YOLA ELECTRICITY DISTRIBUTION COMPANY PLC
2 Atiku Abubakar Road, Jimeta-Yola, Adamawa State, Nigeria
Email: info@yedc.com.ng
Website: www.yedc.com.ng

YEDC

Ref. No: MD/YEDC/Vol.1/012 /2020 **30th January, 2020**

The Chairman/CEO,
Nigerian Electricity Regulatory Commission,
Plot 1387 Cadastral Zone A00,
Central Business District,
Garki, Abuja

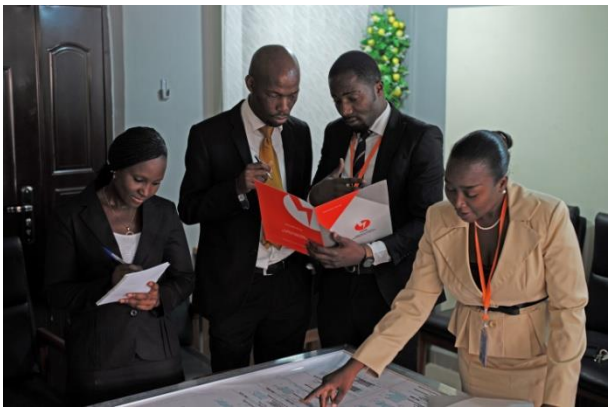
SUBMISSION OF PERFORMANCE IMPROVEMENT PLANS AND APPLICATIONS FOR EXTRAORDINARY TARIFF REVIEW OF MYTO-2015 FOR YOLA ELECTRICITY DISTRIBUTION COMPANY

The above subject matters refers.

2. Please find forwarded herewith Yola Electricity Distribution Company Performance Improvement Plans and Applications for Extra-ordinary tariff review of MYTO-2015 in compliance with the directives of the Commission.

3. Please, accept the assurances of our Company's best regards.

Engr. B.U. Mustapha
Ag. Managing Director/CEO



2020 – 2024

PERFORMANCE IMPROVEMENT PLAN

Yola Electricity Distribution Company Plc

2019

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I. EXECUTIVE SUMMARY

1. INSURGENCY

The security situation in the Yola franchise area has, to date, made achievement of the Business Plan impossible. The insurgency has made it impossible to issue bills and collect payments in the affected Business Units. Areas of the network have been damaged, and will require capex to recover even to the level of assets at Handover.

Completely disconnecting the affected units was not practical course of action. First, continuing power supplies to the affected regions were requested to allow the military bases to continue to function. Second, YEDC has an obligation to supply to our customers and reducing the supply of power will aggravate the challenges they have to face.

Once it became clear that the losses were set to continue indefinitely, IEDM declared Political Force Majeure under the Performance Agreement and exercised the Put Option. They also suggested a number of potential actions to mitigate the impact and allow the management of YEDC to continue. The long term solution has not yet been resolved.

In the meantime, the management team in YEDC has remained to maintain as much stability as is possible under the difficult circumstances.

1. SCENARIO ANALYSIS

Given the challenging conditions, this Performance Improvement Plan has attempted to set out the options under different scenarios for the future development in the YEDC region.

We therefore consider the financial position that YEDC will face under three scenarios:

- **Status quo** – with no change to the current insurgency,
- **Modest Improvement** – early gradual improvement in the security situation, and
- **Optimistic** – this scenario is the best case, with rapid return to normal life in the YEDC region and improvement in national power supply being delivered to YEDC.

The three scenarios also involve changes in other assumptions, including about tariff levels and the payment of the CBN facility, which are discussed in the main body of the report.

Sadly, at present Status Quo appears to be the most likely scenario. This scenario shows the inability of YEDC to meet its market and customer obligations. A significant change to the commercial environment would be required to avoid bankruptcy (for example, central subsidy, or a significant relaxation of payment obligations to other market participants).

Under the Status Quo and Modest Improvement scenarios, the business is completely unsustainable. Cash flows are negative, and there is no recourse for financing. Equity owners IEDM are in the process of managing their exit, and no bank financing or other equity will be available given the projected balance sheet.

2. INVESTMENT PLAN

Delivering the objectives set out in the original Business Plan will clearly not be possible in the context of a failing business. In the Status Quo scenario, no investment will be possible, and the only objective will be to prioritize the limited operational cash as appropriate. In the other scenarios, some limited investment may be possible.

A performance strategy has been developed covering to the following main areas:

- Loss Reduction Plan;
- Expansion of the network/Market;
- Quality of the service improvement;
- Operational Efficiency –including process reengineering;
- CSR –including HSE- Plan.

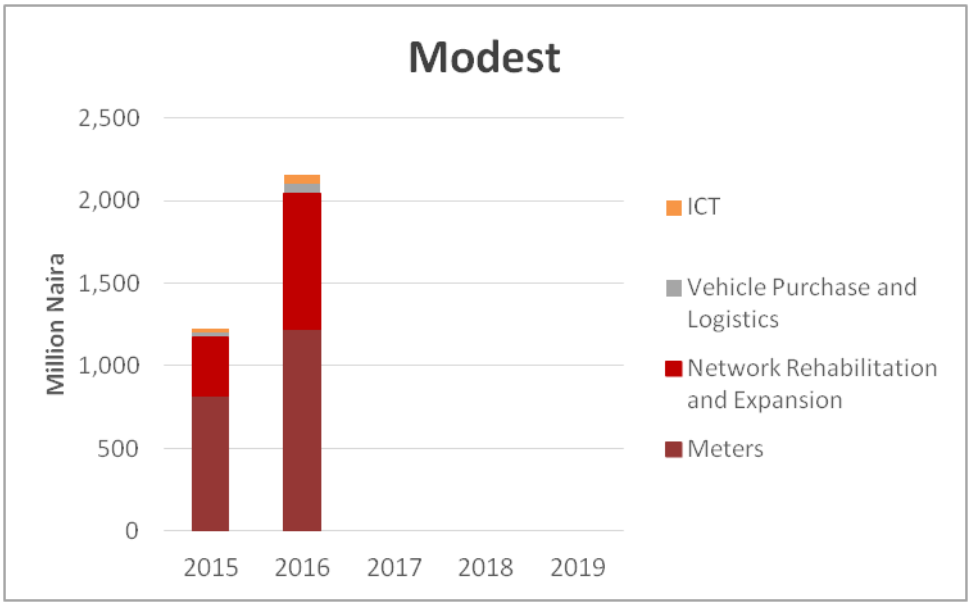
Anything close to the full implementation of the strategy will only be possible in the Optimistic scenario, being very limited in the Modest Improvement case. To adjust the Investment Plan to the Modest Improvement case, the management will prioritize the use of any cash available for investments in the following order:

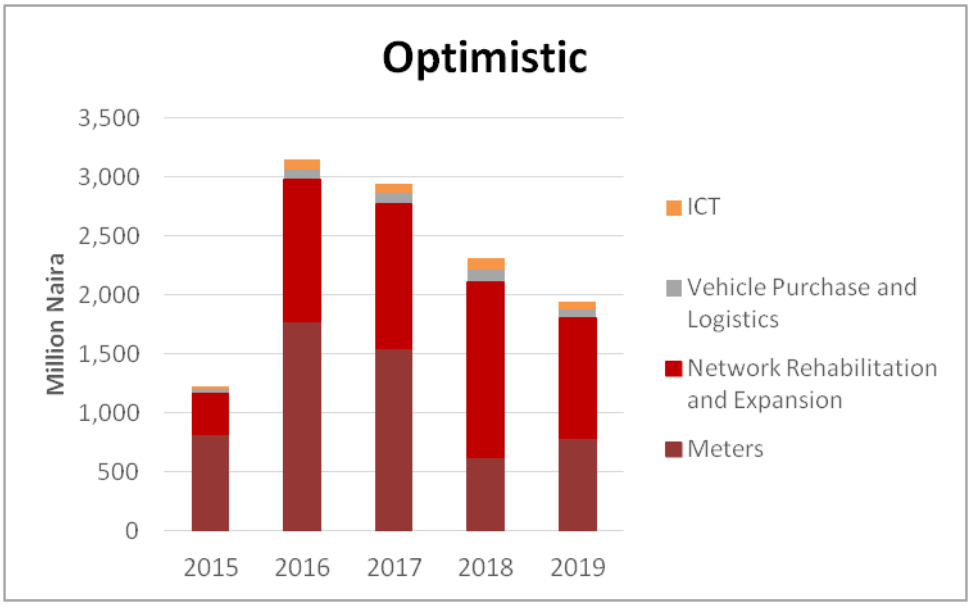
1. Network rehabilitation and maintenance
2. Meters
3. Network Expansion
4. Vehicles and logistics
5. Information and Communication Technology

The main principle here is to prioritize keeping the system running, and to reduce losses as much as possible. In spite of the priority order defined above, certain minimum level of investments will be necessary in all areas.

There are no investments in the Status Quo case because the company will have no cash, which of course leads to a progressive deterioration of the network and means the business is unsustainable in the future.

In the Modest Improvement scenario, investments in capital assets will only be possible in the first two years thanks to the extra short term cash provided by the CBN Facility, which will mostly be invested in rehabilitation of the network and in metering equipment. In the Optimistic case, a more balanced approach is achievable, leaving the business in a more stable position going forward.


Modest
2,500
2,000
1,500
1,000
500
0
Million Naira
2015
2016
2017
2018
2019
ICT
Vehicle Purchase and Logistics
Network Rehabilitation and Expansion
Meters


Optimistic
3,500
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2,500
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Million Naira
2015
2016
2017
2018
2019
ICT
Vehicle Purchase and Logistics
Network Rehabilitation and Expansion
Meters

II REVIEW OF THE PERIOD BETWEEN THE BID BUSINESS PLAN AND JANUARY 2015

Integrated Energy Distribution and Marketing Ltd (IEDM) was the successful bidder for Yola Electricity Distribution Company (YEDC) in the privatization of the PHCN Successor Companies. The Handover of YEDC to IEDM took place on 1st November 2013. As part of their bid, IEDM presented a Business Plan, setting out how it would meet the targets that then formed part of the Performance Agreement.

This Business Plan updates our original Plan based on the experience since Handover.

1. FORCE MAJEURE

Immediately following the Handover of YEDC, it was clear that the security situation made achievement of the Business Plan as set out in our bid impossible.

IEDM wrote to BPE on 12th November 2013 on the security situation in the northern areas of the YEDC franchise zone and the challenges these would present in meeting the requirements of the Performance Agreement entered into by BPE, YEDC and IEDM.

Figure 1: Security situation at Handover

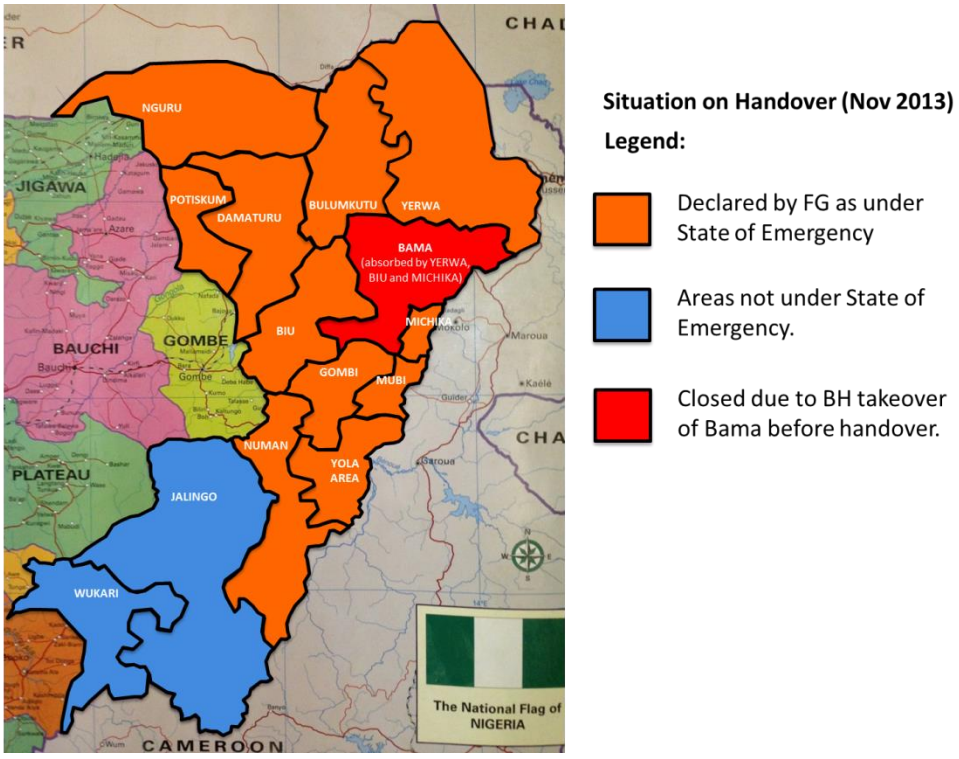
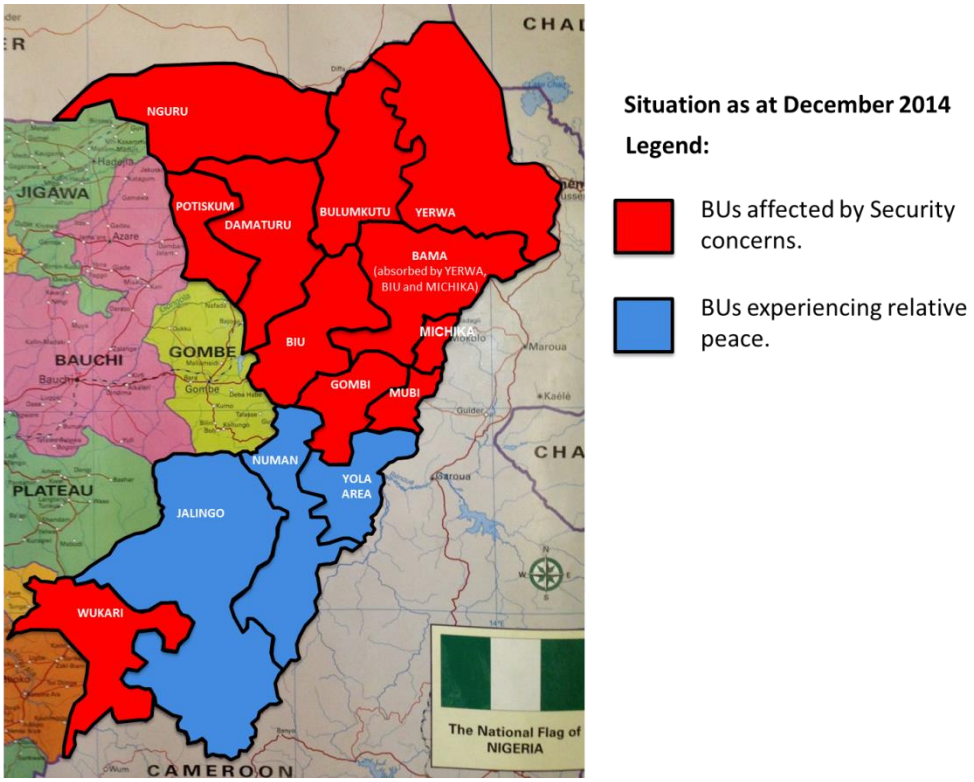


Figure 2: Security situation in December 2019



Since that letter, the insurgency has increased significantly making parts of the franchise area a 'no go' zone for YEDC staff.

The insurgency has made it impossible to issue bills and collect payments in the affected Business Units. As well as making it impossible to achieve ATC&C Loss reductions there has been a growing impact on the financial performance of the Company. Areas of the network have been damaged, and will require capex to recover even to the level of assets at Handover.

Completely disconnecting the affected units was not practical course of action. First, continuing power supplies to the affected regions were requested to allow the military bases to continue to function. Second, YEDC has an obligation to supply to our customers and reducing the supply of power will aggravate the challenges they have to face.

Once it became clear that the losses were set to continue indefinitely, IEDM declared Political Force Majeure under the Performance Agreement and exercised the Put Option. They also suggested a number of potential actions to mitigate the impact and allow the management of YEDC to continue. The long term solution has not yet been resolved.

In the meantime, the management team in YEDC has remained to maintain as much stability as is possible under the difficult circumstances.

2. TARIFF SHORTFALL AND INTERIM RULES

The Performance Agreement linked to the privatization of YEDC was drafted at a time when it was expected tariff assumptions would be 'trued-up' ahead of any handover.

When that did not happen, NERC introduced the Interim Rules setting out, inter alia, the tariff shortfall in the energy sector. This situation has heavily constrained the capability of YEDC to follow its Investment Plan and its Loss Reduction Plan.

Electricity tariffs have been recently updated by NERC (December 2019 Minor Review MYTO 2015), but they contain a series of inaccuracies that make them not cost reflective. Deficiencies include an incorrect initial level for ATC&C losses, incorrect customer numbers, amongst others.

Together, these issues mean that tariffs have not been, and still are not, cost reflective for YEDC. This has prevented the operational expenditure and investment that was planned in the original Business Plan being realized.

2.1. ATC&C Losses

Since Handover on 1st November 2013, the YEDC has been collecting less revenue than they need to meet their costs in full. As well as the issues caused by the security situation, one of the principal factors was that tariffs set at Handover were not reflective of the high level of losses present in the system.

AF-Mercados was appointed by YEDC in December 2013, as the independent consultant to undertake a baseline loss study. The results were as follows.

Baseline ATC&C loss level at Handover was 61.9%
Customer numbers at Handover were 177,893
The technical loss level in the current system is 13.7%

The study activities included collecting and analyzing customer databases of the Disco. The load flow analysis also required full technical details of lines and equipment.

The estimate of **verified customer numbers** at Handover was 177,893. This is the sum of billed post-paid customers (157,323) and actively vending prepayment meter customers (20,570). In total, YEDC customer numbers were found to be 38.5% below the level estimated in MYTO 2015. Customer numbers have effectively decreased still further since Handover, due to the security situation.

The estimate of the long term **Aggregate Technical, Commercial and Collection Losses** was 61.9% for the year prior to Handover. This estimate was based on data extracted from YEDC customer databases, in combination with main remittance account bank statements. The final figure was derived with due consideration of scenarios considering the possibility of systematic change, potential short term fluctuations (electricity availability and seasonal factors) and time lags in the data on account of the billing cycle.

The estimate of **Technical Losses** on the network was based on AC load flow modelling by YEDC's technical partner, MERALCO, which was 13.7%.

The overall level of losses anticipated prior to Handover, and on which the Bid Business Plan was based, were 40%. The difference between the two figures, and the fact that tariffs still do

not reflect the loss trajectory expected under the business plan, mean that it would have been impossible for YEDC to meet the OPEX and CAPEX expected under the original Business Plan – even without the insurgency issues.

It should be noted that in February 2015, NERC released MYTO 2015 with a rebased Baseline ATC&C Loss for Yola EDC of 57.6%, failing to fully recognized the losses of 61.9%.

2.2. LACK OF SUPPLY

The power received by YEDC has been considerably lower than anticipated and this has caused a noticeable energy shortfall in YEDC.

Also, the generation capacity post-privatization has not grown as planned. Capacity was expected to be at 9,000 MW in 2014 as per the original MYTO 2015 is now hovering around 4,000 MW.

3. ACTIVITIES IN THE INTERIM

Below is the capital expenditure of Yola Electricity Distribution Company since handover, November 1, 2013. The items below are based on the list specified by BPE for identification of the CAPEX used by the DisCos. These expenditures also represent the major activities undertaken by the company in sustaining and enhancing operations.

Table 1 - YEDC CAPEX since handover to February 2015

	DESCRIPTION	AMOUNT EXPENDED (₦)	PROJECT STATUS
1	Maintenance of Network	58,547,753.64	On-going
2	Baseline loss study	87,552,000.00	Recovered in 12 months starting June 2015
3	Network reinforcement and expansion	94,529,575.74	N/A

4	Safety & Personal Protective Equipment (PPE)	5,457,935.71	ongoing
5	Vehicle- Supply & maintenance	8,090,309.01	ongoing
6	IT Infrastructure Enhancement	5,516,180.00	ongoing
7	Office Infrastructure Development & Renovation	104,456,912.51	ongoing
8	Commercial Strategy	39,125,904.42	ongoing
9	Communication Strategy	5,040,000.00	ongoing
10	Printing Works & Office Consumables	58,011,490.15	ongoing
11	Metering Plan and Installation	41,458,576.74	ongoing
	TOTAL AMOUNT EXPENDED	**507,786,637.92**	

Since handover there have been substantial changes in staffing as a number of poor performers were identified for subsequent disengagement and new talents were sourced to meet the requirements for service excellence. Optimal levels of staffing are yet to be determined as expected system upgrades come-in and as specific processes become automated.

