing of metering, therefore all meters will initially be financing by the customers themselves. Many of our customers may not be able to finance the CAPEX. This will mostly affect the residential customers in IBEDC's franchise area.</p> <p>Regulatory need.</p> <p>It is important that NERC reviews the metering CAPEX allowance to enable third party financing</p>

Risk title	Risk description	Risk likelihood	Risk impact	Risk management strategy
				of meters and to ensure that metering can reach all our customers.
Allowed CAPEX in MYTO model.	If allowed CAPEX is not consistent with assumptions, it will restrict the ability of IBEDC to make the required investment and may prevent the planned Outputs being achieved.	High	Medium	Retention (<i>accept and budget</i>) We have prepared this PIP for a range of allowed CAPEX scenarios, and the projected outputs will differ depending on the allowed CAPEX.
Limited or no access to finance.	The regulatory uncertainty, non-cost reflective tariffs since privatisation in 2013, and the fact that most Discos are effectively insolvent mean that commercial lenders are unwilling to lend to Discos. Investors have not received dividends.	High	Medium	Retention (<i>accept and budget</i>) In our financial planning, we have considered known sources of finance. We have considered cases where investment is financed out of free cashflow rather than commercial lending.
Acknowledged tariff shortfall covers liability.	NERC anticipated that liability to MO and NBET will be reduced by the tariff shortfall. However, NERC's calculation of the tariff shortfall differs from IBEDC's.	IBEDC risk assessment	Medium	Retention (<i>accept and budget</i>) We have considered a range of tariff scenarios based on a range of acknowledged tariff shortfall scenarios, and the projected outputs will differ depending on NERC's acknowledged tariff shortfall.
Project delivery timescales.	We have planned this PIP based on expected delivery timescales. However, there is a risk that external contractors may not deliver the work to time.	Medium	Medium	SLA (Service Level Agreements) are crafted to address the deliverables expected with specific timelines as well as enforceable penalties where breaches occur
Insurgency activities damage IBEDC assets (or other extreme events beyond	In recent years, insurgency and civil unrest has caused damage to electricity infrastructure in Nigeria. There is a risk of recurrence. Other extreme events could include (for example) extreme weather or seismic events.	IBEDC risk assessment	High	Sharing (<i>e.g. insure, transfer</i>) It is possible that specific investment to address short-term insurgency activities could be allowed for in tariffs as additional CAPEX, and outputs and/or allowed CAPEX could be reviewed in an

Risk title	Risk description	Risk likelihood	Risk impact	Risk management strategy
IBEDC's control e.g. extreme weather).				<p>extraordinary tariff review following these or similar extreme events.</p> <p>Avoidance (<i>eliminate, withdraw</i>).</p> <p>The Performance Agreement allows for withdrawal in the case of severe or prolonged insurgency and other specific force majeure events.</p>

DRAFT

Annex A Results of stakeholder consultation

Table 43: Summary of engagement programs and method adopted across the IBEDC franchise area:

Method	No of Events	Example Actions	Benefits & Feedback	Customer Class
Dialogue e.g. face to face meeting, panels, partnerships	AGUST 29 TH -SEPTEMBER 5 TH 10 Meetings and interface by Regional Heads across the franchise,	Constant communication with customer through Customer Relation Officers (CRO) and entire staff of IBEDC. Customer Engagement program periodically conducted across the franchise area. (see attached time-table). Participation in Community Development Association (CDA) Meetings.	Reduced tension and evident of preparedness to partner with IBEDC on issues of metering, investment and asset protection. Cooperation on supply need and usage and tariff regime implementation readiness.	Maximum Demand Customers, Point loads. Ministries Department and Agency Communities.
Consultation e.g. workshops, public meetings, formal consultations	July 31 st to September 2 nd , 2019, 14 town hall meetings.	Conducted Public Consultation in all the five (5) regions under IBEDC. (see attached time-table and reports)	Identification and prioritizing areas of investment needs for both system upgrade and expansion.	All classes of customers and relevant stakeholders.
Information gathering e.g. focus groups, customer research	August 26 TH to 31 st 26 chat sessions on for the PIP.	Online chat and feedbacks, Survey, Random Sampling, Questionaries'	Improvement of service delivery and customer compliant handling efficiency at all level.	All classes of customer. But mostly targeted at Residential class.
Information Giving	This is done every week, four TV	Engagement through CROs, Staff and relevant	Positivity on the new directive of the market reset	All class of customers.

<p>e.g. face to face, radio programs, social media platforms, company website, television programs, conference.</p>	<p>Programmes and six Radio programmes for interaction and education.</p>	<p>stakeholders including Vendors and External Solicitors.</p> <p>Live programs on television and radio station across the franchise area.</p> <p>Publications on the company website and all official social media platforms like Facebook, Twitter and Instagram.</p> <p>Printing of flyers and banner and pasting across IBEDC's franchise area.</p>	<p>and commendation on other enhancing program like Meter Asset Provider (MAP) taking care of the metering need.</p>	
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Annex B IBEDC's Procurement Scenarios