Table 2 – YEDC HR Staffing Summary as at December, 2019

Details	Count
Number of staff pre-handover	1,736
Number of staff at handover	980
Number of staff removed from roster since handover	337
Number of staff hired since handover	382
Current number of staff as at December, 2019	956

III FINANCIAL ANALYSIS

1. OBJECTIVES

The objectives of the YEDC Performance Improvement Plan (PIP) for the period of 2020 - 2024 was driven by the need to expand the access to electricity for the customers (expansion and network availability) and improving technical and operational performance within the DisCo, including – but not limited to – loss reduction. The comprehensive plan that had been designed addressed the problems present at the time and sought to achieve the objectives through a comprehensive plan focused on:

- Facilitating access to the network for new customers,
- Improving quality of service (energy availability and sales increase),
- Reducing ATC&C losses,
- Decreasing operating costs,
- Improving customer care, and
- Implementing a strong Corporate Social Responsibility program.

Five (5) years after Handover, the ultimate objectives of the company remain the same. Nevertheless, as a result of the warlike terrorist attacks in its service area, YEDC's management has declared a Political Force Majeure situation and has been forced to operate and provide its services in particularly bad circumstances. A summary of these issues was given in Section II

Since the future of the region ultimately depends on the uncertain outcome of efforts to contain the insurgency, our short term objectives must be to manage the situation and minimize the impact to customers within very constrained circumstances.

We therefore consider the financial position that YEDC will face under three scenarios:

- **Status quo** – with no change to the current insurgency,
- **Modest Improvement** – early gradual improvement in the security situation, and
- **Optimistic** – this scenario is the best case, with rapid return to normal life in the YEDC region and improvement in national power supply being delivered to YEDC.

The three scenarios also involve changes in other assumptions, which are discussed below.

Sadly, at present Status Quo appears to be the most likely scenario. This scenario shows the inability of YEDC to meet its market and customer obligations. A significant change to the commercial environment would be required to avoid bankruptcy (for example, central subsidy, or a significant relaxation of payment obligations to other market participants).

Under all scenarios, it is impossible to meet the original Performance Agreement targets.

2. BUSINESS PLAN SCENARIOS

The framework in which this Performance Improvement Plan is designed has been updated is very volatile and uncertain. Multiple key factors conditioning the activities of YEDC are yet to be fixed at the time of preparing this Performance Improvement Plan and thus the company's management has decided to design a **flexible strategy** structured around 3 scenarios: a **Modest Improvement scenario**, an **Optimistic Scenario** and a **Status Quo scenario**.

The key factors that will determine which case will guide YEDC's investment and operational actions are:

- **Level of Insurgency:** The status quo scenario assumes no change to the current insurgency, modest improvement has an early gradual improvement in the security situation, and optimistic assumes a rapid return to normal life in the YEDC region.
- **CBN Facility:** As part of the Nigeria Electricity Market Stabilization Facility (NEMSF), the Central Bank of Nigeria is expected to lend 6,591.9 million Naira to YEDC at a 10% interest rate for 10 years. Signature of the agreement with YEDC has not taken place yet, and the current state of force majeure is adding complexity. This loan is of the utmost importance for YEDC investments and operations. The Status Quo scenario shows the situation if the loan is not received.
- **Ministries, Departments and Agencies (MDA) Debts:** the MDAs have accumulated significant debts with YEDC. The company is entitled to receive 20% of the owed amounts pre-handover and 100% of the debt-cumulated post-handover, amounting to 357.99 million Naira.
- **Adjustment of Debt with the Market Operator (MO):** Since Handover, there have been inaccuracies in the MO bills have led to an excessive liability being put on YEDC. The excess amount totalled 287.95 million Naira from November 2013 until December 2014.
- **Volume of Energy Received:** Two factors have caused a noticeable energy shortfall in YEDC. The generation capacity in Nigeria, which was expected to be at 9,000 MW in 2015 as per the original MYTO 2015, is now around 4,000 MW as at December, 2019.
- **Tariff rebasing:** Electricity tariffs have been recently updated by NERC (MYTO 2015), but they contain a series of inaccuracies that make them not cost reflective. Correcting these issues and having a rebased tariff would allow YEDC to recover its allowed costs.

Different combinations of the above described key factors configure the 3 strategic cases presented in this Updated Business Plan:

Table 1 – Configuration of the 3 cases of the YEDC Performance Improvement Plan

	Status Quo scenario	Modest Improvement	Optimistic Case
CBN Facility	Not received	Yes, received in June 2015	Yes, received in June 2015
MDA Debt	Not recovered	Recovered in 12 months starting June 2015	Recovered in 12 months starting June 2015
Adjustment of MO Debt	Not adjusted	N/A	N/A
Volume of energy received	Constant at 351 GWh/year (1.5% disco share, 40 MW)	Constant national generation, YEDC share increasing from 1.5% (351 GWh/year, 40MW) to 3.5% over 5 years (819 GWh/year, 93MW)	Growing national generation, YEDC share increasing from 1.5% (351 GWh/year, 40MW) to 3.5% over 5 years (2,236 GWh/year, 255MW)
Tariff Rebasing	No	No	Yes, rebased in July 2015. Includes rebasing of customer numbers and load allocation within YEDC
Paying MO bills in full each month	Yes	Yes	Yes
Clearing opening (Jan 15) MO liability of 2bn	No	Yes – via CBN facility	Yes – via CBN facility
Interest on market debts	20%	20%	20%
Losses reduced from opening 59.51%?	No	Yes – modest following capex	Yes – original loss reduction path met
Opening (Jan 15) customer numbers	177,893	177,893	177,893
Per year growth in customer numbers	0%	Yes – half of optimistic case	Yes – as in original plan but pro rata down due to results of BLS

2.1. POWER

- In Status quo: power delivery remains at 351 GWh/year, which is equivalent to a 40 MW capacity allocation. What's more this amount of power is 1.5% of national generation. ATC&C losses do not reduce in this scenario from the opening value of 59.51%;

- In Modest improvement: national generation levels remain constant but power delivery to Yola increases at 0.5% per year. This results in the 351 GWh/year (40 MW) in 2015 increasing to 819 GWh/year (93 MW). There is also a moderate reduction in ATC&C losses from the opening value of 59.51% to 46.43%; and
- In Optimistic: national generation increase as does power delivery to Yola by 0.5% per year. This results in the 351 GWh/year (40 MW) in 2015 increasing to 2236 GWh/year (255 MW). There is also an improved reduction in ATC&C losses from the opening value of 59.51% to 46.43%

These figures are subject to the assumptions made in the definition of each Case, and in particular they strongly depend on the energy received by YEDC in each Case.

Table 2 – Power Sales Forecast

Year	Power Sales Forecasts (GWh)					
	Residential	**Commercial**	**Industrial**	**Special**	**Street Lighting**	**Total**
STATUS QUO SCENARIO						
2020	688.01	161.42	36.09	148.92	0.56	**1,035.00**
2021	688.01	161.42	36.09	148.92	0.56	**1,035.00**
2022	688.01	161.42	36.09	148.92	0.56	**1,035.00**
2023	688.01	161.42	36.09	148.92	0.56	**1,035.00**
2024	688.01	161.42	36.09	148.92	0.56	**1,035.00**
MODEST IMPROVEMENT SCENARIO						
2020	688.01	161.42	36.09	148.92	0.56	**1,035.00**
2021	759.89	178.29	39.86	164.48	0.61	**1,143.13**
2022	830.96	194.97	43.59	179.86	0.67	**1,250.05**
2023	899.56	211.06	47.19	194.71	0.73	**1,353.24**
2024	968.14	227.15	50.79	209.55	0.78	**1,456.42**
OPTIMISTIC SCENARIO						
2020	688.01	161.42	36.09	148.92	0.56	**1,035.00**
2021	965.32	226.49	50.64	208.94	0.78	**1,452.17**
2022	1,279.99	300.32	67.15	277.05	1.03	**1,925.54**
2023	1,452.79	340.86	76.21	314.46	1.17	**2,185.49**
2024	1,853.12	434.79	97.21	401.11	1.50	**2,787.72**

Currently, the time for the connection process of new customers to the distribution network in YEDC is long and this had led to the creation of an undesired backlog of customer connections and encouraging people to obtain power supply through illegal connections.

As part of the commitments in the privatization bid process, YEDC gave priority to the connection of new customers whenever possible. Unfortunately, these efforts have been hindered by the revenue shortfall caused by the Interim Market Rules and by the warlike environment created by Boko Haram attacks.

2.2. CONNECTIONS

The new connection program's pace should be adapted based on energy availability in order to comply with the company's commitments. Based on the energy available to YEDC, this Improvement Plan expects to connect each year the number of customers presented in the following table. The number of new connections achieved is dependent on the scenario.

Customer numbers are assumed to remain static in the Status Quo scenario. In the Optimistic scenario we meet the Customer number targets of the original Business Plan (pro-rated down to account for the lower starting point identified in the Baseline Loss Study. The Modest Improvement scenario is between the two.

Table 3 – New Customer Connections First 5 Years

Year	Yearly No. New Connections – original BP	Yearly No. New Connections – status quo	Yearly No. New Connections – modest	Yearly No. New Connections – optimistic
2020	24,176	0	0	0
2021	26,372	0	8,098	16,196
2022	28,775	0	8,834	17,667
2023	31,395	0	9,638	19,277
2024	18,766	0	10,516	21,032
TOTAL	**129,484**	**0**	**37,086**	**74,172**

The table below shows the expected total YEDC customers expected under each of the scenarios between the years of 2020-2024, starting from the baseline as at December, 2019 = **380,061**.

Table 4 - Total customers projection from 2020 - 2024

Year	Yearly No. Total Customers – status quo	Yearly No. Total Customers – modest	Yearly No. Total Customers – optimistic
Dec, 2019	**380,061**	**380,061**	**380,061**
2020	380,061	380,061	380,061
2021	380,061	388,159	396,257
2022	380,061	396,993	413,924
2023	380,061	406,631	433,201
2024	380,061	417,147	454,233

2.3. *TRANSMISSION GRID ASSESSMENT*

From a purely technical point of view, the technical plan seeks to ensure that the distribution network is prepared and capable of wheeling the peak energy demand in the distribution system.

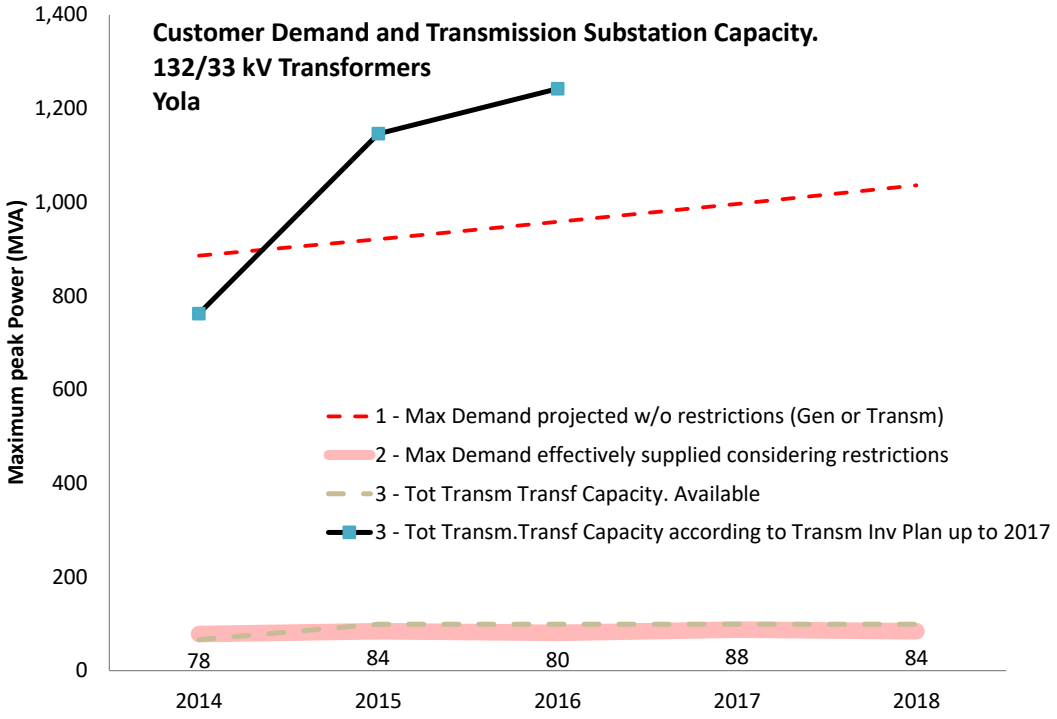
As can be observed in figure below, in 2013 the 132/33 kV transforming capacity of the Transmission YEDC is expected to be below the demand curve without restrictions. According to this scenario, there may be restrictions during peak hours if no investment is made to avoid them.

The information obtained about the Transmission Investment Plan reaches 2017 and is shown with a full line in the graph. The dotted lines indicate the investments to be performed by the Transmission Company during the following years so as to maintain a reasonable reserve to supply the maximum demand. YEDC new management therefore will look after the completion of the works scheduled by the transmission company in order to ensure the quality of the supply.

It is expected that where more energy is made available to YEDC, the peak demand will grow considerably and slowly approach the unconstrained demand. This situation, which is relevant primarily in the Optimistic Case, will require TCN to embark deliver a rapid transmission asset expansion plan to meet the needs of the YEDC service area.

TCN currently have a tariff review request with NERC, which is currently under consultation. This is designed to deliver a scale of investment that could deliver the required capacity for this plan. However, the outcome may depend on the results of that tariff review.

Figure 3 – Demand and Transmission Grid Capacity



3. PROJECTED BUSINESS FINANCIAL RESULTS

This section presents detailed financial projections based on the above assumptions, as well as the expected outputs resulting from the implementation of this Plan.

All projections presented in this Plan are dependent on the level of insurgency, market projections, number of customers and energy demand in each of the three Business Plan Cases considered.

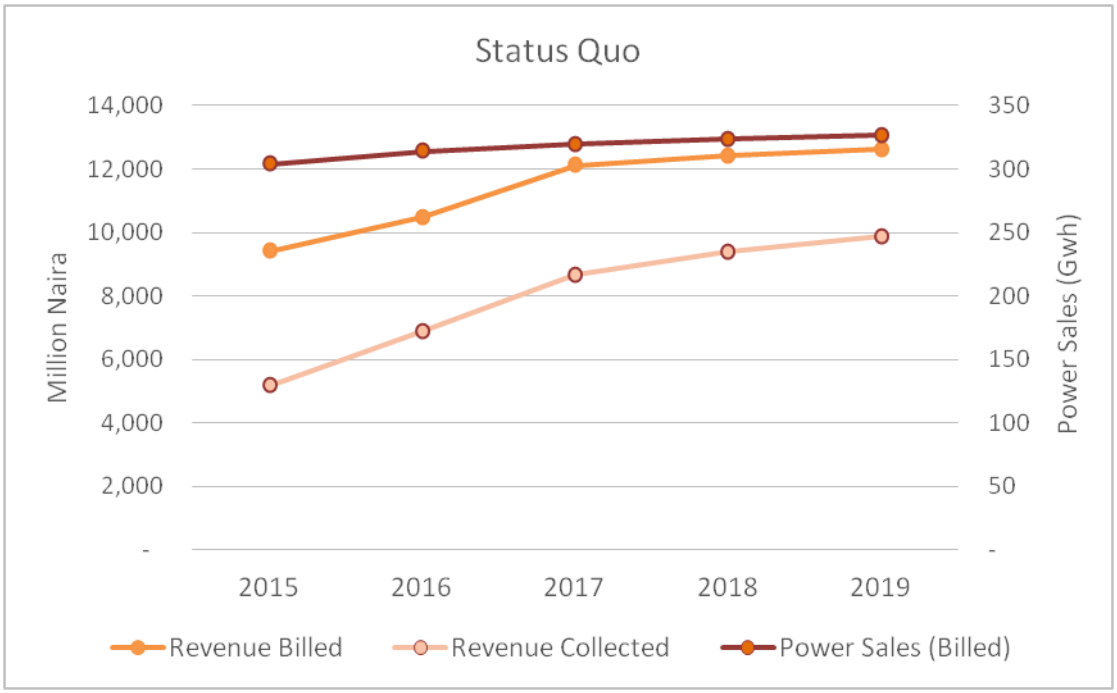
Since outside finance is expected to be unavailable while the Political Force Majeure endures, the only funds for investment and operational expenditure are the cash generated by the business. A clear result is that the financial constraints significantly limit the cash that will be available to the company and therefore the investment that will be possible.

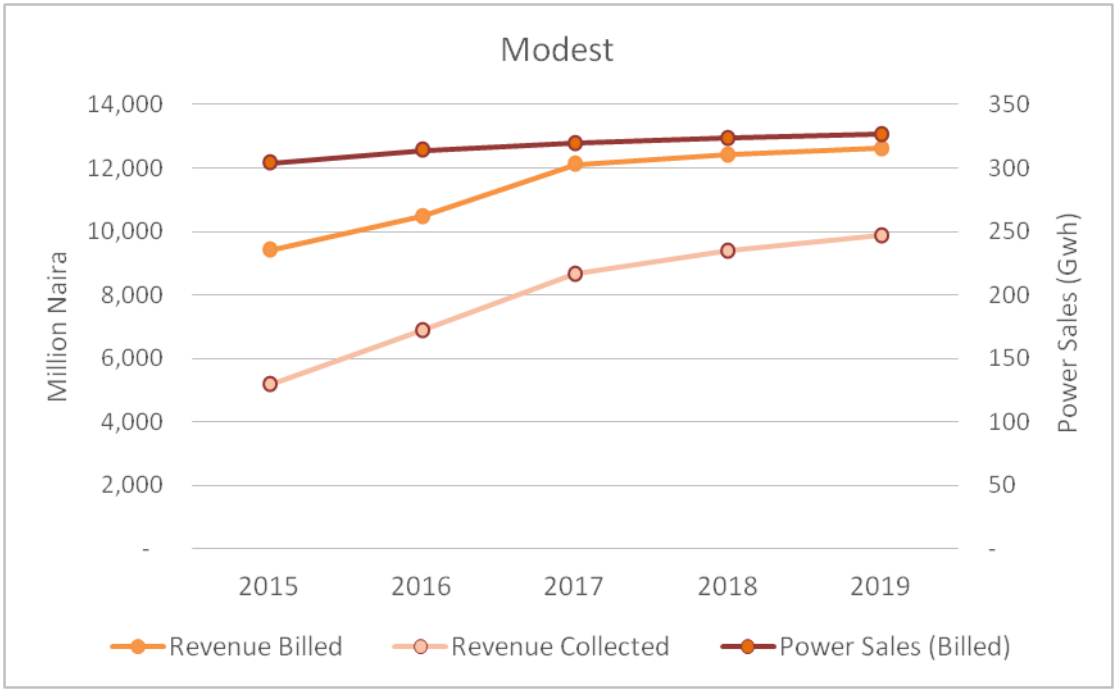
Under none of the three scenarios, even the most optimistic, is it possible to achieve the investment required to deliver the original targets under the Performance Agreement.

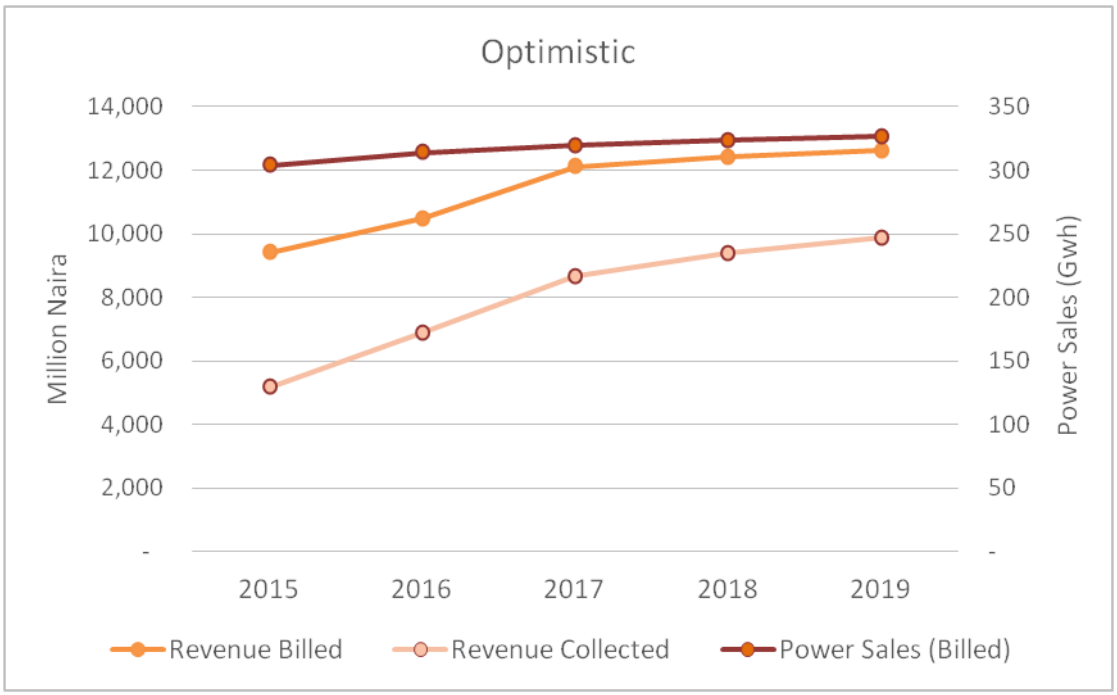
3.1. REVENUE FORECAST

The revenue that the company is expected to collect, net of bad debt, has been projected by applying the tariff model of the approved MYTO 2015 (January 2015) to the number of customers and energy demand by category.

Figure 4 – Revenue and Power Sales Forecast




Modest
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
350
300
250
200
150
100
50
-
Million Naira
Power Sales (Gwh)
2015
2016
2017
2018
2019
Revenue Billed
Revenue Collected
Power Sales (Billed)


Optimistic
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
350
300
250
200
150
100
50
-
Million Naira
Power Sales (Gwh)
2015
2016
2017
2018
2019
Revenue Billed
Revenue Collected
Power Sales (Billed)

3.2. *FINANCIAL STATEMENTS*

3.2.1. AUXILARY DATA

a) Status Quo

AUXILARY DATA		JANUARY 2015	JANUARY 2016	JANUARY 2017	JANUARY 2018	JANUARY 2019
(At start of year)						
ATC&C Losses in MYTO 2.1	%	36.15%	31.15%	27.40%	24.97%	24.97%
ATC&C Losses correctly rebased and scuplted	%	59.51%	59.51%	59.51%	59.51%	59.51%
Technical losses	%	12.50%	12.50%	12.50%	12.50%	12.50%
Commercial losses	%	3.00%	3.00%	3.00%	3.00%	3.00%
ATC Losses	%	15.13%	15.13%	15.13%	15.13%	15.13%
Collection Losses	%	52.30%	52.30%	52.30%	52.30%	52.30%
National generation delivered to Discos in MYTO 2.1	GWh	23,403	23,403	23,403	23,403	23,403
Energy share received by Yola (most likely)	%	1.50%	1.50%	1.50%	1.50%	1.50%
Energy share received by Yola (most likely)	GWh	351	351	351	351	351
Anticipated TEM tariff (Gen + Trans + Admin)	N/kWh	14.99	15.54	16.08	16.57	17.06
Imbalance tariff	N/kWh	7.57	7.82	8.33	8.87	9.42
Capacity share	MW	40	40	40	40	40

b) Modest

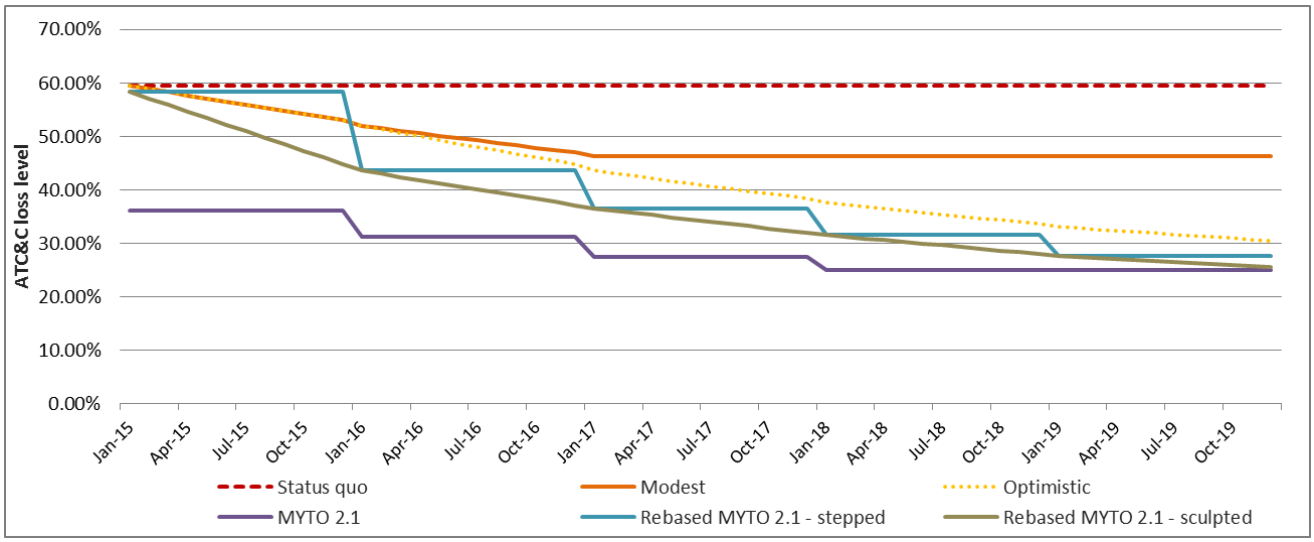
AUXILARY DATA		JANUARY 2015	JANUARY 2016	JANUARY 2017	JANUARY 2018	JANUARY 2019
(At start of year)						
ATC&C Losses in MYTO 2.1	%	36.15%	31.15%	27.40%	24.97%	24.97%
ATC&C Losses correctly rebased and scuplted	%	59.51%	52.02%	46.26%	46.26%	46.26%
Technical losses	%	12.50%	10.93%	9.72%	9.72%	9.72%
Commercial losses	%	3.00%	2.62%	2.33%	2.33%	2.33%
ATC Losses	%	15.13%	13.26%	11.82%	11.82%	11.82%
Collection Losses	%	52.30%	44.69%	39.06%	39.06%	39.06%
National generation delivered to Discos in MYTO 2.1	GWh	23,403	23,403	23,403	23,403	23,403
Energy share received by Yola (most likely)	%	1.50%	2.00%	2.50%	3.00%	3.50%
Energy share received by Yola (most likely)	GWh	351	468	585	702	819
Anticipated TEM tariff (Gen + Trans + Admin)	N/kWh	14.99	15.54	16.08	16.57	17.06
Imbalance tariff	N/kWh	7.57	7.82	8.33	8.87	9.42
Capacity share	MW	40	53	67	80	93

c) Optimistic

AUXILARY DATA		JANUARY 2015	JANUARY 2016	JANUARY 2017	JANUARY 2018	JANUARY 2019
(At start of year)						
ATC&C Losses in MYTO 2.1	%	36.15%	31.15%	27.40%	24.97%	24.97%
ATC&C Losses correctly rebased and scuplted	%	59.51%	52.02%	43.63%	37.60%	33.07%
Technical losses	%	12.50%	10.93%	9.16%	7.90%	6.95%
Commercial losses	%	3.00%	2.62%	2.20%	1.90%	1.67%
ATC Losses	%	15.13%	13.26%	11.16%	9.64%	8.50%
Collection Losses	%	52.30%	44.69%	36.55%	30.94%	26.85%
National generation delivered to Discos in MYTO 2.1	GWh	23,403	40,955	53,241	53,241	63,890
Energy share received by Yola (most likely)	%	1.50%	2.00%	2.50%	3.00%	3.50%
Energy share received by Yola (most likely)	GWh	351	819	1,331	1,597	2,236
Anticipated TEM tariff (Gen + Trans + Admin)	N/kWh	14.99	15.54	16.08	16.57	17.06
Imbalance tariff	N/kWh	7.57	4.47	3.66	3.90	3.45
Capacity share	MW	40	93	152	182	255

d) ATC&C loss reduction pathways

Figure 5: ATC&C loss reduction pathways



3.2.2. PROJECTED INCOME STATEMENT

Projected income statements are provided in the following pages. Profitability is never achieved for YEDC in the Status Quo or Moderate Improvement scenarios over the 5 year period. Only in the most optimistic scenario is profitability achieved.

a) Status Quo

PROFIT & LOSS		2015	2016	2017	2018	2019
INCOME						
Revenue Earned	Naira	9,710,669,501	10,356,608,282	11,547,506,150	11,345,514,258	10,890,495,096
less Collection Loss	Naira	-5,078,680,149	-5,416,506,131	-6,039,345,717	-5,933,703,957	-5,695,728,935
less VAT included in billings less collections above	Naira	-220,570,922	-235,242,960	-262,293,354	-257,705,252	-247,369,817
less +ve collection Loss for past debt (e.g., MDA post-handover debt pay off)	Naira	0	0	0	0	0
Accrued Income (diff between energy delivered - energy billed)	Naira	144,728,951	99,241,489	-16,832,658	-37,918,264	0
Shortfall relative to Allowable Revenue Under MYTO II - regulator view	Naira	1,175,598,041	1,255,856,076	-1,692,861,179	-1,808,432,749	0
Interest on accumulated shortfall	Naira	1,442,493,150	1,696,314,901	1,645,955,475	1,291,145,028	1,118,420,344
Reduction in deferred income	Naira	0	0	0	0	0
Extraordinary income for pre-handover receiveables (e.g., 20% pre-handover MD	Naira	0	0	0	0	0
Total Income	**Naira**	**7,174,238,573**	**7,756,271,656**	**5,182,128,718**	**4,598,899,064**	**6,065,816,688**
COSTS						
Total MO bill (imbalance charged @ 100% rate)	Naira	1,718,515,587	1,794,134,143	1,743,611,675	1,664,695,174	1,582,924,128
Gross profit (loss)	**Naira**	**5,455,722,985**	**5,962,137,513**	**3,438,517,043**	**2,934,203,890**	**4,482,892,560**
Expenses						
DISTRIBUTION OPERATION AND MAINTENANCE	Naira	348,766,050	383,642,655	422,006,921	443,107,267	465,262,630
COMMERCIAL & MARKETING	Naira	140,735,860	154,809,446	170,290,391	178,804,910	187,745,156
ADMIN & HUMAN RESOURCES	Naira	2,900,111,980	3,190,123,178	3,509,135,495	3,684,592,270	3,868,821,884
FINANCE & ACCOUNTS	Naira	45,091,354	49,600,489	54,560,538	57,288,565	60,152,994
TSA	Naira	697,262,493	766,988,742	843,687,616	885,871,997	930,165,597
OTHERS	Naira	13,621,727	14,983,899	16,482,289	17,306,404	18,171,724
Depreciation	Naira	855,662,665	975,423,091	1,040,549,022	1,105,674,954	1,170,800,885
Interest on MO liability	Naira	428,508,906	566,734,624	690,357,596	840,420,400	1,023,310,912
Interest costs	Naira	0	0	0	0	0
Total Expenses	Naira	5,429,761,034	6,102,306,124	6,747,069,868	7,213,066,766	7,724,431,780
Total Costs	Naira	7,148,276,621	7,896,440,267	8,490,681,544	8,877,761,941	9,307,355,908
Profit/ Loss	Naira	**25,961,951**	**-140,168,610**	**-3,308,552,826**	**-4,278,862,877**	**-3,241,539,220**

b) Modest

PROFIT & LOSS		2015	2016	2017	2018	2019
INCOME						
Revenue Earned	Naira	9,791,504,496	13,445,331,553	18,196,011,728	20,424,662,076	21,451,836,568
less Collection Loss	Naira	-4,767,304,597	-5,669,197,942	-7,107,405,457	-7,977,921,583	-8,379,138,383
less VAT included in billings less collections above	Naira	-239,247,614	-370,292,077	-528,028,870	-592,701,928	-622,509,437
less +ve collection Loss for past debt (e.g., MDA post-handover debt pay off)	Naira	64,244,243	45,888,745	0	0	0
Accrued Income (diff between energy delivered - energy billed)	Naira	395,423,358	402,589,213	185,720,862	85,597,874	0
Shortfall relative to Allowable Revenue Under MYTO II - regulator view	Naira	1,175,598,041	1,255,856,076	-1,692,861,179	-1,808,432,749	0
Interest on accumulated shortfall	Naira	132,729,755	295,790,430	111,014,129	0	0
Reduction in deferred income	Naira	-355,619,707	-957,062,952	-1,202,261,823	-1,201,637,155	-1,201,637,155
Extraordinary income for pre-handover receiveables (e.g., 20% pre-handover MD	Naira	144,583,783	103,274,130	0	0	0
Total Income	**Naira**	**6,341,911,757**	**8,552,177,176**	**7,962,189,390**	**8,929,566,534**	**11,248,551,592**
COSTS						
Total MO bill (imbalance charged @ 100% rate)	Naira	1,718,515,587	4,527,052,528	7,457,306,066	10,594,271,707	13,976,568,513
Gross profit (loss)	**Naira**	**4,623,396,170**	**4,025,124,647**	**504,883,324**	**-1,664,705,172**	**-2,728,016,920**
Expenses						
DISTRIBUTION OPERATION AND MAINTENANCE	Naira	348,766,050	383,642,655	422,006,921	443,107,267	465,262,630
COMMERCIAL & MARKETING	Naira	140,735,860	154,809,446	170,290,391	178,804,910	187,745,156
ADMIN & HUMAN RESOURCES	Naira	2,900,111,980	3,190,123,178	3,509,135,495	3,684,592,270	3,868,821,884
FINANCE & ACCOUNTS	Naira	45,091,354	49,600,489	54,560,538	57,288,565	60,152,994
TSA	Naira	697,262,493	766,988,742	843,687,616	885,871,997	930,165,597
OTHERS	Naira	13,621,727	14,983,899	16,482,289	17,306,404	18,171,724
Depreciation	Naira	855,662,665	975,423,091	1,040,549,022	1,105,674,954	1,170,800,885
Interest on MO liability	Naira	16,994,946	3,966,860	48,691,307	116,381,255	203,342,731
Interest costs	Naira	355,619,707	700,596,823	662,100,253	604,539,757	542,016,074
Total Expenses	Naira	5,373,866,781	6,240,135,183	6,767,503,832	7,093,567,379	7,446,479,674
Total Costs	Naira	7,092,382,368	10,767,187,711	14,224,809,898	17,687,839,085	21,423,048,186
Profit/ Loss	Naira	**-750,470,611**	**-2,215,010,535**	**-6,262,620,508**	**-8,758,272,551**	**-10,174,496,594**

c) Optimistic

PROFIT & LOSS		2015	2016	2017	2018	2019
INCOME						
Revenue Earned	Naira	15,634,418,622	33,773,379,211	47,810,904,358	49,685,533,270	65,199,550,668
less Collection Loss	Naira	-7,518,646,560	-13,871,127,027	-16,279,910,255	-14,467,117,929	-16,751,330,295
less VAT included in billings less collections above	Naira	-386,465,336	-947,726,294	-1,501,475,910	-1,677,067,397	-2,307,058,113
less +ve collection Loss for past debt (e.g., MDA post-handover debt pay off)	Naira	64,244,243	45,888,745	0	0	0
Accrued Income (diff between energy delivered - energy billed)	Naira	2,068,831,608	1,169,414,251	162,790,220	1,296,034,790	35,381,665
Shortfall relative to Allowable Revenue Under MYTO II - regulator view	Naira	6,829,271,467	3,893,758,573	0	0	0
Interest on accumulated shortfall	Naira	1,882,343,813	3,358,423,500	3,702,234,843	3,512,012,609	3,509,241,249
Reduction in deferred income	Naira	-355,619,707	-957,062,952	-1,202,261,823	-1,201,637,155	-1,201,637,155
Extraordinary income for pre-handover receiveables (e.g., 20% pre-handover MD	Naira	144,583,783	103,274,130	0	0	0
Total Income	**Naira**	**18,362,961,931**	**26,568,222,138**	**32,692,281,435**	**37,147,758,187**	**48,484,148,020**
COSTS						
Total MO bill (imbalance charged @ 100% rate)	Naira	1,718,515,587	9,980,970,107	19,452,324,339	25,425,214,380	38,156,032,039
Gross profit (loss)	**Naira**	**16,644,446,344**	**16,587,252,031**	**13,239,957,095**	**11,722,543,807**	**10,328,115,980**
Expenses						
DISTRIBUTION OPERATION AND MAINTENANCE	Naira	348,766,050	383,642,655	422,006,921	443,107,267	465,262,630
COMMERCIAL & MARKETING	Naira	140,735,860	154,809,446	170,290,391	178,804,910	187,745,156
ADMIN & HUMAN RESOURCES	Naira	2,900,111,980	3,190,123,178	3,509,135,495	3,684,592,270	3,868,821,884
FINANCE & ACCOUNTS	Naira	45,091,354	49,600,489	54,560,538	57,288,565	60,152,994
TSA	Naira	697,262,493	766,988,742	843,687,616	885,871,997	930,165,597
OTHERS	Naira	13,621,727	14,983,899	16,482,289	17,306,404	18,171,724
Depreciation	Naira	855,662,665	975,423,091	1,040,549,022	1,105,674,954	1,170,800,885
Interest on MO liability	Naira	16,994,946	11,670,134	13,377,619	8,436,285	17,981,381
Interest costs	Naira	355,619,707	700,596,823	662,100,253	604,539,757	542,016,074
Total Expenses	Naira	5,373,866,781	6,247,838,456	6,732,190,144	6,985,622,409	7,261,118,324
Total Costs	Naira	7,092,382,368	16,228,808,563	26,184,514,483	32,410,836,789	45,417,150,363
Profit/ Loss	Naira	**11,270,579,563**	**10,339,413,575**	**6,507,766,951**	**4,736,921,398**	**3,066,997,657**

3.2.3. PROJECTED BALANCE SHEET

The Balance Sheets for each scenario are provided below. Note that the asset base decreases in the status quo and Modest Improvement scenarios, as old assets are depreciated and not fully replaced.