Figure 8: IBEDC's Procurement Process - Goods

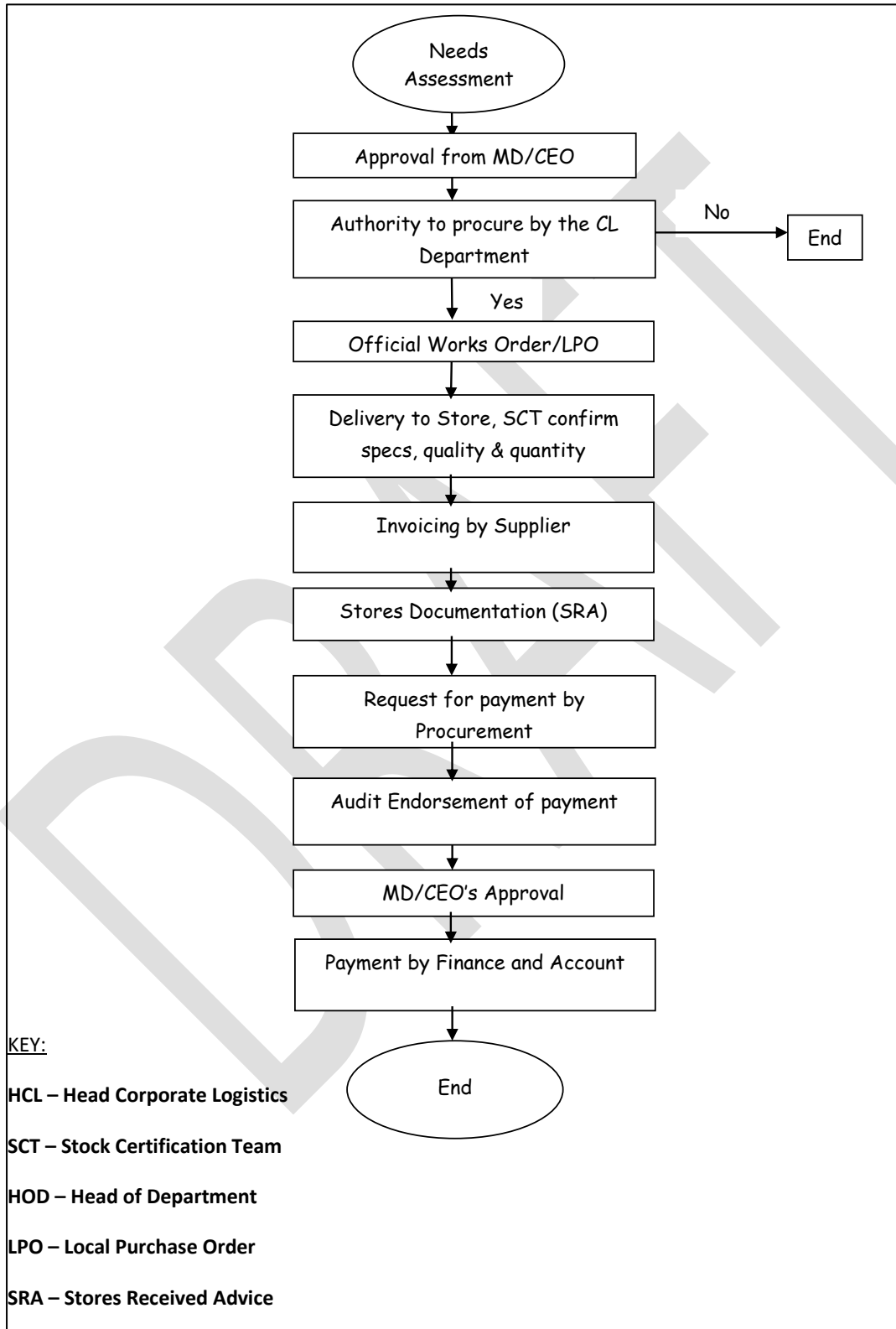


Figure 9: IBEDC's Procurement Process - Works

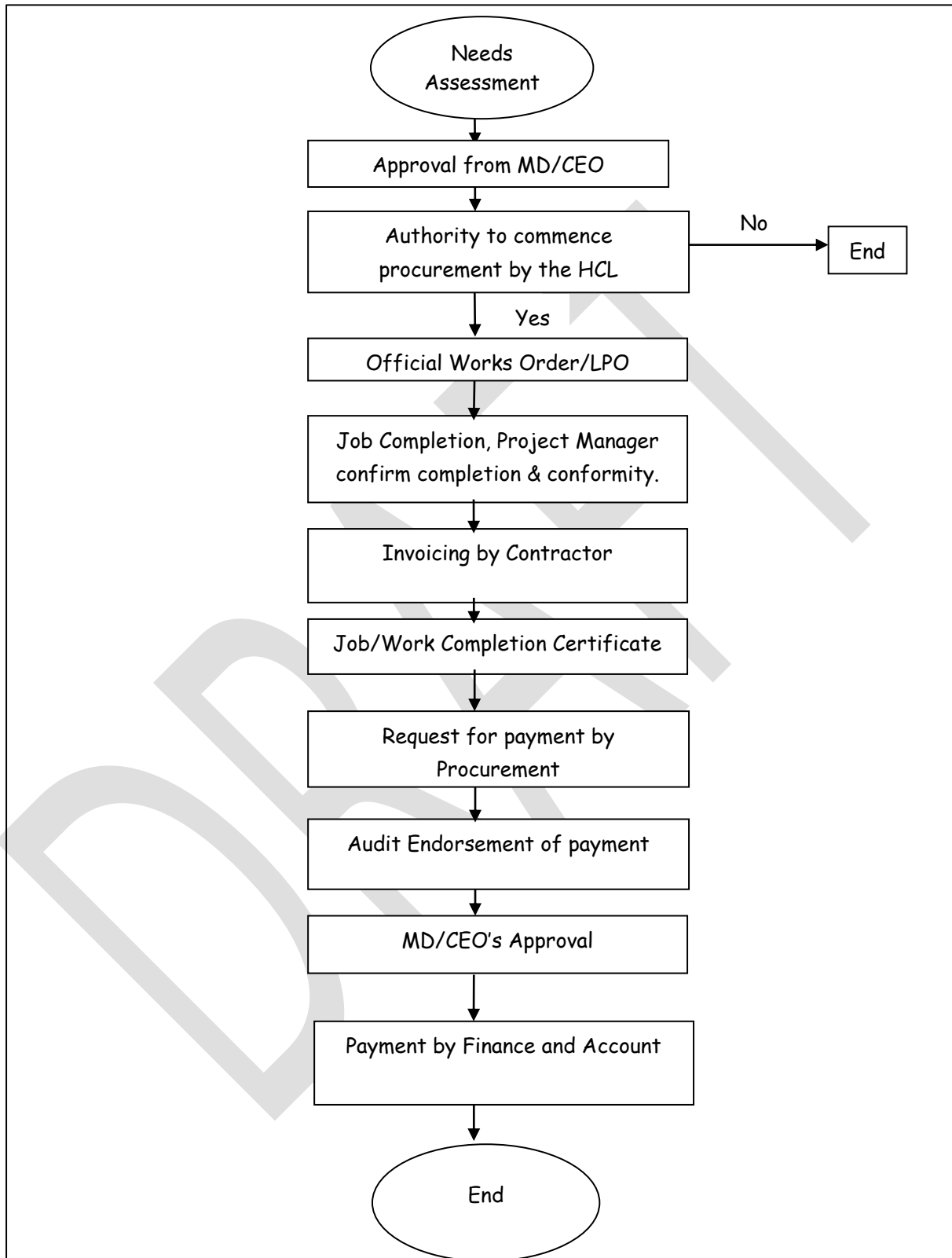


Figure 10: IBEDC's Procurement Process - Services

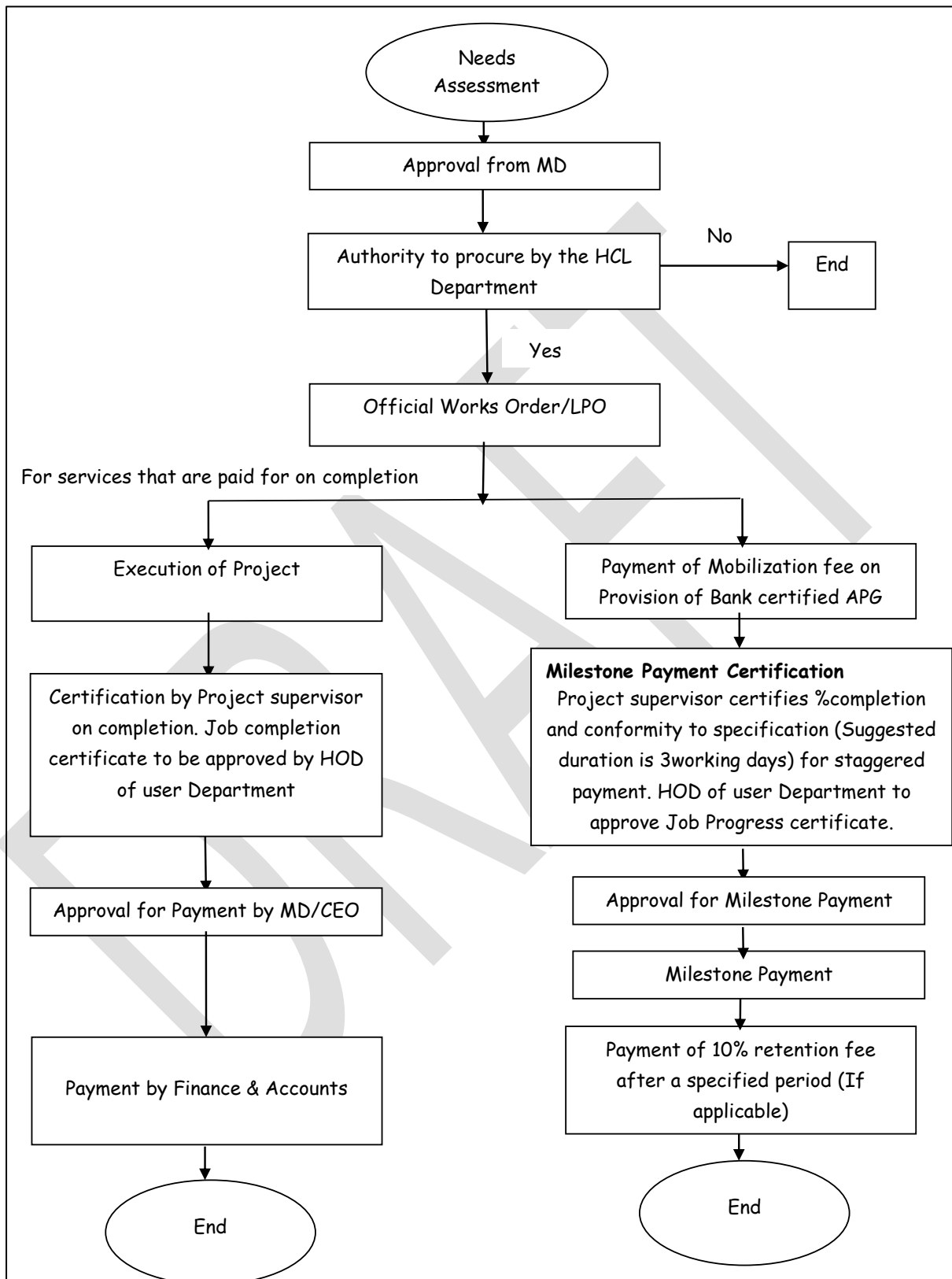


Figure 11: IBEDC's Procurement Process – Direct Payment Procurement

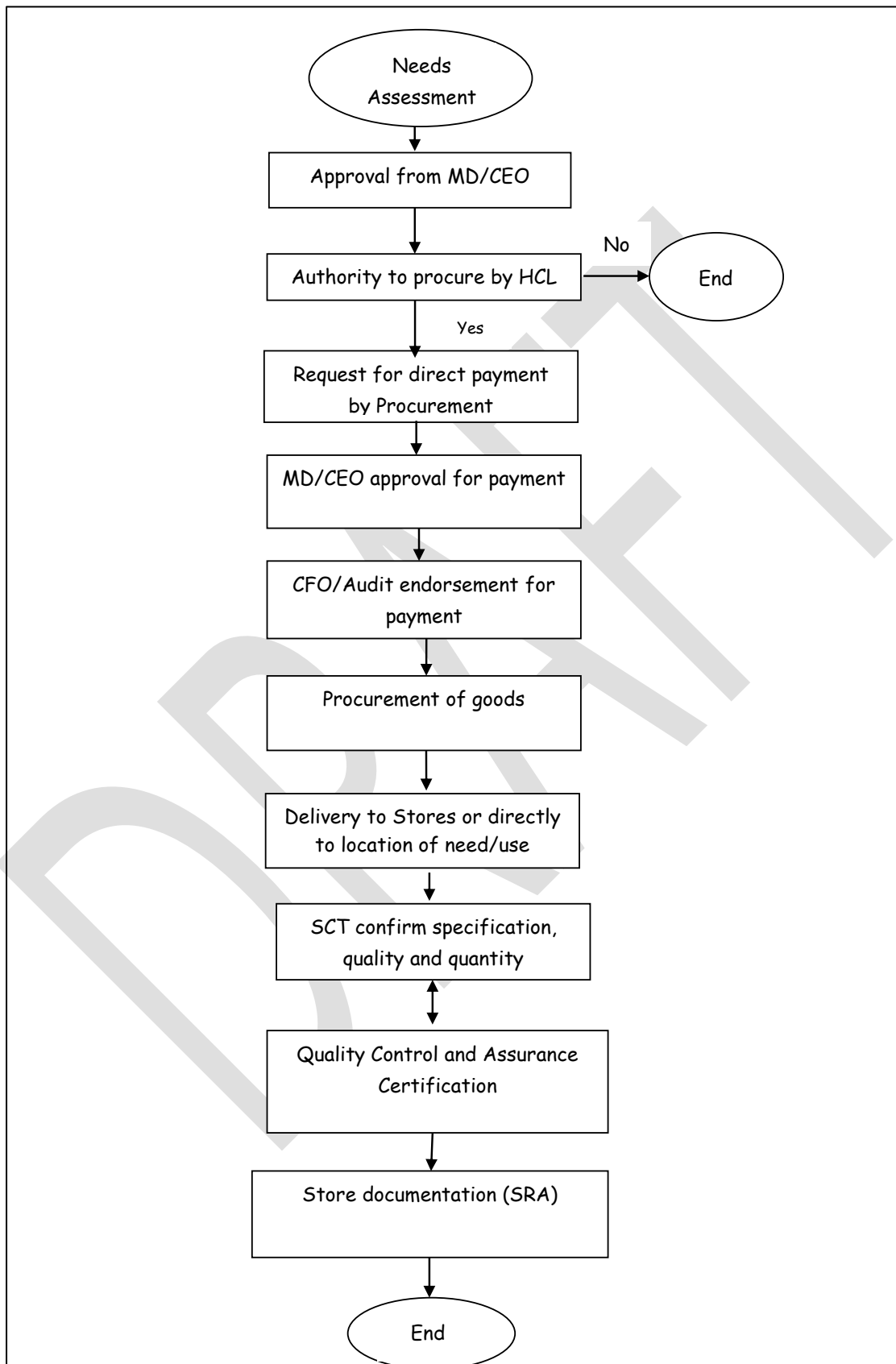


Figure 12: IBEDC's Procurement Process – Procurement Through Cash Advance

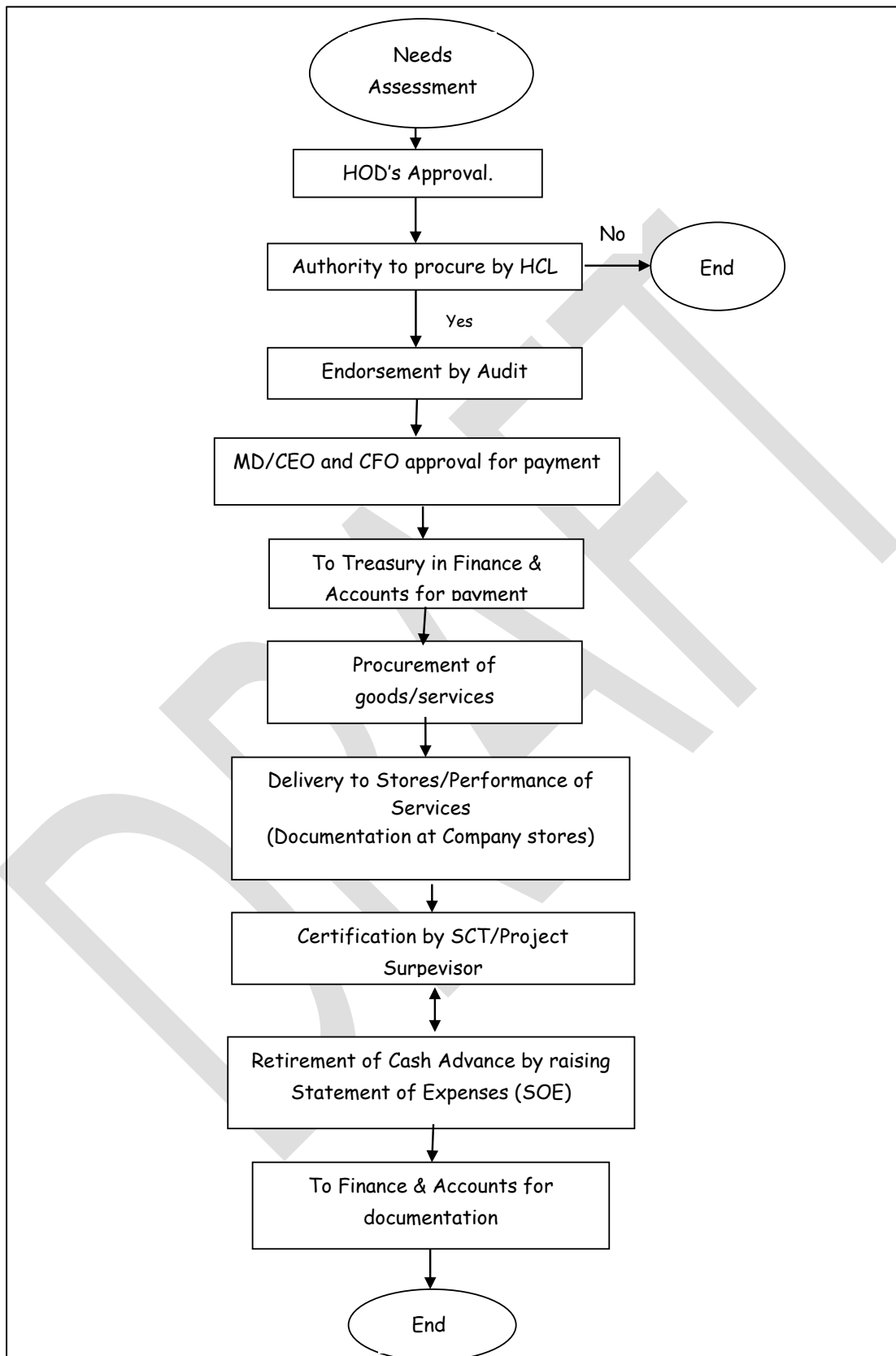


Figure 13: IBEDC's Typical Invoice Flow – Goods

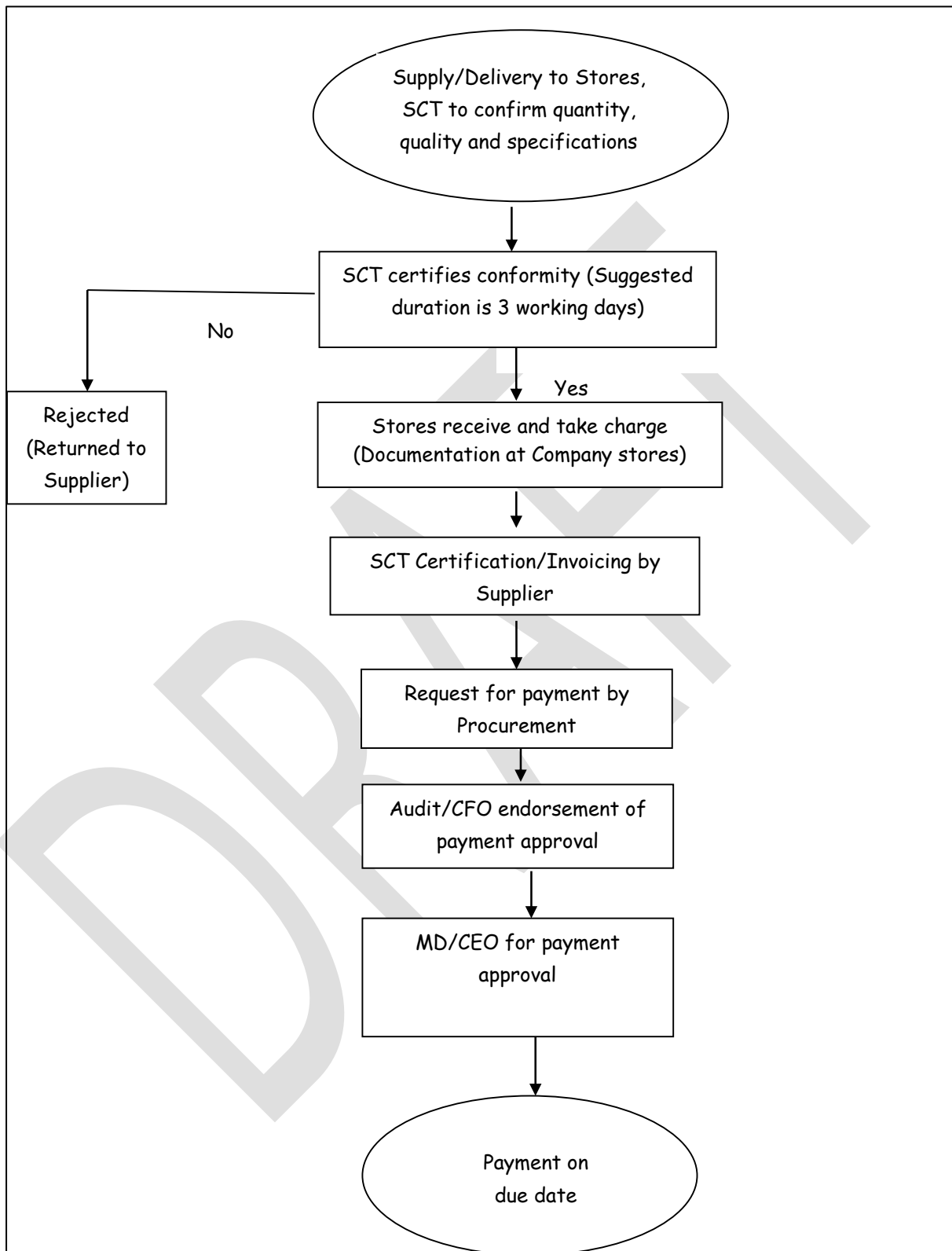
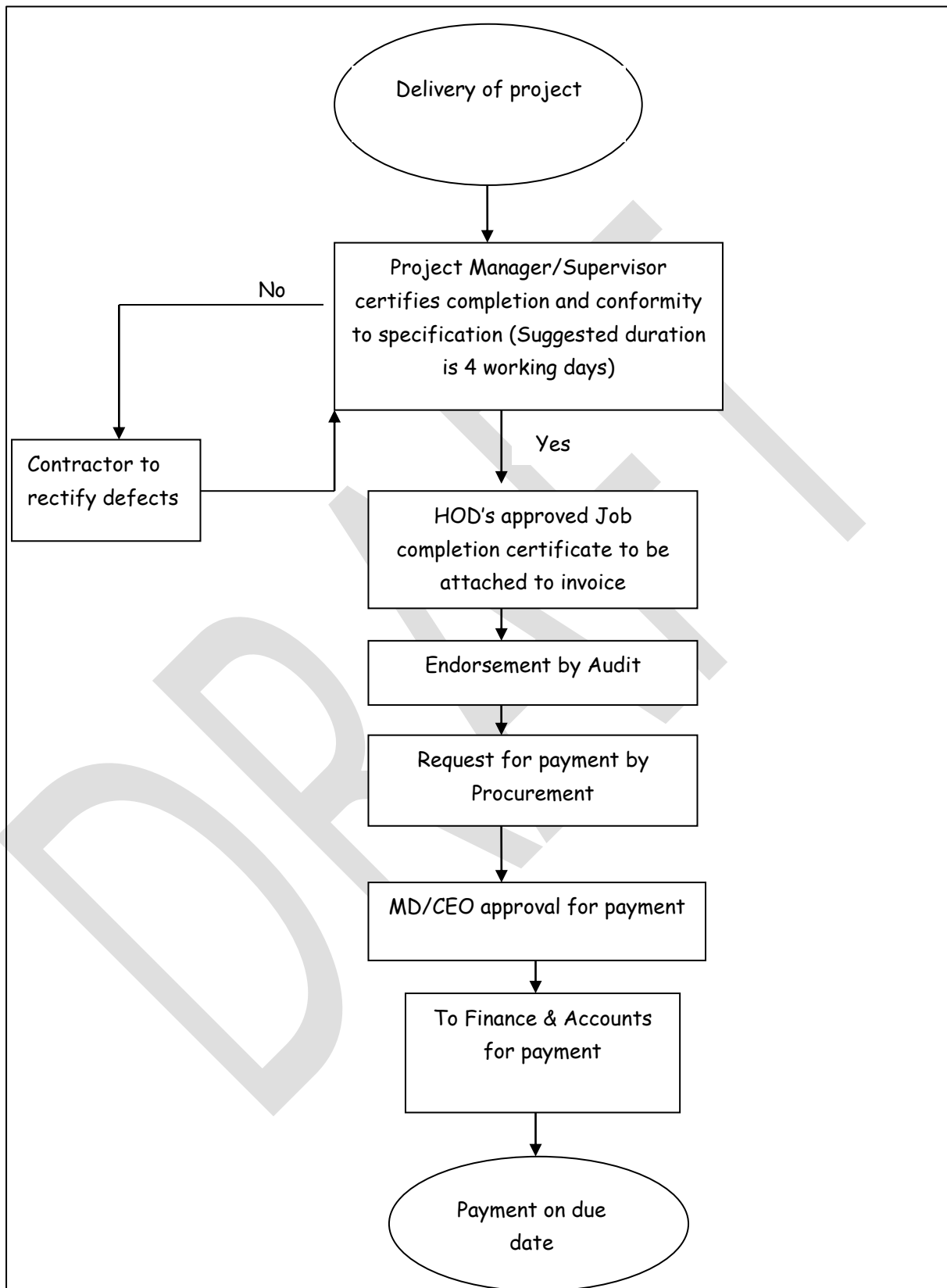


Figure 14: IBEDC's Typical Invoice Flow – Services & Works



Annex C Timeline