Note that the cash and bank positions are negative in some years in both the status quo and modest improvement scenarios. As discussed later in Section 4, this is unlikely to be obtainable

from a bank or other financing agreement. In simple terms, the business is failing and potentially bankrupt.

a) Status Quo

BALANCE SHEET		2015	2016	2017	2018	2019
Assets						
Fixed Assets						
Regulatory Asset base	Naira	16,660,431,080	15,685,007,989	14,644,458,967	13,538,784,013	12,367,983,128
Current Assets						
Receivables	Naira	2,303,664,832	2,303,664,832	2,303,664,832	2,303,664,832	2,303,664,832
Deferred Income (Shortfall)	Naira	9,235,542,156	12,286,954,621	12,223,216,259	11,668,010,275	12,786,430,619
Stocks of Stores	Naira	479,605,674	479,605,674	479,605,674	479,605,674	479,605,674
Deposit with MO (3 month Guarantee)	Naira	0	0	0	0	0
Bank and Cash	Naira	-1,185,241,542	-2,818,826,453	-4,323,273,428	-6,101,514,401	-8,268,444,462
Current Liabilities						
Market Operator/ NBET	Naira	2,577,488,911	3,150,525,081	3,836,672,472	4,670,516,496	5,687,013,154
Other Creditors	Naira	103,789,790	114,168,769	125,585,646	131,864,929	138,458,175
VAT	Naira	20,445,655	19,603,580	21,857,779	21,475,438	20,614,151
Long Term Liabilities						
CBN Facility	Naira	0	0	0	0	0
Shareholder Loans	Naira	0	0	0	0	0
Bank loans	Naira	0	0	0	0	0
NET ASSETS	Naira	**24,792,277,844**	**24,652,109,233**	**21,343,556,407**	**17,064,693,531**	**13,823,154,310**
Capital						
Shares	Naira	0	0	0	0	0
Revaluation Reserve	Naira	0	0	0	0	0
Reserves	Naira	24,766,315,892	24,766,315,892	24,766,315,892	24,766,315,892	24,766,315,892
Profit/ (Loss) for the Year	Naira	25,961,951	-114,206,659	-3,422,759,485	-7,701,622,362	-10,943,161,582
	Naira	**24,792,277,844**	**24,652,109,233**	**21,343,556,407**	**17,064,693,531**	**13,823,154,310**
Out of Balance by.....		*0*	*0*	*0*	*0*	*0*

b) Modest

BALANCE SHEET		Calendar year end 2015	Calendar year end 2016	Calendar year end 2017	Calendar year end 2018	Calendar year end 2019
Assets						
Fixed Assets						
Regulatory Asset base	Naira	17,883,607,994	19,064,540,625	18,023,991,602	16,918,316,648	15,747,515,763
Current Assets						
Receivables	Naira	2,303,664,832	2,303,664,832	2,303,664,832	2,303,664,832	2,303,664,832
Deferred Income (Shortfall)	Naira	1,348,131,447	2,345,304,214	-253,083,797	-3,177,555,826	-4,379,192,981
Stocks of Stores	Naira	479,605,674	479,605,674	479,605,674	479,605,674	479,605,674
Deposit with MO (3 month Guarantee)	Naira	0	0	0	0	0
Bank and Cash	Naira	4,134,051,463	-496,475,199	-3,344,354,247	-8,280,113,450	-16,247,515,081
Current Liabilities						
Market Operator/ NBET	Naira	0	0	292,879,102	670,674,160	1,155,874,958
Other Creditors	Naira	103,789,790	114,168,769	125,585,646	131,864,929	138,458,175
VAT	Naira	23,655,967	32,332,387	44,002,406	49,391,827	51,875,786
Long Term Liabilities						
CBN Facility	Naira	6,472,722,014	6,216,255,884	5,676,094,314	5,078,996,916	4,419,375,835
Shareholder Loans	Naira	0	0	0	0	0
Bank loans	Naira	0	0	0	0	0
NET ASSETS	Naira	**19,548,893,640**	**17,333,883,105**	**11,071,262,597**	**2,312,990,046**	**-7,861,506,548**
Capital						
Shares	Naira	0	0	0	0	0
Revaluation Reserve	Naira	0	0	0	0	0
Reserves	Naira	20,299,364,251	20,299,364,251	20,299,364,251	20,299,364,251	20,299,364,251
Profit/ (Loss) for the Year	Naira	-750,470,611	-2,965,481,146	-9,228,101,654	-17,986,374,205	-28,160,870,799
	Naira	**19,548,893,640**	**17,333,883,105**	**11,071,262,597**	**2,312,990,046** -	**7,861,506,548**
Out of Balance by.....		*0*	*0*	*0*	*0*	*0*

c) Optimistic

BALANCE SHEET		Calendar year end 2015	Calendar year end 2016	Calendar year end 2017	Calendar year end 2018	Calendar year end 2019
Assets						
Fixed Assets						
Regulatory Asset base	Naira	17,883,607,994	20,051,783,085	21,951,563,699	23,159,846,816	23,934,548,854
Current Assets						
Receivables	Naira	2,303,664,832	2,303,664,832	2,303,664,832	2,303,664,832	2,303,664,832
Deferred Income (Shortfall)	Naira	16,897,549,195	24,362,082,567	27,024,845,808	30,631,256,052	32,974,241,811
Stocks of Stores	Naira	479,605,674	479,605,674	479,605,674	479,605,674	479,605,674
Deposit with MO (3 month Guarantee)	Naira	0	0	0	0	0
Bank and Cash	Naira	7,103,708,926	7,599,662,421	9,062,325,866	8,407,161,737	7,755,330,194
Current Liabilities						
Market Operator/ NBET	Naira	0	0	0	0	0
Other Creditors	Naira	103,789,790	114,168,769	125,585,646	131,864,929	138,458,175
VAT	Naira	48,958,989	84,294,523	130,479,565	143,905,514	195,791,947
Long Term Liabilities						
CBN Facility	Naira	6,472,722,014	6,216,255,884	5,676,094,314	5,078,996,916	4,419,375,835
Shareholder Loans	Naira	0	0	0	0	0
Bank loans	Naira	0	0	0	0	0
NET ASSETS	Naira	**38,042,665,828**	**48,382,079,403**	**54,889,846,354**	**59,626,767,752**	**62,693,765,409**
Capital						
Shares	Naira	0	0	0	0	0
Revaluation Reserve	Naira	0	0	0	0	0
Reserves	Naira	26,772,086,265	26,772,086,265	26,772,086,265	26,772,086,265	26,772,086,265
Profit/ (Loss) for the Year	Naira	11,270,579,563	21,609,993,138	28,117,760,089	32,854,681,487	35,921,679,143
	Naira	**38,042,665,828**	**48,382,079,403**	**54,889,846,354**	**59,626,767,752**	**62,693,765,409**
Out of Balance by.....		*0*	*0*	*0*	*0*	*0*

3.2.4. PROJECTED CASH FLOW STATEMENT

The Status Quo scenario has negative cash flows all years. Modest Improvement has negative cash flows in all but the first year.

This is unsustainable. The market rules do not allow for debt to be built up with the Market Operator; a regulatory change would be needed to defer payment to the MO. Otherwise YEDC will be bankrupt within the first year in the Status Quo scenario.

The Modest Improvement scenario sees an injection of cash from the CBN facility. This is used to provide some immediate investments to alleviate losses. No investment is possible in later years.

The Optimistic Scenario is the only one to show positive cash flows, and therefore the only sustainable scenario for the business.

a) Status Quo

CASH FLOW		2015	2016	2017	2018	2019
Receipts						
Cash Collection	Naira	4,631,989,352	4,940,102,150	5,508,160,434	5,411,810,301	5,194,766,161
CBN disbursement amount to EDC	Naira	0	0	0	0	0
Shareholder Loan	Naira	0	0	0	0	0
Other commercial loans	Naira	0	0	0	0	0
Cash injection for collection of MDA debts	Naira	0	0	0	0	0
Payments						
Payment to CBN - interest and principal	Naira	0	0	0	0	0
Payment to MO/NBET - must pay in full under TEM	Naira	1,575,305,955	1,787,832,597	1,747,821,881	1,671,271,550	1,589,738,382
Staff Cost	Naira	2,900,111,980	3,190,123,178	3,509,135,495	3,684,592,270	3,868,821,884
Other Creditors	Naira	1,141,687,693	1,359,646,253	1,495,610,878	1,576,099,860	1,654,904,853
VAT	Naira	200,125,267	236,085,035	260,039,154	258,087,594	248,231,103
Capex - only if cash flow sufficient to cover it	Naira	0	0	0	0	0
Interest costs	Naira	0	0	0	0	0
Loan repayments	Naira	0	0	0	0	0
Market Guarantee	Naira	0	0	0	0	0
Closing Cash Flow	Naira	-1,185,241,542	-2,818,826,453	-4,323,273,428	-6,101,514,401	-8,268,444,462

b) Modest

CASH FLOW		2015	2016	2017	2018	2019
Receipts						
Cash Collection	Naira	5,024,199,899	7,776,133,610	11,088,606,271	12,446,740,492	13,072,698,185
CBN disbursement amount to EDC	Naira	6,591,896,638	0	0	0	0
Shareholder Loan	Naira	0	0	0	0	0
Other commercial loans	Naira	0	0	0	0	0
Cash injection for collection of MDA debts	Naira	208,828,025	149,162,875	0	0	0
Payments						
Payment to CBN - interest and principal	Naira	355,619,707	957,062,952	1,202,261,823	1,201,637,155	1,201,637,155
Payment to MO/NBET - must pay in full under TEM	Naira	1,854,685,158	4,531,019,388	7,213,118,271	10,332,857,903	13,694,710,445
Staff Cost	Naira	2,900,111,980	3,190,123,178	3,509,135,495	3,684,592,270	3,868,821,884
Other Creditors	Naira	1,141,687,693	1,359,646,253	1,495,610,878	1,576,099,860	1,654,904,853
VAT	Naira	215,591,647	361,615,657	516,358,851	587,312,507	620,025,478
Capex - only if cash flow sufficient to cover it	Naira	1,223,176,914	2,156,355,721	0	0	0
Interest costs	Naira	0	0	0	0	0
Loan repayments	Naira	0	0	0	0	0
Market Guarantee	Naira	0	0	0	0	0
Closing Cash Flow	Naira	4,134,051,463	-496,475,199	-3,344,354,247	-8,280,113,450	-16,247,515,081

c) Optimistic

CASH FLOW		2015	2016	2017	2018	2019
Receipts						
Cash Collection	Naira	8,115,772,061	19,902,252,184	31,530,994,104	35,218,415,340	48,448,220,373
CBN disbursement amount to EDC	Naira	6,591,896,638	0	0	0	0
Shareholder Loan	Naira	0	0	0	0	0
Other commercial loans	Naira	0	0	0	0	0
Cash injection for collection of MDA debts	Naira	208,828,025	149,162,875	0	0	0
Payments						
Payment to CBN - interest and principal	Naira	355,619,707	957,062,952	1,202,261,823	1,201,637,155	1,201,637,155
Payment to MO/NBET - must pay in full under TEM	Naira	1,854,685,158	9,992,640,241	19,465,701,958	25,433,650,665	38,174,013,420
Staff Cost	Naira	2,900,111,980	3,190,123,178	3,509,135,495	3,684,592,270	3,868,821,884
Other Creditors	Naira	1,141,687,693	1,359,646,253	1,495,610,878	1,576,099,860	1,654,904,853
VAT	Naira	337,506,347	912,390,760	1,455,290,868	1,663,641,448	2,255,171,680
Capex - only if cash flow sufficient to cover it	Naira	1,223,176,914	3,143,598,181	2,940,329,637	2,313,958,071	1,945,502,924
Interest costs	Naira	0	0	0	0	0
Loan repayments	Naira	0	0	0	0	0
Market Guarantee	Naira	0	0	0	0	0
Closing Cash Flow	Naira	7,103,708,926	7,599,662,421	9,062,325,866	8,407,161,737	7,755,330,194

3.3. FINANCIAL RATIOS

Please note that in long term debt related ratios do not apply to YEDC as the company does not have long term debts.

Only the Optimistic Scenario has positive net income, in the other scenarios it is negative.

Table 5 – Business Financial Ratios 5Yrs Operations

RATIO	2020	2021	2022	2023	2024
STATUS QUO					
Gross Margin	76.05%	76.87%	66.35%	63.80%	73.90%
Net Income (% of Sales)	0.36%	-1.81%	-63.85%	-93.04%	-53.44%
MODEST					
Gross Margin	72.90%	47.07%	6.34%	-18.64%	-24.25%
Net Income (% of Sales)	-11.83%	-25.90%	-78.65%	-98.08%	-90.45%
OPTIMISTIC					
Gross Margin	90.64%	62.43%	40.50%	31.56%	21.30%
Net Income (% of Sales)	61.38%	38.92%	19.91%	12.75%	6.33%

4. FINANCING

YEDC does not expect to have access to commercial loans or additional equity during the period 2020-2024. Lenders will not provide funding until the situation normalizes. Thus, the only money available will be internally generated funds plus the CBN facility in the Modest Improvement and Optimistic scenarios.

In the all cases the CAPEX and OPEX plans have been adjusted to the internally generated funds available year on year, with monthly considerations.

In all scenarios the internally generated funds are not enough to cover the minimum operational expenditures and investment levels required to keep the company running in a sustainable manner. In fact no investment is made in Status Quo, only **24.8%** of the original envisaged volume (i.e., original Business Plan adjusted for FOREX movements since MYTO 2015) in Modest and **79.3%** in Optimistic.

Thus, if nothing changes, the Status Quo and Modest Improvement scenario would be the management of a highly unstable and defaulting business. Significant regulatory adjustments to allow default on market debts, or a subsidy, would be required to keep the business afloat.

IV TECHNICAL AND PERFORMANCE PLAN

1. MANAGING A FAILING BUSINESS

Delivering the objectives set out in the original Business Plan will clearly not be possible in the context of a failing business.

In the Status Quo scenario, no investment will be possible, and the only objective will be to prioritize the limited operational cash as appropriate.

In the other scenarios, some limited investment may be possible.

YEDC requires huge human and material resources to improve the performance up to an acceptable level. However, the resources are very limited. Depending on the outturn, the investments outlined here will need to be prioritized, as it is highly unlikely that all can be delivered in the horizon of this plan.

Therefore, the following criteria will be used during the development and implementation of the present plan:

- Priority of the investments/expenditures will be as follows: a) Loss reduction plan; b) Market growth (new customers, new lines, etc.); c) Quality of service improvement; and d) other investments.
- The major driver will be the use of existing assets up to its normal lifetime unless it is not valid for operation for technical or safety reasons. For this purpose, minor repairs will be carried out when necessary (and feasible within the security situation) to avoid the change of the asset.

The performance strategy has been built according to the following main aspects:

- Loss Reduction Plan;
- Expansion of the network/Market;
- Quality of the service improvement;
- Operational Efficiency –including process reengineering;
- CSR –including HSE- Plan.

2. INVESTMENT PLAN

The investments in capital assets in YEDC in 2020-2024 will be cash-driven. That is, given that the company will have no access to commercial loans or equity injection, all CAPEX and OPEX will need to be paid by the revenue generated (the cash collected) by the company every year. Thus it is the cash availability that will drive the investment plan.

The allocation of CAPEX in each of the different Business Plan Cases follows a similar methodology. The budget for customer meters is the variable used to adjust the total CAPEX to

the funds actually available for investments. This decision was made because the investments in the other CAPEX components are more indispensable for the company to keep operating and supplying electricity to consumers. Under extreme operating situations, such as the one YEDC is confronted with, preserving the structure of the network as much as possible and keeping the business running comes before installing new meters.

The YEDC management has prepared a set of development strategies that are required to keep the power system operating in a way as secure as possible and with as much efficiency as allowed by the framework conditions. But the implementation of the planned development actions can only be envisaged in the Optimistic case. The full list of actions and their characteristics is presented in the next section (Section 0). To adjust the Investment Plan to the Modest Improvement case, the management will prioritize the use of any cash available for investments in the following order:

1. Network rehabilitation and maintenance
2. Meters
3. Network Expansion
4. Vehicles and logistics
5. Information and Communication Technology

The main principle is to prioritize keeping the system running and reducing losses as much as possible. In spite of the priority order defined above, certain minimum level of investments will be necessary in all areas.

The summary of the investments in expansion and new connections can be seen in

Figure 8 and Table 6.

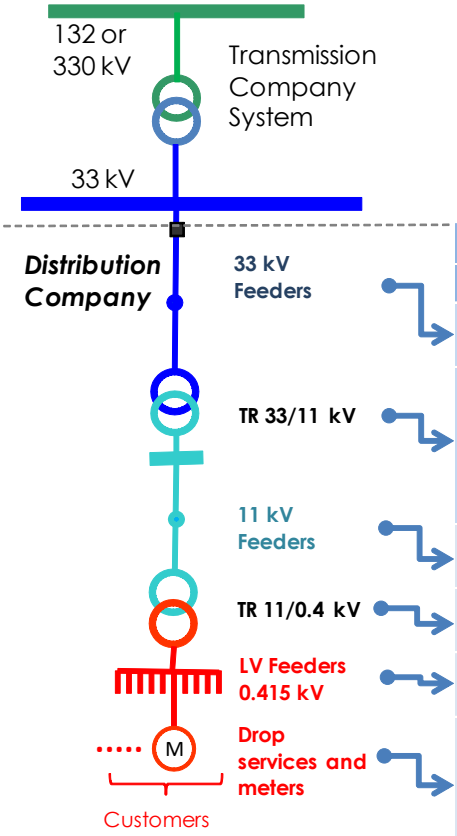
Figure 8 shows the structure of investments that the company plans to implement. Table 6 details the investments in the period 2020-2024 for each Business Plan Case.

There are no investments in the Status Quo case, because the company will not have any cash to put into CAPEX. This will clearly lead to a progressive deterioration of the network and render the business even more unsustainable in the future.

In the Modest Improvement case, some investment is possible in the early years, largely due to an injection of cash assumed from the CBN facility.

Only in the Optimistic case will a more sustainable program of investment be achieved.

Figure 6 – Categories 0f Distribution Investment Plan

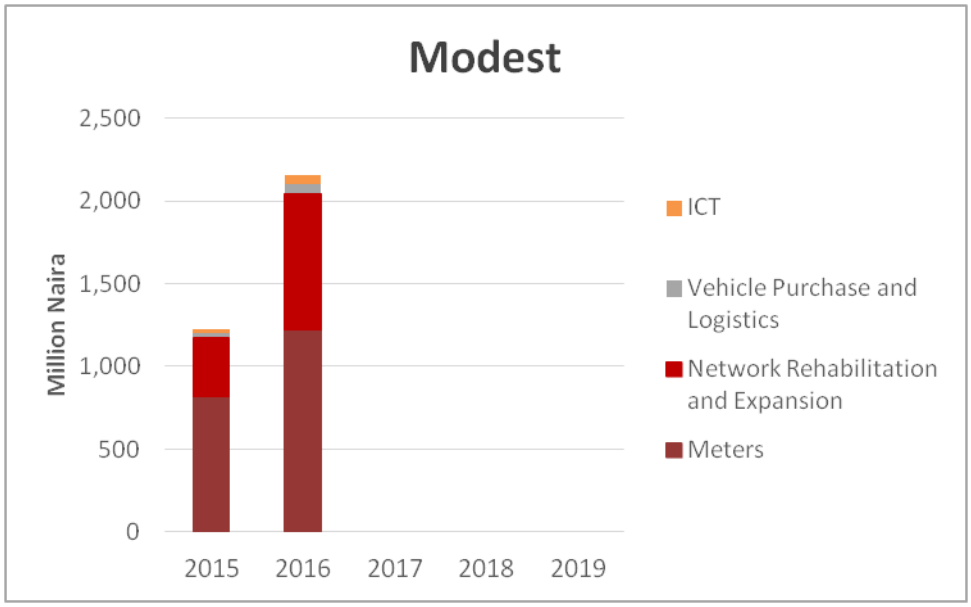


	Expansion		Replacement	
	Vegetative Growth	Losses Plan		
Subtransmission	New feeders 33 kV		Replacement Feeders 33 kV	
	New ST MV/MV Expansion SSTT		Replacement SSTT 33/11 kV	
Distribution	New Mid Voltage feeders		Replacement Medium Voltage	
	New Transformers MV/LV	MV & LV Grid, and Distr Transformers	Replacement ST MV/LV System	
	New Low Voltage feeders		Replacement Low Voltage System	
	New Connections	New Connections (meter and drop	Replacement Connections	
		Implementation AMR		
		Others plans		

Table 6 – Investments in Distribution Network in 2020-2024, in Millions of Naira

	2020	2021	2022	2023	2024
STATUS QUO					
Meters	0	0	0	0	0
Network Rehabilitation and Expansion	0	0	0	0	0
Vehicle Purchase and Logistics	0	0	0	0	0
ICT	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**
MODEST					
Meters	815	1,218	0	0	0
Network Rehabilitation and Expansion	360	827	0	0	0
Vehicle Purchase and Logistics	26	59	0	0	0
ICT	23	53	0	0	0
Total	**1,223**	**2,156**	**0**	**0**	**0**
OPTIMISTIC					
Meters	455	1,935	1,546	1,479	292
Network Rehabilitation and Expansion	676	1,063	1,227	648	1,576
Vehicle Purchase and Logistics	48	80	87	90	39
ICT	44	67	79	96	39
Total	**1,223**	**3,144**	**2,940**	**2,314**	**1,946**

Figure 7 –CAPEX Evolution by Major Items in 2020-2024



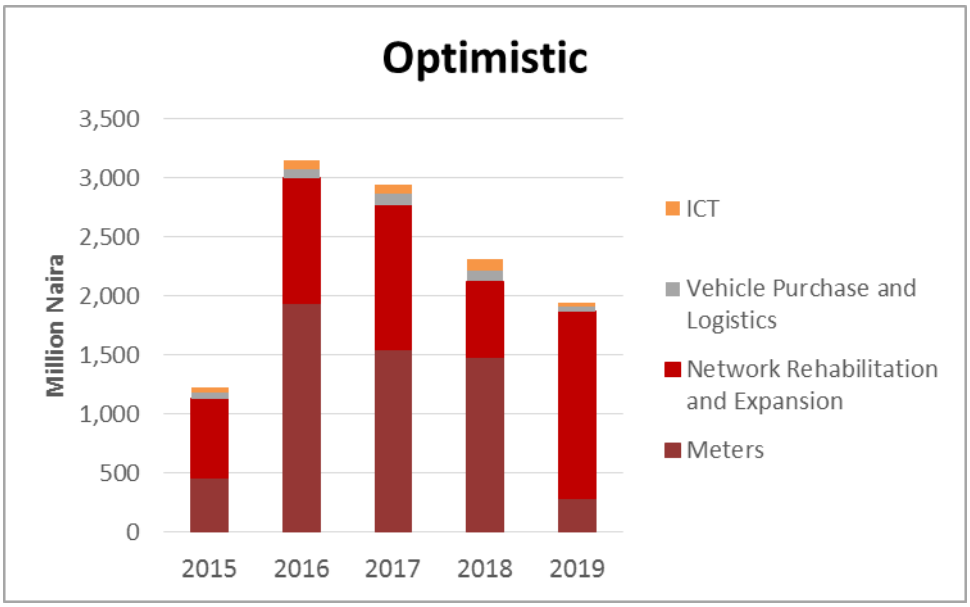
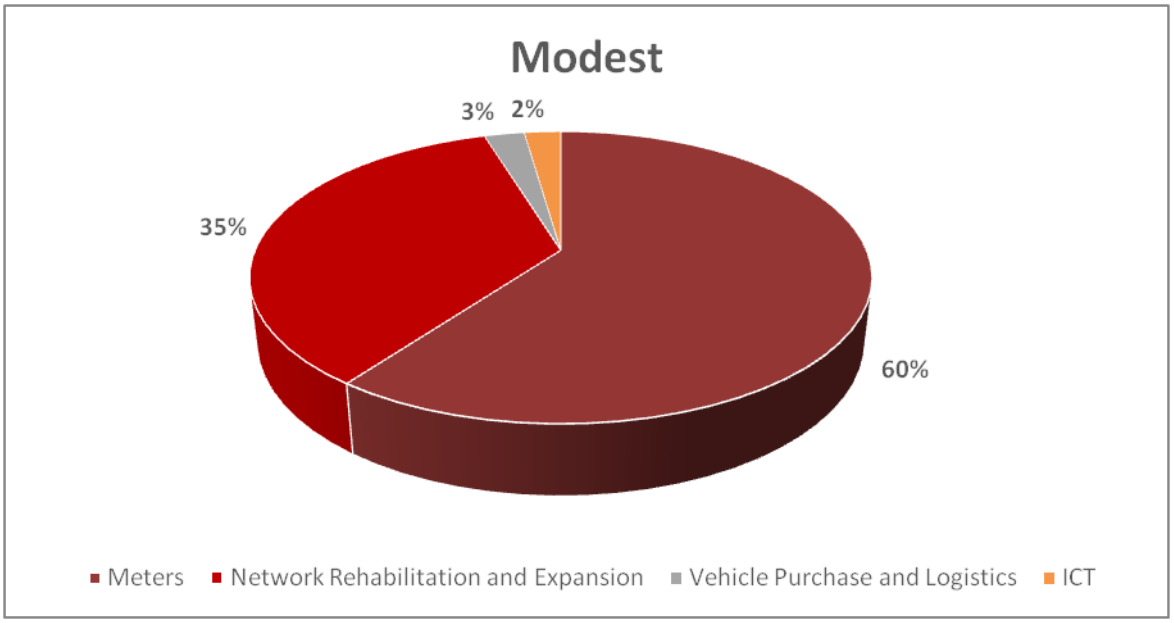
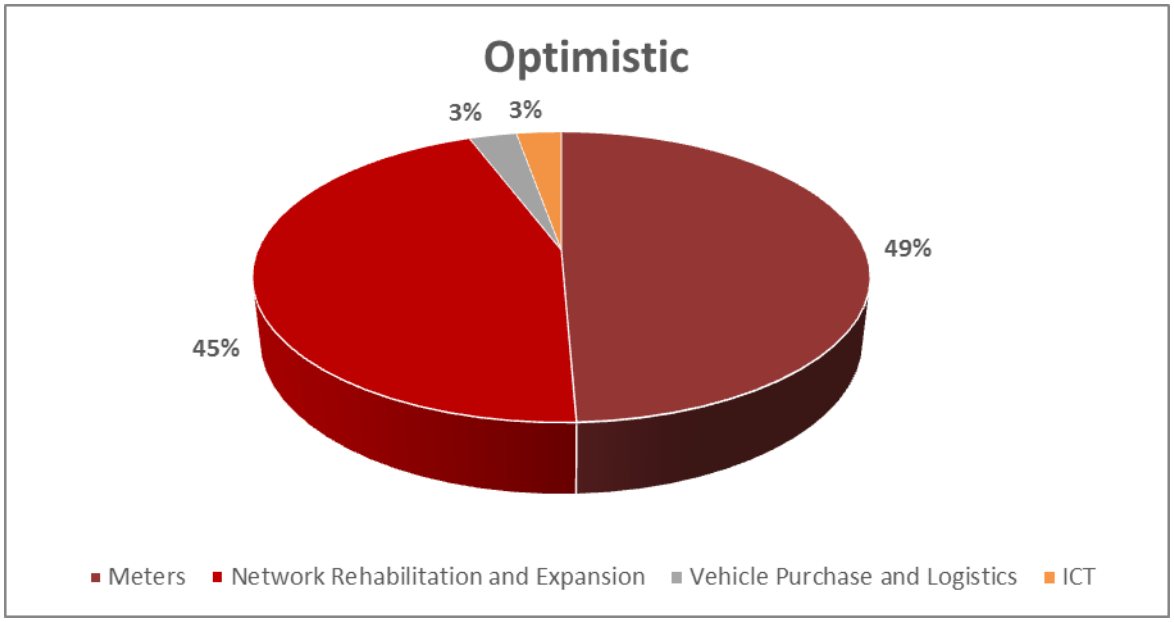


Figure 7 and figure 9 show how investment priorities and allocation will respond to the critical needs over the first five years, and cumulatively. In the Optimistic Case, the share devoted to meter and network expansion is considerably higher both in terms of share and absolute value.

Figure 8 –CAPEX Allocation by Major Items in 2020-2024





The deployment of new meters will play a key role in the Investment Plan, as one of the main tools to reduce loss levels and provide accurate billing figures both to the company and to its customers. Apart from the Status Quo scenario, where no investments in meters are possible, YEDC will still aim to install AMR to all large customers and to deploy prepaid meters whenever possible as the technology by default for LV connections. Prepayment meters offer comfort to customers (they know what they pay for) and an advantage in working capital and collection efficiency to YEDC. A certain amount of post-paid meters will still need to be acquired to cover remote areas where prepayment is not possible yet.

Table 7 – Details of the Metering Plan

Year	Type of Consumer Meter	Modest Improvement		Optimistic	
		Number of Meters	Investment Amount (2015 Naira millions*)	Number of Meters	Investment Amount (2015 Naira millions*)
2020	LV - Post-payment	3,222	74.1	1,660	38.2
	LV - Pre-payment	24,433	667.0	12,588	343.7
	Large Customers MV/LV - AMR	491	73.7	491	73.7
2021	LV - Post-payment	5,139	118.2	5,780	132.9
	LV - Pre-payment	38,966	1,063.8	64,699	1,766.3
	Large Customers MV/LV - AMR	238	35.7	238	35.7
2022	LV - Post-payment	0	0.0	4,269	98.2
	LV - Pre-payment	0	0.0	51,738	1,412.4
	Large Customers MV/LV - AMR	0	0.0	239	35.9
2023	LV - Post-payment	0	0.0	3,766	86.6
	LV - Pre-payment	0	0.0	49,706	1,357.0
	Large Customers MV/LV - AMR	0	0.0	239	35.9
2024	LV - Post-payment	0	0.0	578	13.3
	LV - Pre-payment	0	0.0	9,252	252.6
	Large Customers MV/LV - AMR	0	0.0	173	26.0
TOTAL INVESTMENTS		**72,489**	**2,032.4**	**205,416**	**5,708.2**

3. PLANNED DEVELOPMENT

In this context, we set out our planned development, which will be restricted by the cash available.

3.1. LOSS REDUCTION PLAN

3.1.1. THE CHALLENGE OF ELECTRICITY LOSSES IN DEVELOPING COUNTRIES

Electricity is one of the most essential services. The cost of meeting electricity bills for the families and businesses in our region is huge, especially in the context of an insurgency that is disrupting business activities and employment. Many of our customers have responded to the crises by fleeing to other areas.

Historically, the "demand" for illegal electricity bill reduction is quickly met by the "market". Within YEDC, as with all other Discos, there is a legacy of inefficient organizations, lack of management skills, lack of transactional data due to lack of management information systems, obsolete assets and measurement mechanisms, corruption at all levels, etc. These issues are common to many developing countries.

Other countries have applied different methodologies to reduce energy losses. Some of them have been successful but there are some others with poor results after the expenditure of a large amount of resources in terms of money and staff time. It may be said, as a lesson learnt, that any loss reduction program to be defined for this kind of countries must take into account not only technical issues related to the network but also all social, political, and community conditions in order to develop a balanced plan that allows all citizens in the country to adapt their behavior and pay for their really necessary consumption.

Therefore, defining the appropriate loss reduction plan's tasks in a comprehensive way will highly determine its successfulness.

3.1.2. GENERAL PLAN DESCRIPTION

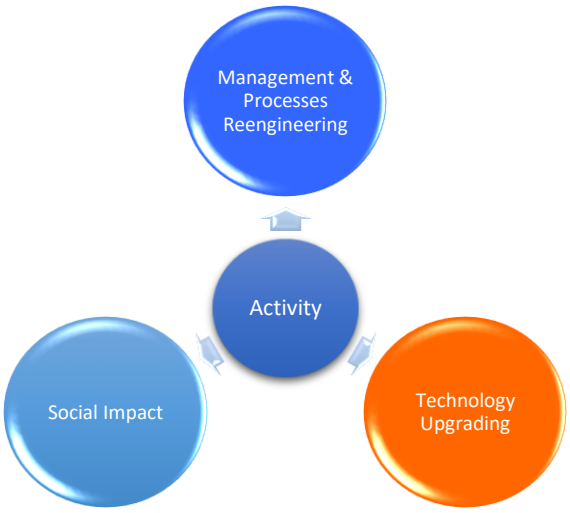
One of the main pillars of this Business Plan is to organize and prioritize resources to be successful and efficient in reducing losses. The major loss reduction goals comprise pinpointing the sources of electricity losses, measuring the amount, analyzing the causes and finding solutions to improve the current inefficient situation.

Reduction of losses is a permanent on-going work within a distribution company. Although there is no limit to loss reductions, there is always a trade-off between energy recovery and cost of the resources required.

This plan proposes that solution for losses reduction must result from a combination of three central pillars of utility management:

- Upgrade of Technology used for performing activities affecting losses.
- Customer behavior with regards to metering accuracy, connection, payment profile, company perception, etc. (Social Impact).
- Company management in terms of procedures and human resources.

Figure 9 – Pillars of the Loss Reduction Plan



Therefore, this plan includes solutions that integrate these concepts:

- Technology upgrade
  - Definition of specific features needed for Management Systems Upgrading.
  - Definition of modern metering architecture for supporting accurate energy balance, detection of energy fraud and ensuring collection of accrued receivables.
  - Definition of algorithms for detecting tampering/fraud almost in real time through the new metering architecture.
- Management and process reengineering
  - Management impacts all potentials losses in the company.
  - Development of proper Key Performance Indicators (KPIs) in different levels for loss detection and follow up (energy balance, meter reading, billing and collection).
  - Definition of specific procedures for loss reduction (problem detection, fixing, billing and following up).
  - Development of reporting, monitoring and control procedures.
- **Social Impact** – Any massive loss reduction plan present the potential for a significant impact on society. Since the electricity sector is highly imp acted by customer behavior, it is very important to define the activities related to customer perception of the company and of illegal power consumption (theft).

3.1.3. MAIN CHALLENGES

During its work in YEDC, since November 2013, the management team has been confronted with multiple challenges, some expected and others unexpected.

The main challenges the management identified are:

- **Insurgency:** The sabotage and attacks suffered by transmission and distribution network assets (some facilities have even been riddled with bullets, bombed and burned to the ground).
- **Public Attitude:** The general belief among customers, in particular domestic and agricultural, that the electricity is a public good and they should not pay nor be registered as customers. High levels of outstanding debt.
- **Challenging Debt:** Debt with agents on which exerting any pressure is complicated, including the military and MDAs.
- **Process:** Extremely poor historical practice in process control.
- **Customer information Systems:** Vulnerable database and poor customer records.
- **Control Systems:** Total lack of control of energy dispatches due to poor IT systems and lack of automated substations or SCADA.
- **Billing and Collection:** Lack of tight control of billing and collection over key accounts such us Industrial, Large Commercial and Specials. Limited number of channels for collections (only DisCo offices and banks).
- **O&M:** Total lack of field presence dealing with Meter and Installation anomalies. Non-compliance with technical standards.
    - About 70% of network using undersized conductors with badly made joints.
    - About 10% of pillars are broken, just from simple visual inspection.
    - About 80% of associated cables of the feeder pillars are visually damaged.
    - Some feeder lines are excessively long.
- **Metering:** Over 70% of unmetered customers (and growing with new connections due to the lack of money to procure sufficient meters).
- **Human Resources:** Extremely low technical and managerial skills.

This plan has been designed to be able to cope with these challenges taking into account the required trade-off between losses reduction and available budget and successfully bring down losses.

Given the geographic security issues already described, YEDC will continue to focus its loss reduction efforts in the areas where supply is still possible from a technical and a security point

view. As more areas recover normal operation conditions in the future, the Loss Reduction Plan actions will naturally and progressively be extended to those areas.

The higher level of commercial losses than anticipated during the Bid Process, means that measures associated with Billing and Collection should be prioritized.

3.1.4. LOSS REDUCTION PLAN APPROACH

The Loss Reduction Plan is structured in initiatives that have been individually designed and budgeted to deal with the losses reduction challenges present in YEDC. The eight initiatives were selected with the objective of maximizing energy losses reduction, within the budget allocated by the MYTO 2015 for CAPEX and OPEX and keeping in mind the long term objective of achieving sustained low losses levels (respecting the three pillars mentioned in the preceding section).

The table below outlines the achievable loss reduction pathway which is possible in each scenario. The lower loss reductions relative to the original business plan are due to the lower cash available. They are based on the capex available to the business relative to the capex that was expected in the original business plan.

Table 8 – Loss reduction pathway achieved under each of the scenarios

Loss reduction pathway	2020	2021	2022	2023	2024
Original	25.17%	16.14%	13.81%	12.06%	8.85%
Status quo	0.00%	0.00%	0.00%	0.00%	0.00%
Modest	12.59%	11.07%	0.00%	0.00%	0.00%
Optimistic	12.59%	16.14%	13.81%	12.06%	8.85%

The Loss Reduction Plan is structured not only by methodologies and actions but also by their results. Results have been quantified in terms of energy recovered (energy currently lost that will be re-integrated in the commercial cycle to be actually collected and thus converted into incomes). The estimated energy recovered was obtained by taking into account the consumption profile of each customer category and the forecast increase in demand over the next five years in Yola.

The Loss Reduction Plan has been designed taking into account that:

- All technological solutions need to be negotiated with service providers and/or solution suppliers to obtain the best possible price for the required quality.
- High-Qualified Expats expertise is catered for Training and Partial Supervision.
- High negotiation strength for the outsourced activities Local/International.
- Immediately after taking over, the new management team will start the procurement process of specialized equipment (AMR, Meters and Systems) immediately.

- PPM project will be built up to appeal to the World Bank financial supporting programs to this initiative across Africa and Nigeria.

3.1.5. LOSSES REDUCTION INITIATIVES

The proposed Plan includes the following initiatives:

- Internal incentives,
- District Boundaries – Energy Balance – AMR,
- System and Data Improvement,
- Billing Clean-Up,
- Large Customers Control – AMR,
- Metering and Installation Normalization,
- Street Lighting Control,
- Audit for Disconnected/Removed Services,
- Customer enumeration exercise
- Social Management, and
- Additional Losses Reduction Initiatives (to be carried out in parallel)
    - Illegal Connections,
    - Back Billing.

The following sections develop the details of each of the initiatives.

a) Internal Incentives

It will be important that the incentives of all staff are designed to ensure delivery of the loss reduction plan, from senior management right down to the marketers collecting revenue.

Historically there have been "unofficial" routes for customers to avoid payment. These routes will need to be removed, and that requires correct incentives for all staff.

At the same time, an aggressive Internal Communication Program will be developed and implemented within the company, engaging all internal stakeholders into the Loss Reduction Plan in general and into each of the initiatives as much as possible. All members of the organization need to buy in and support the program. Scarce resources demand the highest commitment from all stakeholders, internal ones being among the most critical. The program will contain incentives and rewards based on information, support, and results.

b) Illegal Connections

There is an expectation that an extra 5% of each customer category may be found illegally connected, consuming but not billed. This will add new customers, which will be regularized and added to the billing records.

These new customers are additional to the real new customers connected that legitimately applied through the standard new connection process.

Cost and benefits are identical to a new connection. The company will decide whether these Illegal Connections found and regularized are also to be charged for a certain period of past consumptions, offering a payment instalment plan.

c) Large Customers

In terms of customer segments, the priority is to secure the installations and set up a system that guarantees effective sustainability. This will be achieved through:

Initial sweep of inspections of customers in accessible areas: The objective is to have a quick assessment of installation conditions, fixing of installation anomalies, and inventory of requirements for next step. This will provide a more complete knowledge of customer details, and fix any anomalies that are currently leading to under-recovery.

Implementation of AMR: In the mid-term, deployment of advanced metering techniques and closer monitoring and control during the first years will be high consumption customers (Industrial and Commercial). This initiative will be based on the implementation of an AMR solution to the segment of high consumption customers, providing the company a reliable platform against power theft, billing errors and collection delays for non-billing or bill delivery on individual customers that concentrate a relevant share of the company's incomes.

This strategic axis will be targeting specifically a 60% of Commercial C2 and C3 tariff categories, 100% of Industrial and 50% of Special categories. Prioritization will be agreed based on a set of previous inspections to be carried out, outputs coming from the CVE and the identification of the most critical feeders to be technically addressed.

As mentioned before, success of this initiative strongly depends on successfully guaranteeing that technical teams in the field do not get compromised and the incentives for fraud are completely mitigated. The new managed will actively monitor and disincentive any fraudulent or illegal behavior among its employees so that the process if secured and the company presents a transparent image and example to customers.

Implementation of AMR for Large Customers is to cover Industrial customers within the first two years, and Commercial and Special customers within the first three years of operation after takeover.

d) System and Data Improvement

The company currently has a critical problem in quality and host of customer data, accurate billing, cash management, customer transactions management, etc. Solving all these issues requires a proper Commercial Management system, robust enough to secure and manage the

data providing minimum business and financial reports above controlling and managing all customer business transactions.

An integrated Commercial Management System is to be procured and its implementation will demand a pre-process of Customer Data Capture (Customer Verification Exercise – CVE, through inspections). This process will involve visiting 100% of the customers, not only to collect and register all relevant customer details and services conditions but also to note visual anomalies in meter and installation, valuable feedback that will help in the prioritization of further activities.

Initiatives in system and data improvement will comprise 3 main features:

1. Procurement of System (Software and Hardware).
2. Business Process Reengineering, defining system user requirements.
3. Customer Verification Exercise.

A variety of service providers usually offer Turn Key approaches to handle the first 2 features with the possibility of obtaining a good business deal for the company and are a smart way of overcoming the lack of such specialized skills within the company resources to embrace and successfully implement these initiatives.

In addition to the implementation of the system itself and gathering better customer data, the staff will be trained in computer and system usage, improving skills.

This initiative addresses the energy losses problem from both an external and an internal perspective, improving business processes, control processes and quality of data; at the same time it will provide a good opportunity to bring in and implement modern and best practices to the management of the company after takeover; and ultimately internalizing more transparent and ethic business practices based on system self-control and system audit.

e) Billing Clean-Up

It is clear that the current billing process is distorted with overestimated consumptions and the delivery of incorrect bills to customers. Issues include:

- The high percentage of unmetered customers: over 70%.
- The manual reading and data capture process.
- Poor data on customers.
- The complete lack of control of the commercial cycle and billing validation.
- Areas where bills cannot be delivered because of the security situation.
- Customers fleeing areas and therefore not paying fixed charges.

Benefits of this initiative will come indirectly from Customer Satisfaction and directly from bills being more likely to reach the intended customers. Customers will be more willing to pay with easier payment methods and accurate billing. These benefits will be assessed in reduction of

operational costs (fewer complaints, fewer inspections, better cash flow) and thus generating social benefits and improving the social image of the company.

In any case, cleaning billing records will be essential for the implementation of the new Commercial Management System, as an integrated solution.

The initiative will consist in defining key billing and business parameters (average consumptions, payment history, type of complaints, etc.), and will rely on those parameters to run a set of validation queries over the database detecting customers whose billing needs to be scrutinized and validated.

This process is to be supported by an Office team with data management and analytical profile and a Field team carrying out the necessary customer installations verification to answer doubts from the Office team and verifying the condition of services.

f) Back Billing

The company will perform back billing in the format and time that the regulation allows it. As for the illegal connections, during the course of all LRP activities, customers defaulting consumptions or under-charged will be found and, as per the regulatory framework for distribution, will be billed for the non-billed consumption and the company will recover such incomes.

This initiative will demand political lobbying actions and strategic management not to be sabotaged by external factors or authorities. Education of stakeholders is required to explain the underlying process and reassure them of its transparency.

g) Audit of Disconnected Services

Disconnection Process is currently not systematized and does not follow a strict controlled procedure. It is an open door for unbilled consumptions by “disconnected” customers still consuming due to improper or non-existent follow up.