Table 44: Nigerian Electricity Supply Industry Timeline of Transaction and Regulatory Events

Year	Month	Market			MYTO Model in Use					
		Interim Rules - initial period	Interim Rules - Amended	TEM declared but CPs not satisfied	MYTO II Order and Model	MYTO 2.1 Model	MYTO 2.1 Model for TEM (not released)	MYTO 2.1 Model for TEM - 2016 year	MYTO 10 Year Tariff Plan Model	
2012	J									01/06/2012 - start of MYTO II.
	J									31/7/2012 - Privatisation bids submitted.
	A									
	S									
	O									Privatisation bids opened.
2013	N									6 Month MYTO Minor Review - no evidence it took place.
	D									
	J									Privatisation bidder negotiations commenced.
	F									17/02/2013 - signature of Industry documents and payment of 25% of price.
	M									
	A									
	M									
	J									6-month MYTO Review - took place but looked backwards so no tariff change despite huge generation shortfall.
	J									Signature of Transaction documents & payment of 75% of price.
2014	A									
	S									
	O									1/11/2013 - Handover.
	N									6-month MYTO Review - no evidence it took place.
	D									04/12/2013 Interim Rules signed.
2014	J									
	F									NERC Letter (17/2/2014) restating Capacity and Energy tariffs and setting Capacity in MWh units.
	M									
2014	A									
	M									14/05/14 - Revised Interim Rules signed/ 01/05/2014 Fixed Charges Order restricting fixed charges if no power.