The new management will implement a check-up process of all those customers reported as disconnected for non-payment and this process will ensure customers are really not consuming and encouraging them to adopt the possibility of paying for the supply.

This activity will be outsourced and a contractor is to be paid based on the results of its operation. The number of customers regularized and properly billed on a regular basis will serve to assess the performance of this initiative. Strict terms of reference will be developed in order to ensure the Contractor is motivated to pursue results rather than individual actions.

h) Customer Enumeration Exercise

It is clear that the current level of customers in the database far exceeds the number of paying customers in the YEDC region. For this reason, it is necessary to carry out a full customer enumeration exercise to the satisfaction of NERC. The aim of the exercise is to determine:

- The true number of customers connected
- Reclassify customers according to their power usage

i) Social Management

Loss reduction plans normally imply an increase of power consumption by customers, accurate monitoring of electricity consumption per customer and more rigorous discipline of payment. These constitute major changes to the consumers' environment and behavior as a result of the business improvement achieved by the company. If the **social component** is not well and strategically managed, it could become one of the biggest management problems, not only with the unsatisfied customers subject to the plan, but also with some other key stakeholders such as the Government, Politicians, the Regulator, the Press and some others.

This initiative of social management will address the key communication agents in order to educate the communities on what the company will be doing and what is the rationale behind it, as well as what the benefits for the community are. This plan will be implemented through school visits, radio shows, local leaders and community workshops. It will be very important to try to teach the population, with adequate explanations, that the electricity is not a free public service and that YEDC is there to supply a service but also to collect the money for it.

Communication will be directed to target areas, and done in advance to the LRP activities, trying to get the communities buying in rather than resisting or battling back against the LRP so that when the implementation works start in their vicinity they do not oppose or hinder them.

j) District Boundaries – Energy Balance

The first and one of the most critical aspects to be secured is to have a proper control of the energy received from the transmission grid and dispatched to the distribution network.

Energy purchase is the most critical expenditure of the company and thus it is extremely necessary to be 100% sure that all receiving points are measured and that the measurement is accurate. This not only includes transmission nodes, but also exchange at borders with other DisCos.

At the same time, how energy is dispatched within the system at Feeder level and Transformer Zone is of relevance to get knowledge of the network operation and to set up the Loss Reduction Plan prioritization.

Access to measurement in real time and periodical basis makes the system more robust. The Loss Reduction Plan proposes to implement Automated Meter Reading (**AMR**) for all feeders that are accessible due to the security situation. The speed of implementation depends on the scenario.

Based on the information obtained from metered points, the DisCo will be in position to analyze the conditions of the current energy balance system in order to assess its strength. The objective is to create a solid and reliable energy balance at the lowest possible level in order to provide valuable information to the management to guide the loss reduction activities.

During the first phase of the losses reduction strategy it is essential to master the operation of the large and most critical assets, those who channel major energy flows, in a subsequent stage the company's management will evaluate whether it is interesting or not to further extend the reach of the AMR. In its initial implementation phase, that is in the period 2020-2024, this analysis will only be performed at the first 2 levels of the distribution network's structure, i.e. substation

and feeders. For the following years and as per results of 1st Phase, the company will consider the possibility of going beyond those upper levels and extend the deployment of AMR to the lowest two levels, i.e. distribution transformer and customer meters.

The results of the described analysis will provide assessment of the energy control in the company and eventually a vision of the potential detailed areas with higher energy losses. Initially, the problem seems to be affecting the entire network and a feeder metering coverage will provide necessary information to prioritize initial focus areas.

This initiative requires special and high technical expertise to deliver it. High-Qualified Expats support will be obtained to advice on the final design and implementation of this strategy. Also, the possibility of arranging a Turn Key Solution approach will be considered.

k) Metering and Installation Normalization

Over 79% of customers are not equipped with a meter according to the information collection during the study for the quantification of losses and customers that took place in 2014. In most cases, and due to the application of the bill estimation methodology prescribed by the regulation, many of the unmetered customers may be suffering from overbilling. Even though regularizing this problem is controversial since it might generate a lower billing, it will bring advantages through benefits in Collections and Customer Satisfaction, resulting in a better AT&C.

Furthermore, installed meters have not been subject of replacement or repairing programs. Some of these meters are already approaching their obsolescence stage, which results in imprecise readings and under-recording of consumption.

The above parameters are important to be taken care of, since if they deviate from the initial assumptions, they will require a renegotiation with NERC to be done due to the important investment levels required for those assets and revision of the Loss Reduction Plan.

The initiative proposes to address these issues within the 2020-2024 period of the LRP by:

- Pushing towards the end of the period, because of cash constraints.
- Combining two metering technologies **Pre-payment** and **Traditional Metering (post-payment)** with a focus on prepayment.
- Mainly focusing on Residential R1 and R2 and Commercials C1 categories.

Anomalous customers (Non-Metered and Faulty Meters) are to be found and addressed based on outputs coming from the initiatives above described, applying geographic prioritization stemming from measurements done as per the District Boundaries – Energy Balance initiative. The key strategic focus is to implement a consolidated effort (Integrated Normalization Units – INU[1]), as described above on Operational Efficiency section.

[1] Integrated Normalization Units are sections of the distribution network that are grouped together according to a specific criterion (for example supplied from the same feeder) to assess investment and losses reduction initiatives in an integrated way, being able to focus on most critical areas.

l) Street Lighting Control

Street Lighting is a tariff category with small number of connections and low consumption. It could easily be thought that it should not be a priority to address it, but it is an open door for power waste.

The proposed plan will start with the inventory of all Street Lights connected, how many SL are powered, how many SL are non-functioning, cross checking current usage vs. billing. At the same time, the anomalies identified will be addressed, as well as the associated irregular connections.

A routine process of auditing status of connections will be implemented in the company in order to avoid obsolescence of the information gathered through this LRP initiative. This will contribute to preserve the losses reductions obtained over the years.

m) Technical Initiatives

The priority during the next 5 years will be to focus on market control, improving internal operative and management process, disciplining "bad behaviour" customers, and strongly educating and raise awareness in all kinds of stakeholders.

Nevertheless, the engineering department will also be pushing forward to get better quality services and securing supply to best customers. In conjunction with the above described Loss Reduction Initiatives, key technical activities will be developed within the INU areas, in order to optimise resources, disturb the customers the least, and obtaining effective results as quick as possible.

This initiative includes, but won't be limited to, the following:

- Replacing bad and dangerous joints.
- Ensuring appropriate transformer capacity to the supply areas.
- Reconfiguration of long circuits.
- Protecting sections of the network with Antifraud configurations.

Currently, technical losses are mainly in undersized conductors in 11 and 0.415 kV, overload 11/0.415 transformers, bad joints in the first part of the feeders (33 and 11 kV) where the load (Amps) is higher.

In order to eliminate these problems, it will be necessary to replace network and transformers. These initiatives are considered in Investment Plan's "Replacement" category.

Other electrical situations where is possible to reduce technical losses is reducing reactive energy that currently is flowing in the network, installing capacitor's banks mainly in 11 kV network and in 33/11 kV substation. These investments are considered in Investment Plan's Expansion category.

Further improvements in technical losses would require additional investments other than those allowed by the MYTO 2015.

3.2. EXPANSION OF THE NETWORK

The Investment Plan comprises investments for both the expansion of the network and the replacement of ageing or deteriorated assets in different activity sectors of the distribution company, namely:

A. **Sub-Transmission:** It includes all the investments in 33 kV network and 132/33 kV substations.

B. **Distribution:** It contains all the investments in medium and low voltage network (11 and 0.415 kV). Including customer drop services and meters.

C. **Technology:** It contains all the investment in software and hardware necessary for operational management and control improvement of processes.

D. **Non-Electric**: It includes all the others investments not included in the others categories mainly the non-electric asset like vehicles, offices equipment, tools, brand building publishing, etc.

The relative importance of each of the investments in expansion over the total investments in YEDC's system will be determined by the availability of funds and the availability of energy. The objective of YEDC is to provide adequate electricity supply to as many customers as possible. This can only be achieved if the tariffs and the energy received by the company are adequate.

Since handover of the company to the new managers in November 2013, the investments have been mostly focused on rehabilitation and maintenance of the existing network. The planned investments in expansion of the network had to be minimized due to the energy and revenue shortfall imposed on the company during the Interim Market. It is expected that this constraint will continue in all three scenarios, and investment will be limited and largely focused on essential maintenance. **In the Status Quo case, no investment is made, and as a result it is assumed that the network will deteriorate.**

3.2.1. INVESTMENT IN 33 KV NETWORK AND SUBSTATIONS

The total capacity of 33 kV primary voltage transformers is believed to be sufficient to answer the demand during the first years, but there are specific cases of overloaded transformers, or transformers that are about to be overloaded. These cases are mainly in 33/11 kV transformers and must be solved adding capacity and performing a transformer's rotation or load rearrangement.

YEDC has a particular situation with 33 kV primary voltage transformers: the total distribution transformer capacity is lower than that of the transmission transformers and the total 33/11 kV capacity is almost the same than 33/0.415 kV transformers. Generally, the latter case represents less than 20% of the total transformer capacity in 33kV voltage level but in YEDC is almost 50%.

Plan of Transformers' Rotation and Load Rearrangement: Transformer Rotation and Load Rearrangement are two actions that aim at optimizing the use of the existing transformers to ensure they are loaded neither below 15% nor beyond the 80% of their capacity. For this, it is considered within this Plan to buy two (2) 15MVA transformer during the first five years after takeover, which should be installed where there is overload and, in this way, free other transformers that could be rotated so as to eliminate overloads in some transformers by taking advantage of the spare capacity of others.

Additionally, in those cases where the 11kV network influence areas are close to each other, medium voltage networks are built to transfer load from an overloaded transformer to another with spare capacity.

The existing installed capacity will be kept until 2021. From that year on, investments on additional transformers and substations will be performed so as to follow the growth of the demand with a reserve considering that is not possible to take advantage of spare capacity in 33/0.415 kV transformers.

Investment in 33 kV Networks: The 33 kV network is the main part of the Distribution system in order to support sales and quality service. Investment Plan considers a low level of early investment to avoid very critical cases that may affect the output of the Losses Plan, energy sales, or issues that affect large customers. Later, investments in 33 kV grids may be resumed in the more optimistic scenarios together with the investments in new substations and additional transformers for existing substations.

3.2.2. INVESTMENT IN 11 KV AND 0.415 KV GRIDS

Currently, there are many areas with undersized conductors and overload distribution transformers. The Plan considers eliminating 11 kV and 0.415 kV network's undersized cases and overloaded 11/0.415 kV distribution transformers (bottlenecks). This will be performed gradually on a case-by-case prioritization.

Capital expenditures will be optimised to prioritize investments by type and by geographic area. During the first years, the purpose of most of the investments is to support the Loss Reduction Plan, to control the operation of the company, to respond to the requests of new customers and to increase the sales and collections. During these years, the investments will be dedicated inter alia to anti-fraud networks, to replace the part of the network that is closer to the customer, AMR and conventional meters, information systems, eliminating bottlenecks that are critical for the installations and improving the image of the company both inwards and towards the community. From 2019 onwards, the investments are devoted to further improve the quality of service and to increase the capacity of the installations to answer the growth in the demand, especially in sub-transmission facilities and substations.

Additionally, investments will be focused in those areas that are considered as a priority, either due to the energy loss in the area, or due to the existence of large service interruptions, or when part or the whole of the demand is out of the electric system (supplied with its own generation). Both cases present opportunities to increase sales and collections, so those geographical areas having an especial concentration of these cases will have priority with respect to other areas. This means that it is necessary to assess the profitability of investments per area and give priority to the most profitable ones. On the other hand, this Plan proposes that in the area

defined as priority, every investment and normalization action included in the Investment Plan should be carried out in a simultaneous and coordinated manner, so as to offer those customers the best technical and commercial service, to capture all the benefits from the projects in the area in a simultaneous manner and to measure the result of all plans as a whole. The detailed preparation of this last criterion should be carried out based on reliable field information that is not available at present. For this reason, the assessment of all the technical and commercial field information will be one of the first actions to be performed when taking over the operation of the company.

a) INU (Integrated Normalization Unit)

The adequate geographic unit for an efficient assessment and prioritization of investments could be an 11 KV circuit, or part of it, as shown in the following example. This area received the name of INU (Integrated Normalization Unit).

The scheme shows an example of a possible layout of an 11 kV feeder and the part chosen as INU, that separates the rest of the feeder with a re-closer that is remotely controlled to improve the quality of service of the INU with respect to the rest of the feeder.

Figure 10 – INU's Area Example

All Improvement Initiatives are executed together in the INU area:

- Losses Plan implementation.
- Commercial and technical Surveys.
- 11 kV and 0.415 kV network Normalization.
- 11/0.415 kV Transformer normalization.
- Meter-reading routes restructuration.
- Commercial Office improvement.
- More payment offices.
- Energy balances.
- Other.

3.2.3. NEW CUSTOMER CONNECTION

Within the strategy of providing a better service to customers and reducing losses (which also means increasing revenue recovery) there is a common element that makes our whole plan possible: a good metering system. Any action of the new management to improve the distribution business would be meaningless without controlling the commercial cycle, for which it is critical to accurately measure and register customer's consumption. This will be beneficial not only for the distribution company itself but also for its customers, who will be reassured that their consumption is accurately metered and thus they are paying exactly for what they

consume; this in turn will contribute to improve the company's image and discourage customer to enter into illegal behaviours.

In all cases, the full ambition of the original metering plan will not be achieved because of cash constraints.

The acquisition of new meters without access to commercial loans and additional equity is a big constraint for YEDC. Provisioning will have to rely on internally generated funds, given that obtaining supplier's credit to YEDC will be challenging in view of the security threats and the revenue shortfall the company is suffering.

Once cash is available, the installation of new meters will be intense to normalise existing irregular consumers. As historic consumers are normalised, the number of new meters per year will stabilize and be devoted to the connection of new customers from organic growth.

The company has decided, as part of its Loss Reduction Plan to abandon post-payment meters and fully focus on pre-payment as a means to reduce collection losses. Some investment in post-payment may be required for areas where prepayment is unpractical.

Check meters have been installed and will keep being installed as required to ensure the accuracy of the readings for the energy received by YEDC; this will contribute to enhance the accuracy of the Market Operator bills.

3.3. OPERATIONAL EFFICIENCY

The operational strategy of the new management will be a combination of General Operational Plans and Business Initiatives that will set the company on track to implement the new organizational structure and install the systems and processes that will allow to meet the short term goals listed for the Technical Performance Plan and create a solid basis adequate to work towards the long term goals.

The level of OPEX available for the company, imposed by the current tariff framework, are low in comparison with international standards and thus the operational plans here proposed are austere and devote resources only in that aspects that are strictly necessary for the ultimate objective of reducing losses and making the company technically and economically viable.

The strategic goals of this plan require that general operational plan that identifies the major activity axis and coordinates them as a whole, because they are correlated and should not be undertaken individually. Within this general plan there will be a series of general initiatives that include:

3.3.1. ADAPTATION OF THE ORGANISATIONAL STRUCTURE

The new management in YEDC has already introduced changes to the organizational structure of the company. Both the organizational hierarchy and key positions in the company have changed and will most likely be revisited again in 2-3 years to clarify responsibilities allocation and set a distinctive communicative scheme that is adapted to the new challenges for YEDC and which this plan addresses.

Please refer to the Management and Staffing Strategy for detailed information on this matter.

3.3.2. OUTSOURCING OF PERIPHERAL ACTIVITIES

In order to make the workforce more efficient, without interrupting the necessary activities for the operation of the company, it is necessary to outsource certain activities that may be efficiently provided by third parties. Nevertheless, it needs to be mentioned that under the current circumstances having reliable counterparties or bringing workers to the Yola service area is very complicated.

Please refer to the Management and Staffing Strategy section of this plan for more information.

3.3.3. IMPROVEMENT OF PERSONNEL SKILLS

Please refer to the Training and Capacity Plan for more information.

3.3.4. IMPLEMENTATION OF SUPPORT SYSTEMS AND IMPROVEMENT OF THE QUALITY OF INFORMATION

In order to control the multiple activities carried out in the company, it is necessary to have adequate information systems and hardware. The current situation in YEDC in terms of information management and resources planning is chaotic and relies on slow and inaccurate processes. This plan proposes a fast and strong modernization of the support systems that will allow YEDC to meet its cost reducing and efficiency improvement objectives. The proposed systems are:

Commercial System: This system administers the information related to customers, the technical information of the supply, the energy used and invoiced in each period, the application of the corresponding tariff, the bills issued, the payments made, the claims and the operational tasks performed on the customers' supplies, such as inspections, interruptions, change of meter, etc. This system is the most important for the operation of the company, so its implementation will be carried out immediately after taking over the company.

Together with the implementation of the software, it is necessary to implement a campaign for gathering real and reliable information in field, and for training the personnel in the use of the system.

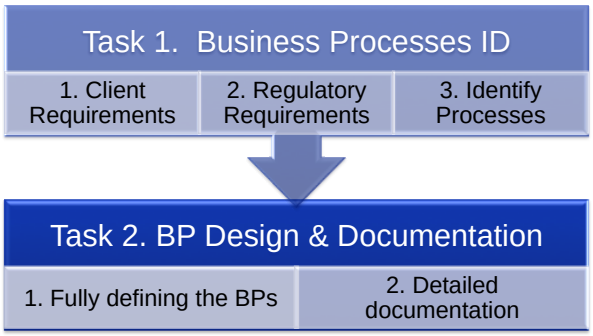
AMR (Automatic Meter Reader): This system is used to read the meters in a remote way, without it being necessary for a person to get to the location of the meter. The meters included in this system have special characteristics and require a communications system linking them to the central equipment. Additionally to the reading, these meters may report to the central system any news such as absence of electric energy, lack of phase or any other condition related to their operation. Due to their cost, the investment will be optimized by first deploying AMR for large customers, and thus providing them a first class service while controlling the concentrated power extractions in the system, and for bulk supply points where the power is received from the transmission company or generation companies in order to control the power injections in the distribution system.

ERP (Enterprise Resource Planning): This system administers the information and the processes associated to the support activities, such as warehouses and stock handling, vehicle fleet, in-house and subcontracted personnel, payment of services rendered by third parties,

purchases and suppliers, and other accounting processes. The implementation of this system should be performed at the start-up of operations under the new management.

Together with the implementation of the software, it is necessary to implement a campaign for the gathering of real and reliable information on the current situation as well as the training of the personnel on the use of the system.

3.3.5. REENGINEERING OF INTERNAL PROCESSES



This item includes all the activities to improve the different processes that are routinely carried out in the company. The following detailed business initiatives describe the main initiatives grouped by process, indicating the execution term and the associated strategic goal. The implementation cost of these initiatives is considered in the OPEX budget, except for those identified as CAPEX, which were included in the list due to their importance in the Operational Plan. It should be considered that the Investment Plan (CAPEX) and Operational Plan (OPEX) Plans are complementary and, therefore, should not be taken as isolated plans.

3.4. CORPORATE SOCIAL RESPONSIBILITY (CSR) – HSE ASPECTS

The Corporate Social Responsibility plan for YEDC remains as in the Bid Plan. However, we note that implementation in full will depend on the cash available to the business. Until the plan is fully formalised, focus will be on the health and safety of our employees and customers.

3.4.1. GENERAL PRINCIPLES

As defined by the European Union in its "Green Book"[67] Corporate Social Responsibility can be defined as a management concept by which *"companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis. Being socially responsible means not only fulfilling legal expectations, but also going beyond compliance and investing 'more' into human capital, the environment and the relations with stakeholders".*

Considering the above definition, there are a series of issues in which the current working context of YEDC needs to evolve to "embrace" the CSR concept and to integrate it into their management culture:

- The management of the CSR issues in YEDC is driven by compliance with the applicable Nigerian Laws and the regulations provided by NERC (Nigeria Electricity Health & Safety Standards Manual). Most of the companies adopting CSR Policies and strategies do so,

among other reasons, because of the added business value of going "beyond" legislation as a way of getting to excellent performance.

- CSR policies and strategies are aimed to meet expectations from the various stakeholders (internal and external) depending upon their significance and the potential impact to the business, whether or not beneficial or adverse. For that, companies adopt methodologies for the identification and assessment of stakeholders and expectations; also, they develop programmes to engage with the relevant stakeholder groups; as a result, the companies build CSR strategies to respond to the main expectations that can turn into "business risks", thus adopting CSR as a competitive advantage.
- As CSR becomes strategic, its management requires:
    - To have a specific organisation to deliver on its CSR objectives and actions, reporting directly to the top management.
    - To be integrated into the governance and assurance processes of the company.
    - To cover all the CSR main topics: economic, environmental and social management, in a balanced way.

The areas of concern must be found within the CSR universe (this means they must be related to the economic, environmental and social aspects of company's activities), and typically will include:

- Environment: Emissions, climate change, waste management, consumption of natural resources, land use, biodiversity, landscape impact, etc.
- Social: generation and quality of employment, working labour, health and safety, community relations, capacity building for local communities, equality of opportunities, etc.
- Economic: wealth and profit, business continuity, quality and service management, access to capital, supply chain, bribery and corruption, etc.

The CSR strategy of YEDC must be aligned to mitigate the CSR business risks by meeting relevant expectations of the key stakeholders in relation with the key issues. The following items will indicate to company the recommended practices that the investors will implement to fill into the CSR strategy. The components elements of the strategy have been identified through a benchmarking on similar approaches obtained from similar companies of electricity distribution in Europe, similar countries in the area, and the recommendations provided by the different previous studies in Nigeria.

In YEDC, a plan for covering the CSR aspects will be developed. This plan will include and follow the below principles:

- Governance and Strategic Topics,

- Management of Work Force Related Topics,
- Occupational Health & Safety (OHS) Management,
- Environmental Management,
- Quality Management,
- Management of External Social topics,
- Promotion of access to electricity in rural areas.

3.4.2. IMPLEMENTATION OF THE CSR PLAN

The main constituents of the CSR Plan to consider at this stage will be as follows:

a) Definition of a CSR Strategy

So far, we have been describing the elements that are considered as the potential constituents of the CSR Strategy of YEDC. Obviously, these elements will have to be adopted internally and modified according to the internal specificities of the YEDC and subsequently assign roles and responsibilities to them. In order to produce a sound CSR Strategy, and base on the results obtained from the relevant CSR Study described in this document in section of studies, the following items shall be considered:

- Adoption of Social Development (SD) Principles / CSR Policy
- Adoption of SD Commitments by Issue
- Adopting a public commitment for developing world class Environmental and Social Impact Assessment (ESIA)

b) CSR Organization

YEDC would require a solid organization to deliver on the goals set by the company in order to achieve its vision.

Whereas the Corporate CSR function will work on the strategic issues (setting the strategy, adopting principles and determining the tools to manage those issues at the whole YEDC), the CSR organization at operation level (the regional systems) shall be in charge on implementing the adopted solutions and management systems and on taking the necessary actions to deliver the corporate objectives. Thus, it is clear that there will be a CSR corporate function with a different profile to that of the operating one.

In the development of the CSR plan, the Corporate CSR function must be covered early in the process, ideally early enough as to guide in the process to set up the strategy and follow up with the deployment of the plan.

For the operating units, the need for creating CSR-related functions will be determined by the management systems in place. They will not replicate the corporate function, but will rather be in charge of managing specific aspects under the CSR umbrella, such as quality management,

environmental management, etc. Training requirements will need to be defined to cover all the positions. Also, the implementation of the management systems will imply the adoption of sound training programs so that the staff at all positions is familiar with the requirements to develop their jobs in line with the quality, environment and health & safety principles adopted.

c) CSR Management Systems

In order to support the CSR policies adopted and provide governance to the CSR main topics, YEDC will adopt at least quality, environment and health & safety management system according to the respective International Standards of Applications (ISO 9001:2008, ISO 14001:2004 and OHSAS 18001).

Following are some specifics for the design of the several management systems: as all of the proposed standards share the same Plan-Do-Check-Act philosophy, several of the elements are similar to all of them (allowing to minimization of activities and integration of functions).

- Design and implementation of a **Quality Management System**:

The definition shall start by a deep review of YEDC internal processes and functions, leading to the definition of a process map, determining the key processes (those adding value to YEDC's clients), the strategic processes and the support processes.

Once the process map is outlined, the definition of the different management elements (manual, operating procedures, technical instructions, standards, etc.) can start. Implementation will comprise the training of all the staff at all levels so that every member of the YEDC knows how to manage his/her activities according to the quality objectives of the corporation.

- Design and implementation of a Health & Safety Management System:

Based upon the existing regulations provided by NERC (Nigeria Electricity Health & Safety Standards Manual). One of the main challenges in this respect will be to assume the leadership and responsibility about the health & safety management of the subcontractors, setting the standards to be followed by them and considering their past health & safety performance as a criterion for future contracting.

In particular, a health and safety plan must ensure a systematic approach to ensure and maintain a safe and healthy workplace for all employees. This will ensure a reduction in accidents and illnesses in the workplace. It should also ensure the safety of the public in relation to the Disco assets and workplaces. The health and safety plan will focus on the following objectives and activities:

- Setting clear responsibilities for management, supervisors and employees
- Safety in the workplace and in transit
- Safety equipment, tools and clothing
- Safety for construction sites and installations
- Safety for "live chambers"
- Safety in emergency conditions

- Inspection and testing
- Safety investigations
- Procedures in the case of accidents, including first aid
- Safe operating
- Safety organisation
- Safety training
- Design and implementation of an Environmental Management System:

Environmental management will require YEDC to set a long-term objective in order to meet requirements in the international standards ISO 14001.

For that reason, the initial environmental review of YEDC will be done relatively early within the CSR Plan, so allowing the company to adopt the necessary measures to minimize its environmental impact in the fields of atmospheric emissions, noise, soil pollution, production of waste and waste water. As some of the potential issues to find in that review will require investment and/ or infrastructure, we recommend to start the review early and define a specific plan to adopt and implement the required needs, then building the management system as in the previous cases.

In particular, the environmental plan will address the following objectives:

- To address the shortcomings as identified in the CPCS audit report. This will include:
- Enforcing of servitude clearances for high voltage lines through support of the Nigerian Police. This includes pruning of trees penetrating servitudes
- Fencing of substation areas
- Replacement of rotten poles
- Implementing transformers that are environmental compliant
- Providing all workers with suitable safety equipment and gear to ensure a safe working environment
- Implementing environmental audits
- To comply with the EHS policy and the relevant Nigerian legislation (Compliance program)
- Promoting awareness, education and training with regards the various environmental practices to be employed (training program)
- Setting and reviewing of environmental objectives
- Documentation and reporting on environmental performance
- Managed material program to ensure dealing with pollution or contaminants (remediation program)

- Dealing with materials at worksites that can influence employee health and safety (managed material program)
- Creating organizational structure (or unit) and resources in support of implementing and monitoring environmental policy and plan.
- Setting clear responsibilities for management, supervisors and employees with regards to environmental policy and implementation.

d) CSR External Engagement and Reporting

Part of the CSR corporate function will be the development of a plan for external stakeholder engagement, including the disclosure of relevant CSR information in a periodic manner. Normally a communication plan is expected to define the means for communication and the messages relevant to every stakeholder. The way to develop this will have to be agreed in the future organization between the corporate CSR and external Communication functions, depending upon the responsibilities assigned.

A specific tool for external communication on CSR will be to issue an Annual CSR report, in line with the normal trend in companies globally. Although it is a communication tool, its internal technical content makes that normally the CSR function leads or is heavily involved in the preparation of this report.

In order to produce a balanced CSR report, and considering the starting point of YEDC, based on the information gathered through interviews, we consider that the company is likely not to be ready to produce such a report in the first years of implementation of the CSR strategy. Partial reports covering only some topics or dealing only with some aspects of CSR (whether quality or social, or health & safety or environment) will be possible progressively as the management system evolve (the so-called "fragmented" CSR reports. However, a minimum will be required in terms of KPIs developed and managed in order to produce the reports and to show the external stakeholder the improvements made.

3.5. IMPROVEMENT TO QUALITY OF SERVICE

The main objective of Quality of Service is to provide more constant and reliable power supply to customers, i.e. less and shorter interruptions. However, in the short term it will be focused on restoring supply to currently offline areas whenever the security situation allows it.

The Quality of Service experienced by customers is mainly determined by interruptions caused by:

- Lack of available power generation;
- Sabotage and direct attacks of terrorists and insurgents to network assets (transmission and distribution);
- Outages and overloading constraints of the Transmission Grid; and
- Outages and overloading constraints of the Distribution Network.

The quality of technical service that customers receive is currently strongly determined by the security situation affecting most of the business units in which YEDC operates, the generation deficit and the transmission system overloads. All these factors force YEDC to perform load shedding to adjust the demand to the available capacity and to leave large areas in its territory without electricity for long periods (some for several months). Moreover, YEDC's network actual conditions add additional outages to its customers, both due to facilities overloads and due to the lack of coordinated protection systems. In this area, the main objective of this investment plan is to reduce those outages whose cause is attributable to the distribution company itself and thus fall within its management and responsibility. The means to achieve this objective will be to eliminate the overloading problems generated by distribution transformers that cause interruptions during several consecutive days and to install auto-reclosers and fuses that work in coordination.

The currently available historic data on interruption statistics does not take into account this disaggregation of the responsibility for causes of interruption (Generation, Transmission, Distribution), and thus it is not fit to fairly allocate responsibilities and identify actions for improvement. Moreover, there is no detailed information on interruptions, such as their individual duration, the number of customers affected, so that it is not possible to form precise conclusions as of now. The information on interruptions statistics provided during the privatization process due diligence has been assessed and is considered unreliable. At present, the data is not reliable enough to properly calculate reliable SAIDI and SAIFI statistics, but the on-going installation of metering devices and the improvement of substation registers will help.

The lack of proper operating metering equipment distributed along the network feeders has prevented the new management from having detailed records of supply interruptions. In this way, this plan cannot consider the baseline proposed in the privatization process or any historical record as starting point and the proposed future improvements must be based on relative quality increases from the present situation, after the security concerns are over and the company has freedom to operate its system. Once the situation is normalised, YEDC will work towards monitoring its performance in this area through the SAIDI and SAIFI statistics, which are the best indicator of the way interruptions impact or are perceived by customers.

The present security situation that YEDC is facing does not allow the company to carry out investments and operations in a normal manner. Prioritization of resources and targets is thus essential. Therefore the management considers that setting targets on the quality of service (SAIDI, SAIFI, CAIDI) would be unrealistic and unpractical. The company will keep trying to minimize supply interruptions as much as possible given the circumstances.

The load flows in the system have been redirected to the areas where it is still possible to supply customers, trying to make the best out of the dire situation created by the sabotages and attacks suffered on a regular basis. Once the situation is normalized and normal operations assured with most customers receiving regular electricity supply, it will be time to focus on closely monitoring and improving interruption statistics.

4. OPERATING EXPENDITURES

The costs associated to the implementation of the operational, organisational and staffing plans previously presented, including the OPEX component of the Loss Reduction Plan and the cost of acquiring the energy required for supplying demand are presented in the table below.

In the Status Quo scenario, out of the total income, approximately 30% goes to the MO Bill in 2015, in reality billed by both MO and NBET under TEM, which include the payment for the energy required, plus the NERC Charge, the Bulk Trader Charge and the TUOS Charge as per the MYTO 2015.

Apart from the Power Purchase expenses, the Admin & Human Resources (mainly personnel expenses) are the highest operating cost component. They represent around half of the total OPEX in the Status Quo scenario in 2020-2024.

In a constrained cash environment, both salaries and payment of the MO bill will clearly come under intense pressure.

5. STUDIES TO BE CARRIED OUT IN SUPPORT OF CAPEX ALLOCATION

The CAPEX plan was made based on the available information and assumptions. It will be essential to carry out some studies and analysis with the aim to more accurately identify possible variations and adjust the plans and priorities according to the existing reality in each company.

We propose to perform the following studies, with the target date based on the most optimistic scenario. In the Status Quo scenario, it is unlikely the company will be able to proceed with any studies and the expenditure will only be in the most essential areas.

Table 9 – Required Investment Studies

Nature of Investment	Proposed Study [Title – Scope]	Target Date [Month]
Loss Reduction	Situational assessment of market and key areas of action.	6th Month
New Metering Tech. Assessment	Study of suppliers and product options and availability.	8th Month
M.I.S. Strategy	Study of suppliers and product options and availability.	12th Month
Distribution Master Plan	Definition of efficient allocation of investment to Network Lines and Transformers	24th Month
CSR & HSEQ Assessment	Identification of critical existing issues which requires immediate attention.	18th Month
Inventory Assessment	Review of available stocks and materials operations. Assessment of local suppliers for specific services.	12th Month

5.1. LOSS REDUCTION STUDY

During the first six months of the operation, the company developed a deep baseline level study for losses. This study was completed by an international consultancy company specialist in the topic and with wide knowledge of the local framework. That baseline loss study set the base to continue with the execution of the Loss Reduction strategy YEDC had planned in the previous version of this BP. Even though the budgetary constraints have not allowed the company to follow the Loss Reduction Plan as it was, the plan still holds. The next step in the implementation of the Loss Reduction Plan would be to contract out a detailed Loss Reduction study covering the following four steps:

- **Deep assessment of company's** situation by means of the combination of a Desk Analysis and a Field Analysis and measurement.
- **Segmentation** of losses sources by customer group according to consumption, typology and geographic area. Network segmentation for technical losses.
- Simultaneous **assessment** of Fraud, Administrative Losses, Technical Losses and Customers Dissatisfaction.
- Actual implementation of defined losses **reduction activities** and creation of adequate conditions and solid support to maintain low losses in the long term.

Information on the actual condition of assets and in particular of metering equipment (physical condition, installation, etc.), the presence of different sources of fraud (tampering, bypassing, meter reading mistakes) and to what degree customers' dissatisfaction is encouraging them to incur in fraud, collected during the baseline loss level study will be used to update the Loss Reduction Plan as soon as the operational situation of the company is normalized.

Additionally, some further studies will need to be done to reinforce and secure effectiveness of the plan:

- **Assessment of the electric assets and customers of the Distribution Company.** (In order to efficiently prioritize and allocate the expected investments in the Loss Reduction Plan and replacement plan efficiently). The physical condition of the power lines, the right-of-ways and the customer categories connected to each line should be identified using GIS tools. This information must be quickly replaced and does not require details such as GPS nor carry out individual customer surveys. Basically, having the best possible information in a fast way to identify the priority areas to start with the Loss Reduction Plan and define the areas where a whole normalization (INU) and the plan of network rehabilitation to improve the quality of the service. In order to do this, knowing the network status and the type of customers they serve is key.
- Assessment of the condition of existing network meters and current and voltage transformers installed in the bulk energy metering points. In order to make the best decisions on network meters in the case of residential, or small commercial customers, and to prioritize and

allocate the investment of the LRP aimed at large customers, it is necessary to have an evaluation of the condition of the network meters, the transformers and its performance.

- **Assessment of the condition of network meters and current and voltage transformers of large customers.** Due to the fact that the energy purchase is limited by the indications of the network meters, it is a priority to know if they are in the right conditions and if their design is appropriate for the current they are measuring.

5.2. NEW METERING TECHNOLOGIES MARKET ASSESSMENT STUDY

Before implementation of projects such us Pre-payment and AMR, and due to the budgets available, it is necessary to carry out the following two key assessments:

- **Suppliers Market Assessment.** In order to verify and confirm options in the market to supply the require meters, remote communication, software and hardware with proven experience that can be useful to the DisCo accelerating project approach. It is key to seek for Turn Key Service Providers during this assessment stage, which will definitely help optimising economical and logistical resources.
- **Assessment and diagnosis of the voice and data communication system.** It is necessary to have an assessment and diagnosis of the voice and data communication system of the company, because the technical teams doing fieldwork will communicate by radios, the administrative officers by phone and mobile phone and the systems by data networks.

5.3. MANAGEMENT INFORMATION SYSTEMS

It is obvious that some fundamental changes are required in the working of the power sector entities for putting into practice the vision of reliable, affordable and quality power. The on-going reforms have improved operating structures, commercial orientation, transparency in operations and overall customer orientation. The key initiatives that enabled these changes include:

- Unbundling of integrated entities into generation, transmission and distribution corporate,
- Setting up of independent authorities to regulate the sector,
- Campaigns to enhance revenues, reduce losses, improve maintenance of networks and enhance customer services,
- Substantial investments to enhance the quality of networks.

However, there has been limited success in institutionalizing these changes. The need now is to institutionalize the changes and bring about sustainable and pervasive improvements. This

requires improving the operational processes by leveraging best practices and best-of-breed technologies.

The global IT market for the power sector provides a wide range of technologies and solutions. These solutions address the entire business value chain in power utility – from setting up generation capacity, transmission and distribution network and service connection to distribution load management, delivery of power and customer facing processes. There is a large share of custom developed IT solutions also in use, primarily in business applications and very little in IT Infrastructure.

DisCo needs to embrace a thorough situational analysis and market options in order to go for must appropriate MIS Solution. This is definitely complemented by the Management Information System Implementation Scheme (detailed described in Supporting Documents 5).

Additionally, some further studies need to be done to reinforce and secure effectiveness of the plan:

- **Assessment and diagnosis of the information systems installed at the load dispatch centres.** It is necessary to perform an assessment and analysis (automated or manually-operated) of the systems used to register operations on 11 and 33 kV networks, their times, the reasons and their relationship with the Operator of the Interconnected System. An accurate diagnosis should be carried out in order to know the type of SCADA and the support systems that should be acquired, as well as the improvements that can be implemented in the internal processes.
- Assessment and diagnosis of the system where the technical, commercial and administrative information of the company's customers is administered. It is necessary to perform a system assessment and analysis (either automated or manually operated) used to register the customers' commercial and administrative operations. Type of connection, meter, invoice, charges, cuts for non-payment, complaints, etc. An accurate diagnosis should be done in order to know the type of Commercial System that will be purchased, which supporting systems should be purchased, as well as the improvements that can be implemented in internal processes.

These studies will produce the following outputs: a) an assessment of the situation of the existing systems in the company; b) a recommendation to install new systems to support the improvement plans; c) specifications and bidding documents for the procurement the documents.

5.4. DISTRIBUTION MASTER PLAN

The following studies are to be developed:

- Analysis of the real service quality received by current customers. Identification of service outages, the reasons and the responsible parties. Identification of the real non-served energy

and the maximum demand served without interruptions due to generation deficit. (In order to guide the rehabilitation and expansion investments). This study aims to get information to identify the energy that is not being, but could be sold if the problems regarding the Distribution network causing the restrictions are solved. In addition, a real value of the quality of the service received by the customers in the current situation will be taken into account in order to have reliable indicators that will allow us to see the evolution of this variable and give the managers information to make decisions.

- **Study of the transmission system, the demand and the planned works by the Transmission Company.** (In order to promote the works on the transmission systems that can favour the development of the distribution company). The aim of this study is to identify the works that the Transmission company must carry out in an appropriate way to remove or prevent any constraints in the transmission grid, that limits the energy flows and sales and may have an impact over the distribution company's sales forecast. This study will allow people in charge of the relationships with the Government, to have information to manage the transmission works with suitable criteria.
- **Assessment of the electricity load and flows, according to these priorities:** to prioritize the rehabilitation and expansion network investments in an efficient way.
    - 33 kV network and 33/11 kV substations
    - 11 kV network
    - 11/0.415 transformation centres
    - 415 V network

5.5. CSR STRATEGY & HSEQ DEVELOPMENT PLAN

Stakeholder identification and Assessment and Identification of Critical CSR Issues. This study will include the following steps:

- Stakeholders' identification and needs assessment
- Processes Development aligned with H&S Manual
- Definition of Environmental policy for the company
- Definition of communication policy and processes thereafter

The result of the assessment shall be for YOLA to understand the CSR issues that maybe relevant for the different stakeholder groups and how they can affect YOLA business and/or the improvement process itself.

This process is normally reviewed once a year in rapid exercises to assess the relative gain/loss of significance of the stakeholder groups or CSR issues, and the way that the YOLA will face those changes.

5.6. INVENTORY ASSESSMENT

- **Assessment of the Non-electric assets of the Distribution Company**. (To prioritize and use the expected investments in the D category of the investment plan in an efficient way). This assessment is performed to know the state of the customer service offices, and the offices where the commercial teams, technicians and administrative officers of the Distribution company work. The aim is to know the available assets in detail, their state of conservation and their competence to assist customers and accommodate their own staff, following the new management strategies. This information will help the decision-making process and the priorities to allocate the investments to improve buildings, vehicles and tools, expected in the D category of the investment plan (Non-electric).
- **Assessment of available materials in stock and availability of the local suppliers of materials and services.** This assessment is needed to develop the procurement plan and define the possible investments in the networks within the first year of operation. During the first months of operation, the work will be limited to the stock materials that the local suppliers can provide in an immediate way. Anything that needs to be purchased abroad or that needs to wait for the manufacturing time, will be available for use at least six months after the definite purchase. The purchase can be delayed 2 or more months, due to technical definitions, prices and selection processes, issuing purchase Orders and payments.