Year	Month	Market			MYTO Model in Use					
		Interim Rules - initial period	Interim Rules - Amended	TEM declared but CPs not satisfied	MYTO II Order and Model	MYTO 2.1 Model	MYTO 2.1 Model for TEM (not released)	MYTO 2.1 Model for TEM - 2016 year	MYTO 10 Year Tariff Plan Model	
	J									6-month MYTO Minor Review - wholesale generation prices reduced (and basis changed, consumer tariffs increased for generation).
	J									
	A									
	S									
	O									
2015	N									CBN in collaboration with the Ministry of Petroleum Resources, Ministry of Power and NERC, signed a MoU for CBN-NEMSF.
	D									6-month MYTO Minor Review - incorporated into the Major Review in Jan 2015.
	J									MYTO Major Tariff Review, known as MYTO 2.1. It was assumed in the model that Discos started the Loss Reduction path on 1 January 2013 and were in the third year of their loss reduction path on 1st January 2015.
	F									01/02/2015 Commencement of TEM (Order dated 29/1/2015 and Supplementary Order dated 18th March 2015). CBN-NEMSF disbursement commences.
	M									01/04/2015 Amended MYTO Tariff Order removing Collection Losses from ATC&C (dated 24/3/2015) - MO/NBET to use PPA prices from MYTO model.
2015	A									MYTO Minor Review - did not take place.
	M									Interim Order abolishing Balancing Mechanism (dated 30/07/2015).
	J									
	J									
	A									
2016	S									
	O									
2016	N									NERC Commissioners 5-year tenure ends and Acting Chairman Appointed.
	D									
2016	J									Start of 2016 year in MYTO 2.1 Model, new gas prices and indexation.
	F									Tariff Order and commencement of 10-year Tariff Plan and Model. Model assumed that the first year

Year	Month	Market			MYTO Model in Use					
		Interim Rules - initial period	Interim Rules - Amended	TEM declared but CPs not satisfied	MYTO II Order and Model	MYTO 2.1 Model	MYTO 2.1 Model for TEM (not released)	MYTO 2.1 Model for TEM - 2016 year	MYTO 10 Year Tariff Plan Model	
	M									of loss reduction was 2015, but reduced allowed losses by removing Ministries, Departments and Agencies (MDA) debts.
	A									Dramatic drop in generation as a result of gas pipeline attacks, the drop in delivered power means tariffs no longer cover costs.
	M									Naira weakens and PPA FX indexing means cost of generation jumps from 12 N/kWh to 18 N/kWh with no corresponding increase in end-user tariffs, thus exacerbating the liquidity crisis in the sector.
	J									Minor Review undertaken but results not implemented.
	J									Barrister Toluwani judgement issued against NERC.
	A									Discos begin to lose trust of the sector due to declining performance in % remittances to the market.
	S									CBN constitutes two committees to look at means to address the liquidity problems - proposals for an "NBET Bond" to solve the liquidity crisis are tabled.
	O									Senate instructs that the proposal for the NBET Bond be put on hold until a comprehensive fix developed.
	N									Government turns to World Bank for support in solving the sector liquidity crisis - WB visit Abuja for discussions.
	D									MYTO Minor Review - the 7th since Handover - NERC requests Discos proposals for tariffs but results not implemented. FGN reportedly not wanting tariff increase before 2019 elections.
2017	J									2017 MYTO 10 Year tariffs are implemented by Discos but it is not enough to offset the continued rise in the cost of grid generation - now over 20 N/kWh. CBN Issues a new Foreign Exchange Policy in attempt to close gap between the official rate and parallel market. FGN approves ₦701bn Power Assurance Guarantee for NBET.
	F									Power Sector Recovery Program – jointly developed by FGN and World Bank. Plan has approved in principle by the FEC but gaps remain.

Year	Month	Market			MYTO Model in Use				
		Interim Rules - initial period	Interim Rules - Amended	TEM declared but CPs not satisfied	MYTO II Order and Model	MYTO 2.1 Model	MYTO 2.1 Model for TEM (not released)	MYTO 2.1 Model for TEM - 2016 year	
	A								<p>Under section 27 of EPSRA the Minister of Power declares 4 categories of Eligible Customers who will be able to purchase power directly from Successor Gencos and IPPs.</p> <p>NERC release a Consultation Paper for the Review of MYTO Methodology asking if reviews should become more regular and whether a RDM should be introduced for TCN. MYTO Minor Review - did not take place.</p> <p>NERC enact the Regulation setting out permit and tariff approval procedures for Mini-Grid Operators.</p> <p>NERC releases a consultation on Eligible Customers.</p> <p>NERC publishes the Eligible Customer Regulations 2017 and 7 Discos declare Force Majeure on grounds of lack of cost reflective tariffs and presence of cross subsidy and in some instances, change of law.</p> <p>Further details of the ₦701bn PAG facility emerge. Will make up some of the shortfall from Discos remittances to Gencos such that Gencos receive 80% of amounts invoiced.</p> <p>MYTO Minor Review - undertaken but results delayed.</p>
	M								
	J								
	J								
	A								
	S								
	O								
2018	N								
	D								
	J							NERC orders tariffs to be frozen at 2017 levels - 2018 change not implemented. Publishes Draft Meter Asset Providers (MAP) Regulations 2017 in attempt to close metering gap.	
	F							Assisted by World Bank. NERC prepares and circulates guidelines for Performance Improvement Plan an apparent requirement of the "reset" of the NESI.	
	M							MYTO Minor Review - NERC presents outcomes of December 2017 Minor Review to Industry but results not implemented.	
	A							A Bill to Amend the EPSR Act of 2005 to proscribe and criminalise Estimated Billing proceeds to its 2nd reading in the National Assembly.	
	M							Permanent NERC Chairman - James Adeche Momoh - finally appointed, 29 months after previous.	

Year	Month	Market			MYTO Model in Use					
		Interim Rules - initial period	Interim Rules - Amended	TEM declared but CPs not satisfied	MYTO II Order and Model	MYTO 2.1 Model	MYTO 2.1 Model for TEM (not released)	MYTO 2.1 Model for TEM - 2016 year	MYTO 10 Year Tariff Plan Model	
2019	J									MYTO Minor Review - did not take place.
	J									
	A									
	S									
	O									BPE issued a press statement in October 2018, which clarified that the target date in the Performance Agreements signed with Discos is 31 December 2019.
	N									
	D									MYTO Minor Review - did not take place.
	J									
	F									
	M									NERC issues amended Performance Improvement Plan Guidelines.
J									MYTO Minor review undertaken but results not implemented in tariffs. Only 2017 and 2018 treated as FM years.	
J										
A									June minor review tariff orders and minimum remittance percentages published. Tariffs not scheduled to change until January 2020, by which point NERC expects an extraordinary tariff review to have been completed.	

Annex D Outstanding issues in tariff shortfall calculation

Prepared in response to NERC letter dated 2 August 2019.

Table 45: Outstanding issues in shortfall calculation

No.	IBEDC's comments on MYTO 2019 in letter to NERC dated [date]	NERC response dated 2 August 2019	IBEDC's clarifications in response to NERC letter
1	Shortfall calculation assumed 2015, 2016 and 2019 were loss reduction years, whereas, we believe these years should be treated as years of mutual non-performance for the reasons discussed in section 0.	2014 was made whole by NEMSF.	See discussion of legacy issues for the interim rules period below.
		2015 first year of baseline losses being applied.	Collection losses were stripped from tariffs in April 2015, just 2 months after tariffs were implemented. Therefore, baseline losses were not applied in tariffs in 2015. IBEDC declared force majeure to BPE in 2015
		Deferred revenue allowed for in 2015-2016.	Underpayment of allowed revenue was provided for in the 2015 MYTO Order (MYTO 2.1) for 2015 and 2016, which would be recovered with return on investment from overpayments in 2017 and 2018. However, the actual under provision against allowed revenue for these years was 20% in 2015 and 41% in 2016 according to NERC's own June 2019 minor review ⁴ . This is beyond the ability of IBEDC to manage deferred revenue between years. The deferred revenue has still not been recovered. The provision for return on investment on the shortfall has been removed from the MYTO shortfall calculation.
		Expectation that Discos would borrow to settle upstream market invoices.	The failure of NERC to implement minor reviews, and successive tariff reversal in April 2015 has meant that banks are now unwilling to lend to Discos until there is greater security over forward revenue streams. Most Discos are now effectively insolvent. The ability to borrow will depend on regulatory stability and cost reflective

⁴ Our figures are higher, as we consider 2015 and 2016 non-performance years.

No.	IBEDC's comments on MYTO 2019 in letter to NERC dated [date]	NERC response dated 2 August 2019	IBEDC's clarifications in response to NERC letter
			tariffs for a number of years to build the confidence of the financial sector.
2	MDA debt repayment has still not been resolved, which was a condition for MDA loss removal in the MYTO 2015 model.	NERC view is that the responsibility for revenue collection from MDAs rests with Discos.	MDA debts were stripped from Disco ATC&C losses from February 2016 on the expectation that FGN would be responsible for payment. If this decision no longer holds, then the initial baseline losses should be in line with the 2014 Baseline Loss Study, with no deduction for MDAs.
3	Legacy issues affecting the interim rules period shortfall should be resolved.	Will be resolved in extraordinary tariff review in the next couple of months.	<p>NERC developed a MYTO Shortfall model to calculate the shortfall in the allowable revenue requirement experienced by the industry during the Interim Rules Period. The results fed into the Central Bank of Nigeria Capital Model for the Nigerian Electricity Market Stabilisation Facility (NEMSF) of ₦214bn (full amount, including transaction costs).</p> <p>There were issues with the shortfall computation at the time which meant that IBEDC was unable to meet all liabilities.</p> <p>We propose that the difference should be reconciled with NERC and subsequently netted off the payment due to the market by IBEDC.</p>
4	CAPEX actually spent in non-compliance years should be included in the model.	NERC is not averse to allowing the CAPEX allowance on the provision that loss reduction will apply in that period.	The limited CAPEX expenditure has been on emergency repairs rather than ATC&C loss reduction. IBEDC requests that NERC reviews the CAPEX actually spent in the relevant years to determine that it is appropriate expenditure.
5	Customer enumeration and energy consumed by customer tariff class should be updated in the model.	<p>Will be resolved in extraordinary tariff review in the next couple of months.</p> <p>Discos are required to submit customer enumeration data and load demand</p>	<p>Enumeration is about 78% and Asset 98% completed respectively and is projected to round up by November 2019.</p> <p>Mop up ongoing in troubled areas like Jebba, Ilesha and some other flashpoints where customer agitations have greatly hampered the exercise</p>

No.	IBEDC's comments on MYTO 2019 in letter to NERC dated [date]	NERC response dated 2 August 2019	IBEDC's clarifications in response to NERC letter
		study in line with approved methodologies.	

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Annex E Demand forecast

Table 46: Summary Projected Peak Demand for IBEDC 2020 - 2024

	BASE YR Demand (peak MW)	2020 Demand (peak MW)	2021 Demand (peak MW)	2022 Demand (peak MW)	2023 Demand (peak MW)	2024 Demand (peak MW)
TCN STATION	1,438.4	1,527.0	1,623.7	1,719.3	1,825.6	1,942.2
AGBARA	22.5	24.2	9.2	9.9	10.6	11.4
AYEDE	138.1	148.0	25.3	27.1	29.1	31.1
DOGONGERI	13.3	13.9	29.0	31.1	33.3	35.7
GANMO	110.9	115.6	11.4	12.2	13.1	14.1
IBADAN NORTH	115.9	124.1	13.5	14.5	15.6	16.7
IJEBU ODE	68.4	74.7	23.7	25.5	27.4	29.5
ILE IFE	67.0	70.4	0.1	0.1	0.1	0.1
ILESA	46.2	49.1	17.9	19.2	20.5	22.0
ILORIN TCN	92.9	99.1	4.8	4.8	4.8	4.8
ISEYIN	57.3	61.4	4.0	4.0	4.0	4.0
IWO	35.0	36.1	0.1	0.1	0.1	0.1
JEBBA	19.4	20.3	9.0	9.0	9.0	9.0
JERICHO	59.6	63.3	12.8	13.4	14.0	14.6
MCPHERSON	2.4	2.4	14.0	14.0	14.0	14.0
OFFA	30.4	32.5	19.6	21.0	22.6	24.3
OJERE	146.4	156.3	3.5	3.7	4.0	4.3
OKE ARO	40.6	43.0	10.7	11.4	12.2	13.0
OMU ARAN	25.3	26.8	24.3	25.9	27.7	29.6
OSOGBO	106.1	111.1	20.2	21.7	23.2	24.9
OTA	86.9	92.0	9.6	10.4	11.2	12.1
PAPALANTO	65.6	69.2	20.1	21.0	22.0	23.1
SAGAMU	88.3	93.5	2.4	2.4	2.4	2.4

Annex F Financial Analysis Assumptions

F. 1 Energy and capacity costs

The capacity and energy charges for the period 2020-2024 are based on the June 2019 MYTO Minor Review Model in nominal terms.

F. 2 Input data

The expected energy and capacity levels to be borne by Discos are shown in 2019 real terms in Table 47.

Table 47: Expected generation costs for the industry and IBEDC in nominal terms

	Current ⁵	2020	2021	2022	2023	2024
National energy delivered to Discos (MWh/month)	3,180,313	4,516,503	4,516,503	4,516,503	4,516,503	4,516,503
Overall charge for delivered energy (N/kWh delivered)	22.43	27.45	27.54	27.71	27.88	28.07
Average energy tariff (N/kWh delivered)	11.05	10.41	10.48	10.56	10.65	10.73
Average capacity tariff (N/kWh available)	8.50	8.98	8.99	9.04	9.08	9.14

F. 3 Inflation in cost base

In all scenarios, we have applied inflation to operational costs consistent with NERC's June 2019 Minor Review.

The regulatory asset base and CAPEX are inflated in the MYTO model by foreign exchange only. Since the June 2019 Minor Review assumed no change in foreign exchange, this means that the regulatory asset base only increases by CAPEX minus depreciation.

⁵ NBET invoices for Jan 2019 – June 2019

Note that this is an issue with the MYTO model, as US inflation should also be applied to the regulatory asset base to keep the investor whole in real terms.

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Annex G Legacy Issues – Interim Rules Period Shortfall

IBEDC's to provide if any.

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Annex H IBEDC Ongoing Projects

Table 48: IBEDC's Ongoing Projects

S/N	PROJECT TITLE	Type	AMOUNT ON AWARD (VAT INCLUSIVE)
			6,748,568,857.58
1	AWARD OF CONTRACT FOR THE SUPPLY OF 4,000 DISTRIBUTION TRANSFORMER (DT) METERS (THE "EQUIPMENT")	Commercial	1,596,000,000.00
2	AWARD OF CONTRACT FOR THE SUPPLY OF 2,000 DISTRIBUTION TRANSFORMER (DT) METERS (THE "EQUIPMENT")	Commercial	798,000,000.00
3	AWARD OF CONTRACT FOR THE SUPPLY OF 2,500 DISTRIBUTION TRANSFORMER (DT) METERS, (THE "EQUIPMENT")	Commercial	997,500,000.00
4	AWARD OF CONTRACT FOR THE SUPPLY OF 1,500 DISTRIBUTION TRANSFORMER (DT) METERS (THE "EQUIPMENT")	Commercial	598,500,000.00
5	AWARD OF CONTRACT FOR THE SUPPLY OF 50NO. EDM1 METER COMMUNICATION CABLES FOR ADVANCE METERING INFRASTRUCTURE (AMI) PROJECT ("THE EQUIPMENT") OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	2,887,500.00
6	AWARD OF CONTRACT FOR THE SUPPLY OF 50NO. MOJEC OPTICAL CABLE FOR DL5M/COSEM SMART METER AND 50NO. MOJEC GPRS CONFIGURATION MODULE FOR ADVANCE METERING INFRASTRUCTURE (AMI) PROJECT ("THE EQUIPMENT") OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	2,304,750.00

S/N	PROJECT TITLE	Type	AMOUNT ON AWARD (VAT INCLUSIVE)
7	AWARD OF CONTRACT FOR VEGETATION MANAGEMENT FOR ROM AND LIBERTY 33KV FEEDERS UNDER IBADAN REGION ("THE WORK") OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	Technical	7,792,575.00
8	AWARD OF CONTRACT FOR VEGETATION MANAGEMENT FOR IJEBU-JESA 33KV FEEDER UNDER OSUN REGION ("THE WORK") OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	Technical	16,684,500.00
9	AWARD OF CONTRACT FOR VEGETATION MANAGEMENT FOR KISHI-IGBETI 33KV FEEDER UNDER KWARA REGION ("THE WORK") OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	Technical	8,452,500.00
10	AWARD OF CONTRACT FOR THE SUPPLY OF 2No. 30KVA ONLINE UPS FOR THE DATA CENTER, ("THE EQUIPMENT") OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	IT Projects	14,532,330.33
11	AWARD OF CONTRACT FOR THE SUPPLY OF 62No. DRUMS OF TRANSFORMER OIL ("THE PRODUCT") TO IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	Technical	8,493,000.00
12	AWARD OF CONTRACT FOR THE SUPPLY AND INSTALLATION OF 100No. SINGLE-PHASE SPLIT TYPE PREPAYMENT METER (PPM) ("THE EQUIPMENT") TO IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Commercial	3,699,995.25
13	AWARD OF CONTRACT FOR THE SUPPLY OF 10NO. OVERCURRENT RELAYS AND 5NO. DIFFERENTIAL RELAYS ("THE EQUIPMENT") TO IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	Technical	17,640,000.00
14	AWARD OF CONTRACT FOR THE SUPPLY OF KVM DRAWER AND CISCO CATALYST 9200 SWITCH (THE "EQUIPMENT"), TO IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC (IBEDC)	IT Projects	7,375,200.00

S/N	PROJECT TITLE	Type	AMOUNT ON AWARD (VAT INCLUSIVE)
15	AWARD OF CONTRACT FOR THE SUPPLY OF 2NO METER TEST BENCHES (THE "EQUIPMENT"), TO IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC (IBEDC)	Commercial	9,044,700.00
16	AWARD OF CONTRACT FOR THE EMERGENCY SUPPLY OF 1NO. TRANSFORMER CONTROL/RELAY PANEL FOR 15MVA, 33/11KV POWER TRANSFORMER AT EGBE 1X15MVA, 33/11KV INJECTION SUBSTATION, EGBE UNDER KWARA REGION ("THE EQUIPMENT") OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	3,150,000.00
17	AWARD OF CONTRACT FOR THE STANDARDIZATION/REHABILITATION OF APATA 2 X 15MVA, 33/11KV TRANSFORMER INJECTION SUBSTATION, (THE "WORK") UNDER IBADAN REGION OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	19,142,655.00
18	AWARD OF CONTRACT FOR THE STANDARDIZATION/REHABILITATION OF GBONGAN 1 X 15MVA, 33/11KV TRANSFORMER INJECTION SUBSTATION, (THE "WORK") UNDER OSUN REGION OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	17,347,050.00
19	AWARD OF CONTRACT FOR THE STANDARDIZATION/REHABILITATION OF IJEBU-JESA 1 X 7.5MVA, 33/11KV TRANSFORMER INJECTION SUBSTATION, (THE "WORK") UNDER OSUN REGION OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	16,860,900.00
20	AWARD OF CONTRACT FOR THE STANDARDIZATION/REHABILITATION OF ILE-IFE 2 X 15MVA, 33/11KV TRANSFORMER INJECTION SUBSTATION, (THE "WORK") UNDER OSUN REGION OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	19,720,050.00

S/N	PROJECT TITLE	Type	AMOUNT ON AWARD (VAT INCLUSIVE)
21	AWARD OF CONTRACT FOR THE STANDARDIZATION/REHABILITATION OF INTERCHANGE 2 X 15MVA, 33/11KV TRANSFORMER INJECTION SUBSTATION, (THE "WORK") UNDER IBADAN REGION OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	19,958,400.00
22	AWARD OF CONTRACT FOR THE STANDARDIZATION/REHABILITATION OF OGBOMOSO 1 X 7.5MVA, 33/11KV AND 1 X 15MVA, 33/11KV TRANSFORMER INJECTION SUBSTATION, (THE "WORK") UNDER KWARA REGION OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	19,340,475.00
23	AWARD OF CONTRACT FOR THE STANDARDIZATION/REHABILITATION OF OLUYOLE 2 X 15MVA, 33/11KV TRANSFORMER INJECTION SUBSTATION, (THE "WORK") UNDER IBADAN REGION OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	19,855,500.00
24	AWARD OF CONTRACT FOR THE STANDARDIZATION/REHABILITATION OF SAKUTU 1 X 15MVA, 33/11KV TRANSFORMER INJECTION SUBSTATION, (THE "WORK") UNDER OYO REGION OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	18,220,000.00
25	AWARD OF CONTRACT FOR THE STANDARDIZATION/REHABILITATION OF OKE-OMIRU 1 X 7.5MVA, 33/11KV AND 1 X 15MVA, 33/11KV TRANSFORMER INJECTION SUBSTATION, (THE "WORK") UNDER OSUN REGION OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	19,349,793.75
26	AWARD OF CONTRACT FOR THE SUPPLY AND INSTALLATION OF 4,000 SIM CARDS AND APN SERVICE – BANDWIDTH DATA ON QUARTERLY BASIS FOR AMI PROJECT ("THE EQUIPMENT") OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	IT Projects	1,963,500.00

S/N	PROJECT TITLE	Type	AMOUNT ON AWARD (VAT INCLUSIVE)
27	AWARD OF CONTRACT FOR THE SUPPLY AND INSTALLATION OF 2,500 SIM CARDS AND APN SERVICE – BANDWIDTH DATA ON QUARTERLY BASIS FOR AMI PROJECT (“THE EQUIPMENT”) OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	IT Projects	1,627,500.00
28	AWARD OF CONTRACT FOR THE SUPPLY AND INSTALLATION OF 2,500 SIM CARDS AND APN SERVICE – BANDWIDTH DATA ON QUARTERLY BASIS FOR AMI PROJECT (“THE EQUIPMENT”) OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	IT Projects	1,293,583.20
29	AWARD OF CONTRACT FOR THE SUPPLY AND INSTALLATION OF KUTOOLS AD-IN FOR EXCEL, MICROSOFT VISIO PROFESSIONAL 2016 AND AUTOCAD LT 2018 (THE “WORK”) FOR PROJECT MANAGEMENT STAFF OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	IT Projects	1,683,150.00
30	AWARD OF CONTRACT FOR THE INSTALLATION OF 912LV MAXIMUM DEMAND (MD) PRE-PAID METERS (PPM), (THE “WORK”) FOR IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Commercial	19,915,020.34
31	AWARD OF CONTRACT FOR VEGETATION MANAGEMENT OF EFON ALAAYE 33KV FEEDER, ILESA BUSINESS HUB UNDER OSUN REGION (“THE WORK”) OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	Technical	13,626,900.00
32	AWARD OF CONTRACT FOR VEGETATION MANAGEMENT OF LAGOS ROAD 33KV FEEDER, OLUMO BUSINESS HUB UNDER OGUN REGION (“THE WORK”) OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	Technical	12,908,700.00
33	AWARD OF CONTRACT FOR VEGETATION MANAGEMENT OF BARRACKS 33KV FEEDER, IJEBU-ODE BUSINESS HUB UNDER OGUN REGION (“THE WORK”) OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	Technical	13,665,225.00
34	AWARD OF CONTRACT FOR VEGETATION MANAGEMENT OF LUSADA 33KV FEEDER, OTA BUSINESS HUB UNDER OGUN REGION (“THE WORK”) OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	Technical	3,603,075.00

S/N	PROJECT TITLE	Type	AMOUNT ON AWARD (VAT INCLUSIVE)
35	AWARD OF CONTRACT FOR VEGETATION MANAGEMENT OF OYO 33KV FEEDER, OYO BUSINESS HUB UNDER OYO REGION ("THE WORK") OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	Technical	6,629,700.00
36	AWARD OF CONTRACT FOR THE INSTALLATION OF 4,000 DISTRIBUTION TRANSFORMER (DT) METERS, (THE "WORK") FOR IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Commercial	126,000,000.00
37	AWARD OF CONTRACT FOR THE INSTALLATION OF 2,500 DISTRIBUTION TRANSFORMER (DT) METERS, (THE "WORK") FOR IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Commercial	78,750,000.00
38	AWARD OF CONTRACT FOR THE INSTALLATION OF 2,000 DISTRIBUTION TRANSFORMER (DT) METERS, (THE "WORK") FOR IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Commercial	63,000,000.00
39	AWARD OF CONTRACT FOR THE INSTALLATION OF 1,500 DISTRIBUTION TRANSFORMER (DT) METERS, (THE "WORK") FOR IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Commercial	47,250,000.00
40	AWARD OF CONTRACT FOR THE ACQUISITION AND DEPLOYMENT OF SAGE ERP SOLUTION (THE "WORK") OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	IT Projects	262,694,545.21
41	AWARD OF CONTRACT FOR THE SUPPLY OF 7 NOS. HP DESKTOP COMPUTER SYSTEMS AND 7NOS. 650VA APC-UPS (THE "EQUIPMENT") FOR INFORMATION TECHNOLOGY OFFICERS, PROJECT OFFICERS, COMMERCIAL OPERATION OFFICERS AND TECHNICAL OFFICERS OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	IT Projects	2,543,100.00

S/N	PROJECT TITLE	Type	AMOUNT ON AWARD (VAT INCLUSIVE)
42	AWARD OF CONTRACT FOR THE SUPPLY OF MD METER ACCESSORIES (MODEMS AND ANTENNAS) (THE "EQUIPMENT"), FOR THE DEPLOYMENT OF ADVANCED METERING INFRASTRUCTURE (AMI) SYSTEM WITHIN THE FRANCHISE OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Commercial	3,360,000.00
43	AWARD OF CONTRACT FOR THE SUPPLY OF 500 METERS OF 500MM ² X 1CORE PVC/PVC LV CABLE ("THE EQUIPMENT") TO IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	8,505,000.00
44	AWARD OF CONTRACT FOR THE SUPPLY OF 300 METERS OF 185MM ² X 4CORE PVC/SWA/PVC LV CABLE ("THE EQUIPMENT") TO IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	8,001,000.00
45	AWARD OF CONTRACT FOR THE CONSTRUCTION OF 33KV LINE TO XILEMA ITALIAN NIGERIA LIMITED AND REPLACEMENT OF THE BURNT 50KVA, 11/0.415KV TRANSFORMER WITH 200KVA, 33/0.415KVA TRANSFORMER, (THE "WORK") AT IKIRE UNDER OSUN REGION OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	12,095,895.00
46	AWARD OF CONTRACT FOR THE CONSTRUCTION OF AFE BABALOLA 300KVA, 11/0.415KV TRANSFORMER SUBSTATION, (THE "WORK") AT BODIJA UNDER IBADAN REGION OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	5,519,577.00
47	AWARD OF CONTRACT FOR THE SUPPLY AND INSTALLATION OF 11KV AND 33KV HT AMI DLMS/COSEM COMPLIANT PANEL METERS AND CURRENT TRANSFORMERS (29NO. 33KV & 1NO. 11KV POLE MOUNTED CT/VT METERS AND 4NO. OVERHEAD 33KV CT METERS) (THE "EQUIPMENT") FOR IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Commercial	127,790,625.00

S/N	PROJECT TITLE	Type	AMOUNT ON AWARD (VAT INCLUSIVE)
48	AWARD OF CONTRACT FOR THE SUPPLY OF 100NOs. STATISTICAL METERS WITH POWER ENHANCEMENT PANELS FOR DISTRIBUTION TRANSFORMERS ("THE EQUIPMENT") TO IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	Commercial	724,710,000.00
49	WORKS ORDER FOR THE VEGETATION MANAGEMENT OF APATA AND APETE 33KV FEEDERS UNDER IBADAN REGION ("THE WORKS") OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	Technical	8,455,650.00
50	WORKS ORDER FOR THE VEGETATION MANAGEMENT OF IYAGANKU 11KV & 33KV FEEDERS; AGODI LINE II 33KV AND ERUWA 33KV (ERUWA TO IGANGAN LEG) FEEDERS UNDER IBADAN REGION ("THE WORKS") OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	Technical	8,324,925.00
51	WORKS ORDER FOR THE VEGETATION MANAGEMENT OF IKIRE-WASINMI 33KV FEEDER UNDER OSUN REGION ("THE WORKS") OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	Technical	18,585,000.00
52	WORKS ORDER FOR THE EMERGENCY SUPPLY OF 2NO. 33KV OUTDOOR CIRCUIT BREAKERS TO T2B AND T1C 15MVA, 33/11KV AT SAWMILL, 132/33KV TCN ILORIN UNDER KWARA REGION ("THE EQUIPMENT") OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	Technical	8,085,000.00
53	WORKS ORDER FOR THE EMERGENCY SUPPLY OF 1NO. TRANSFORMER CONTROL/RELAY PANEL FOR 15MVA, 33/11KV POWER TRANSFORMER AT EGBE 1X15MVA, 33/11KV INJECTION SUBSTATION, EGBE UNDER KWARA REGION ("THE EQUIPMENT") OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	3,150,000.00
54	WORKS ORDER FOR THE REHABILITATION OF 15MVA, 33/11KV TRANSFORMER AT SAKUTU INJECTION SUBSTATION, (THE "WORK") UNDER OYO BUSINESS HUB, OYO REGION OF IBADAN REGION, IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC.	Technical	3,570,000.00

S/N	PROJECT TITLE	Type	AMOUNT ON AWARD (VAT INCLUSIVE)
55	WORKS ORDER FOR THE SUPPLY OF 12NOS. HP PROBOOK LAPTOP COMPUTER SYSTEMS UNIT ("THE EQUIPMENT") FOR SOME KEY OPERATIONAL STAFF OF THE LEGAL DEPARTMENT, HUMAN RESOURCES DEPARTMENT, BUSINESS HUB MANAGERS AND BRANDING & CORPORATE COMMUNICATION UNIT OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	IT Projects	3,956,400.00
56	WORK ORDER FOR THE SUPPLY OF 31NOS. HP PROBOOK LAPTOP COMPUTER SYSTEMS UNIT ("THE EQUIPMENT") FOR SOME KEY OPERATIONAL STAFF AND NEWLY HIRED PERSONNEL OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	IT Projects	10,220,700.00
57	WORK ORDER FOR THE SUPPLY OF 300 METERS OF 150MM ² X 4CORE PVC/SWA/PVC LV CABLE ("THE EQUIPMENT") TO IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	6,300,000.00
58	WORK ORDER FOR THE SUPPLY OF 300 METERS OF 120MM ² X 4CORE PVC/SWA/PVC LV CABLE ("THE EQUIPMENT") TO IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	5,292,000.00
59	WORK ORDER FOR THE SUPPLY OF 500 METERS OF 300MM ² X 1CORE PVC/PVC LV CABLE ("THE EQUIPMENT") TO IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	4,935,000.00
60	WORK ORDER FOR THE SUPPLY OF 1,000 METERS OF 70MM ² BARE COPPER CONDUCTOR ("THE EQUIPMENT") TO IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	2,572,500.00
61	WORK ORDER FOR THE SUPPLY OF 500NO. 33KV AND 500NO. 11KV POT INSULATORS, 20SETS OF 33KV AND 40SETS OF 11KV LIGHTNING ARRESTERS ("THE EQUIPMENT") TO IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Technical	3,837,750.00

S/N	PROJECT TITLE	Type	AMOUNT ON AWARD (VAT INCLUSIVE)
62	WORK ORDER FOR THE SUPPLY OF 1,000 DISTRIBUTION TRANSFORMER (DT) METERS, (THE "EQUIPMENT") TO IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	Commercial	399,000,000.00
63	WORK ORDER FOR THE SUPPLY OF 625 DISTRIBUTION TRANSFORMER (DT) METERS, (THE "EQUIPMENT") TO IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	Commercial	249,375,000.00
64	WORK ORDER FOR THE SUPPLY OF 375 DISTRIBUTION TRANSFORMER (DT) METERS, (THE "EQUIPMENT") TO IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	Commercial	149,625,000.00
65	WORK ORDER FOR THE SUPPLY OF 4NOS. HP 22 ALL-IN-ONE DESKTOP COMPUTER SYSTEMS AND 4NOS. 650VA APC-UPS (THE "EQUIPMENT") FOR THE CALL CENTRE OF IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC).	IT Projects	1,499,400.00
66	WORK ORDER FOR THE SUPPLY OF RECHARGE CARDS (THE "PRODUCT"), FOR THE MONTH OF JULY 2019 TO IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	IT Projects	3,063,112.00
67	WORKS ORDER FOR THE EMERGENCY PROCUREMENT OF 1NO. 110 VOLTS TRIPPING UNIT (110 VOLTS BATTERY CHARGER AND 9NO. 12 VOLTS 100AH DEEP CYCLE BATTERIES), (THE "EQUIPMENT") FOR OKE-OMIRU 1 X 15MVA & 1 X 7.5MVA, 33/11KV INJECTION SUBSTATION UNDER ILESA BUSINESS HUB, OSUN REGION OF IBADAN REGION, IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC.	Technical	2,495,000.00
68	WORKS ORDER FOR THE SUPPLY OF 250NOS. UNISTAR PREPAYMENT CUSTOMER VENDING CARDS AND 50NOS. SHENHZEN PREPAYMENT CUSTOMER VENDING CARDS, (THE "EQUIPMENT") TO IBADAN ELECTRICITY DISTRIBUTION COMPANY PLC. (IBEDC)	Commercial	1,417,500.00

S/N	PROJECT TITLE	Type	AMOUNT ON AWARD (VAT INCLUSIVE)
69	REHABILITATION OF OKE-OMIRU 1X15MVA & 1X7.5MVA, 33/11KV CONTROL ROOM, SWITCHYARD AND RE-CONSTRUCTION OF THE COLLAPSED PERIMETER FENCE (CIVIL WORK) UNDER OSUN REGION	Technical	27,035,872.50
70	REHABILITATION OF INTERCHANGE 2X15MVA, 33/11KV TRANSFORMER INJECTION SUBSTATION (CIVIL WORK) UNDER IBADAN REGION	Technical	18,785,078.00

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