V MANAGEMENT AND STAFFING STRATEGY

During the Handover process, YEDC introduced key expatriate personnel with experience in organisational turn around. These were experienced managers provided by MERALCO, the technical services provider. An early task was to identify and retain core personnel who are knowledgeable about the health of the network and to plan and execute staff training focused on the new practices.

The security situation has put all staff under intense pressure, and makes recruitment and retention difficult. The safety of staff is difficult to ensure in the current warlike environment.

Here we present an update to our original management and staffing plan. It is worth noting that full implementation of this plan will only be possible to achieve when the security situation improves. For example, it is expected that recruitment and retention of key staff will continue to be a challenge, and that outsourcing will only be available in limited circumstances and at a substantial premium because of security requirements.

The ultimate goal of YEDC is to operate a world-class distribution company, focused on efficient delivery of services to its customers, and value creation for shareholders and stakeholders alike. This long term operating goal requires, among others, that the Company seeks and adopts global best practices in disco management, employ and train staff to the highest professional standards attainable in Nigeria and compensate them as such. Human resource issues of concern include:

- **Ratio of Personnel to Customers:** The Company will work towards a customer to employee ratio of 329/1—from its current level of 398/1 (956 staff as at December 2019 and with a baseline customer population of **380,061**). This is already significantly different to the ratio of 102/1 pre-handover. This will be accomplished through (i) growing the customer base and (ii) reduction in strength of existing personnel (attrition, trainability & performance assessments and outsourcing policies). The projection is shown in the table below:

Table 10 – Customer to staff ratio projection

	Status Quo		Modest		Optimistic	
Loss reduction pathway	**Staff**	**Customer to Staff ratio**	**Staff**	**Customer to Staff ratio**	**Staff**	**Customer to Staff ratio**
2020	956	398:1	956	398:1	956	398:1
2021	956	398:1	981	387:1	1,006	378:1
2022	956	398:1	1,006	378:1	1,056	360:1
2023	956	398:1	1,031	369:1	1,106	344:1
2024	956	398:1	1,056	360:1	1,156	329:1

- **Skill (staff) Mix:** The staff mix should change to ensure that personnel are focused on activities that are central to the operations of the organization. About 38% of the staff, a significant portion of the staff strength was employed in overhead or administrative functions. The most challenging task is finding qualified engineers and technicians (Lines men, Electrical Fitters, Cable Joiners) who ensure the technical sustainability of the company.
- **Competition for Talent:** With privatisation, discos are competing for the most talented employees within the existing pool. This results in a hunt for engineers, technicians and computer services professionals. Financially strong discos are in a much better position to recruit and retain top-flight talent from within the system. In addition to that, the North-East region where Yola operates is plagued with security and social issues that minimize its attractiveness for employment. In the short term, YEDC is unlikely to be able to win the bidding war for talent, and thus is best positioned to focus on identifying and training staff with good to excellent aptitude.
- **Training:** Management are charged with creating a work ethos, which discourages theft and self- dealing, while providing the staff the tools and resources necessary to accomplish their tasks. Staff must be able/ willing to (a) identify facilities that require repair and replacement (b) monitor customer consumption to identify power usage patterns, electricity theft and energy losses and (c) customer oriented and open to addressing complaints/ concerns quickly. Additionally, management will work to minimize attrition among trained staff in which the company may have invested considerable resources.
- **Change Management:** With the privatization of assets, personnel have been forced to accept and cope with systemic transitional changes at all levels of the operating environment. These organizational changes may have a counterproductive impact on personnel attitude, behaviours, morale and ultimately productivity if not properly implemented and controlled. In anticipation of personnel resistance to these changes a clearly defined change management approach is being implemented by YEDC manager to (a) ensure that changes are within scope and advantageous to the operations (b) determine how changes will be implemented (c) deploy the appropriate control mechanisms to manage change as they are implemented. In order to successfully accomplish these goals, HR must be adequately equipped to effectively communicate, educate, train and counsel to effectively align all levels with the strategic direction and expectations of the organization. This will be achieved thanks to the implementation of Emotional Intelligence sessions that will transfer employees the importance of self-awareness, continuous self-improvement,

and social awareness and relationship management to achieve the structural changes required in the organization.

- **Incentives:** Prior to privatisation, incentives provided by PHCN may not be aligned with the objectives of the current management, particularly in implementing the loss reduction plan. It will be important that the incentives of all staff are designed to ensure delivery of the loss reduction plan and other key targets, from senior management right down to the marketers collecting revenue.

1. TAKEOVER PROCESS

YEDC recognizes that the operation of a distribution company is a labour-intensive exercise. Therefore, human resources issues are of great importance. After taking over the management of YEDC, the new management immediately implemented a number of measures (as part of the business plan) to effectively take the control of the company.

Security: to YEDC, the security of human beings, either local population or employees, is top priority. The management has only tried to operate in conflictive or dangerous areas as long as reasonably practical. Whenever the situation in a certain location is too risky, operations are to stop. This is instructed to employees throughout the whole organization.

Staff Reduction: In view of the overstaffing, the new management carried out an intense retrenchment exercise to bring down the staff numbers to reasonable levels, adapted to the size of the business and the organization. This way the company reduced its staff count from 1,736 pre-Handover to 958 employees as at December, 2019.

Source of Employees: The primary source of employees has been ex-PHCN staff that worked for Yola Disco pre-handover. However, there was a nationwide search for talent from outside the disco complemented by individuals from discos in other countries, which have made advances along the lines that the YEDC Board desires.

Re-orientation: Existing employees and customers must be re-oriented and management will adopt an open door policy to customer complaints. This is critical during the transition period when customers will be hit with higher tariffs and little or no improvement in the amount of electricity they receive during the long supply outages that Yola is suffering. The employees will be subject to significant customer harassment and must be patient and courteous. Also, it is likely that the incentive to collude with customers at the expense of the Company will be greatest at this point. Consequently, a strong, progressive discipline policy for dishonesty must be instituted and enforced.

Training: In a peaceful situation, with less political and social instability, YEDC could benefit from its low cost location and potential quality of life advantages as a region with high growth potential to retain and recruit competent second tier personnel (from the perspective of experience). Although this is not possible now, the management is aware that it needs to think about the demands that potential new employees would ask in the future.

2. ORGANISATIONAL STRUCTURE UNDER THE NEW MANAGEMENT

This management plan is designed so that the company is organised in such a way that it profits from the "pros" of the decentralisation, and reduces its "cons" by implementing a stringent central control through the use of modern and efficient Management Information Systems. This represents a change with respect to the current district-wise organisation, in which the decentralised units lack sufficient activity planning, management and monitoring capacity. In an environment where the knowledge and control of the customers is key, the use of centralised M.I.S. provides a solid approach to the solutions.

The company will maintain a Zones structure, however the existing zones will be optimized and organized into a number of commercial and technical sectors depending on the size and density of the areas covered; small enough to be close to clients' needs but strong enough in size to be capable of providing the solutions the clients are expecting from the company.

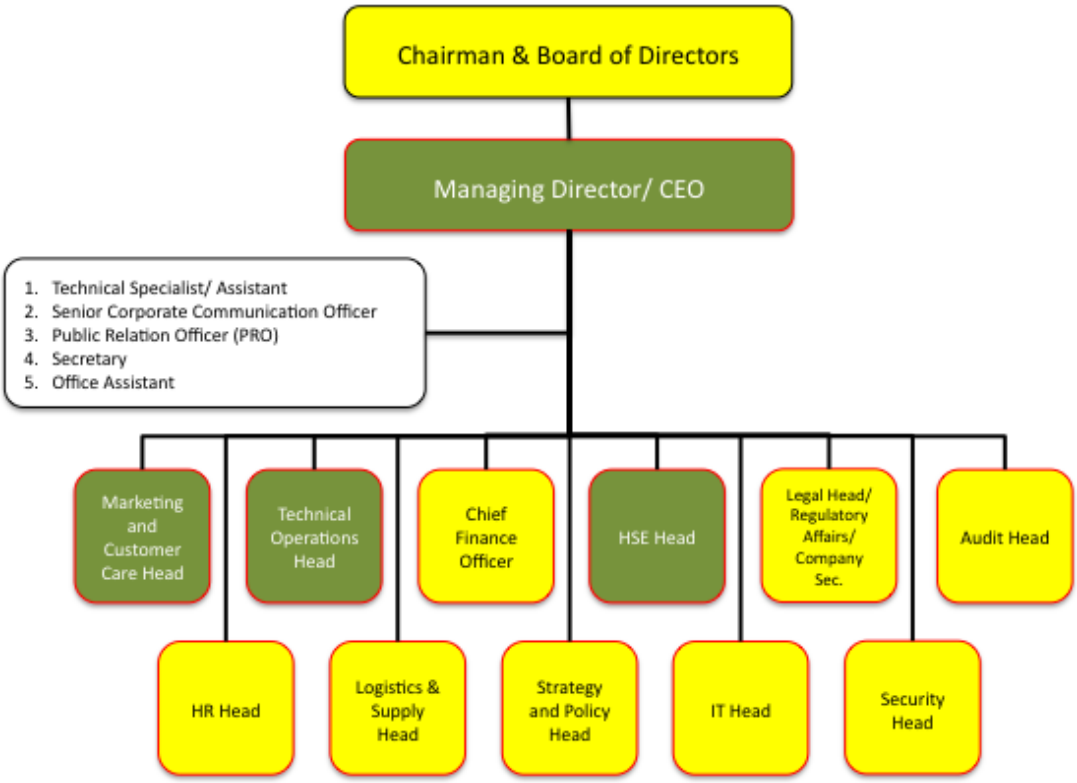
At the same time, the company requires a firm and stringent control of present operations as well as preparation and planning for the future of the company. To accomplish this control, a strong commercial and technical department at headquarter level will be recommended, which will serve as the main leaders in their field of expertise for the company and to which the decentralised zones report. This department will manage the different task forces needed for the ad-hoc business process restructuring activities.

To ease the transition and the implementation of new activities and processes, some positions in the proposed organisational structure will be temporary and probably disappear once the company has fully integrated its new strategy.

2.1. TRANSITIONAL ORGANISATIONAL STRUCTURE

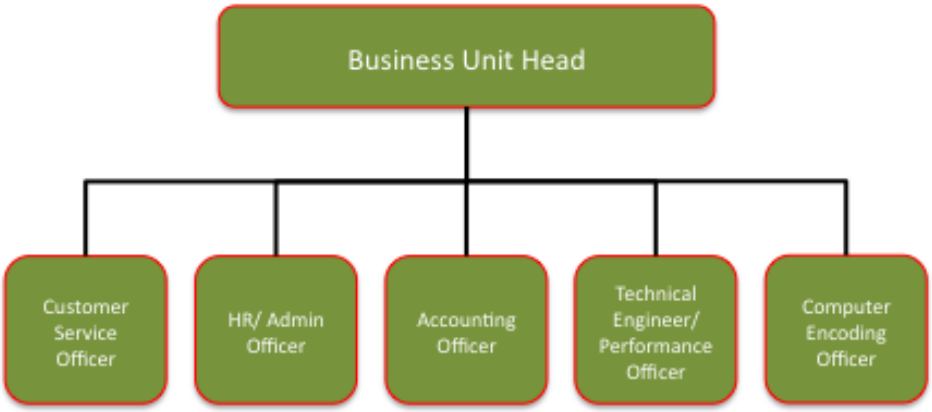
In the interim, during the time that it takes to solve the short term issues that the company is facing. The management of YEDC is organised in a transitional structure:

Figure 11 – Transitional Management Chart



Within the transitional organization, each of the Business Units are arranged as per the organogram below, led by a Business Manager:

Figure 12 – Transitional Business Unit Organogram



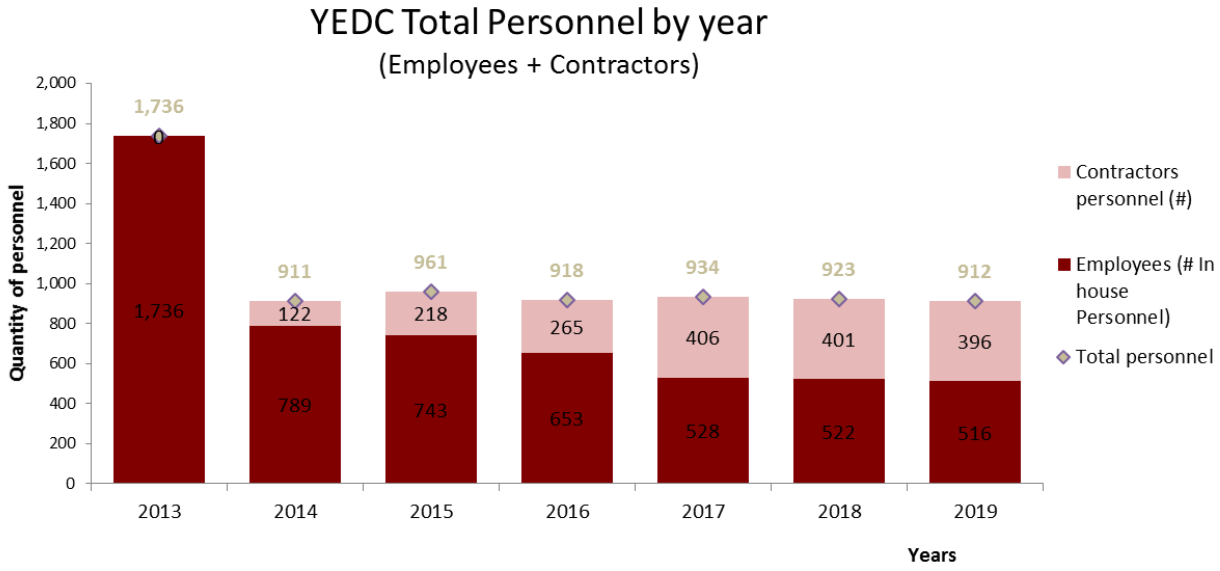
3. STAFFING STRATEGY

3.1. INITIAL STAFF REQUIREMENTS AND PERSONNEL EVOLUTION

At the time of Handover, YEDC was overstaffed; the number of employee pre-handover was 1,736, when the reference level for a company of its size would be 700-1,000 employees (depending on the resources available and the automation level). The retrenchment effort was successful and after handover the company had 789 employees in its payroll in 2014.

In the coming years, the management expects to keep reducing the number of employees in-house, fostering the creation and contracting with qualified services providers in the region. Such services providers would be subcontracted by YEDC, gaining some flexibility in the human resources structure of the company, even if at a slightly higher cost.

Figure 13 – Evolution of Total Personnel



3.2. OUTSOURCING PLAN

3.2.1. OUTSOURCING STRATEGY

Changes in the number of employees will require time to plan and to implement. It will be important to reduce the staffing levels in conjunction with capacity building programs, outsourcing and with a master reorganization plan. Over time, however, the desired customer to employee ratio can be achieved. The approach taken to organisation change is centred on keeping core activities developed by in-house personnel and contract those that are not essential to be kept in-house and can be transferred to other providers. In the first six months therefore the management will seek to define core and non-core activities.

According to this scheme, and in order to mitigate potential reactions by the Unions that may represent an obstacle to the implementation process, the plan considers the development of "small companies", whose creation will be coordinated with the Unions, which will sign Service Contracts with the company (e.g. meter reading, bills distribution, notifications of service interruption, disconnection and re-connection, drop service installation, low voltage network

maintenance, etc.). It will be also of much help for the staff optimization the program for development of rural self-sustainable renewable initiatives.

The increase in the participation of contractors is gradual and progressive in order to reach the reference benchmarking values for each process or activity.

3.2.2. STRATEGY OF IMPLEMENTATION

In order to guarantee the implementation of the Outsourcing Plan, it is important to establish strategic alliances with Contracting Companies that have a high potential for development and evolution.

This strategic alliance is supported by the following assumptions:

a) The Distribution Company carries out a selection process of personnel that will be trained by YEDC. These employees will be part of the Contractor's Staff so as to guarantee that the Contractor will have qualified personnel.

b) Definition of medium term contracts with contractors for them to have a clear vision of the relationship with YEDC and perform investments in vehicles, equipment, tools, etc.

To avoid conflicts with the Union regarding the Outsourcing Plan Implementation, it is important to coordinate with the Union the promotion of entrepreneurship initiatives to create "Small Companies". The distribution company should support and assist the Union during the Small Companies' creation process, and define the contracts to be signed between these Small Companies and the distribution company.

This kind of agreements with the Union were successfully implemented across Latin America and should be considered as an option in the implementation of the Outsourcing Plan, which is the key to keep the OPEX near MYTO values.

4. LABOUR DEPLOYMENT POLICIES

Overall there will be a need to introduce more flexible deployment policies in order to meet organisational needs and customers' needs more effectively. It is likely that these policies will have to be negotiated with trade unions but the overall purpose is to ensure better utilization of labour and improved levels of service.

4.1. SHIFT PATTERNS, HOURS WORKED PER WEEK

It is not possible to say at this stage how shift patterns will alter but it is likely that in some locations and functions employees will be required to work to different shift arrangements. It is expected that the new call centres will operate on a shift basis.

The Human Resources Department in conjunction with operational management has carried out an assessment of the shift working arrangements in place prior to the privatisation and identified proposals for change. These proposals have not been fully implemented yet because of the operational constraints suffered by the company since handover.

4.2. ROSTERING

Rostering arrangements will have to take into account the possibility of working longer shifts in return for longer periods off work. In addition some employees who work on shifts might have to be compensated through unsocial hours' payments to take account of round the clock working.

4.3. MULTI-SKILLING

Every effort should be made to introduce multiskilling. Breaking down demarcation between different occupational groups will not only facilitate organisation change but also lead to better team working and a broader skill base.

Management will develop a different approach to working by stressing the importance of building teams to undertake a wider range of tasks. This will require a culture change within the business and take several months to complete. It will be essential to ensure that teams are created which mix appropriate skills with good leaders who will receive training in team building and leadership. Members of each team must have the required skills to complete tasks assigned to them.

In setting up this new system of working it will be important to put in place a system of communications with employees, which enables objectives to be fully understood by all employees.

4.4. OVERTIME

Overtime working should be kept to a minimum but it should be worked at the interface with customers where it is necessary to provide better customer service. Overtime working must be approved in advance by management and should be limited to no more than 1% or 2% of the salaries budget of those departments or functions where it is necessary to work overtime. Overtime must be paid in arrears with salary.

4.5. DISCIPLINE AND ETHICS

The current conditions of employment include disciplinary arrangements agreed with the trade unions and it is expected that these arrangements will remain in place after privatisation. However, it will be desirable to review and possibly amend these arrangements in due course after discussion and negotiation with trade unions. Consideration should also be given to introducing a revised Code of Conduct as part of the discussions about discipline.

4.6. SICK LEAVE ARRANGEMENT

The arrangements for sick leave inherited from the pre-handover management were very generous by international standards and it will be necessary to agree new sick leave arrangements for all employees within a year of privatisation. The current arrangements provide for sickness absence over a long period and too much discretion is given to management to extend sick leave. The rules must be made clearer and provide for quicker intervention by medical advisers.

5. CAPACITY BUILDING & TRAINING

The previous version of the Business Plan included an allocation for training and during the first six months after privatisation. Unfortunately it has not been possible to fully implement it due to budgetary constraints. It will be the responsibility of the Human Resources Department to draw up and agree with management a Training Path for the continuation of the capacity building initiatives. This Training Path will be incorporated into a detailed Training Plan for each category of employees, which should reflect the planned organisation changes referred to above; the Plan should be linked to individual needs and show financial estimates giving an indication of the type of training which should be offered, how it will be provided, who will benefit, and the priority given to different functions and courses.

An indication of the sort of training courses, which we expect to provide one the financial situation improves, is set out in the table below.

Table 11 – Training Plan Scope

Functional & General Training	Course
Technical Training	Loss reduction best practice; network planning; distribution metering; distribution system O & M; health and safety
Finance Training	Capital investment planning; business planning; risk management; inventory management
Human Resources	Managing people; performance management; interpersonal skills; disciplinary skills; absence management
Information & Communication Technology	System security; MS Office/Messaging system; ERP system; Meter Data Acquisition and Analysis
General Training	Customer service training; team building/selection training; presentation skills; time management; basic office skills
Management Training	Regulatory requirements; project management; contracts management; general management courses including business planning, HRM, leadership, strategy development and motivation

The main thrust of the training plan will be to move the organisation away from bureaucratic processes and procedures towards more commercial processes involving improved customer service, team building, and the acquisition of modern approaches to management.

Expatriate managers will be expected to transfer their skills and knowledge to their Nigerian counterparts so that when their contracts end, Nigerian managers will be able to assume effective control of the organisation. The expatriate managers will have specific responsibilities for mentoring their Nigerian counterparts and incentives will be available in their contracts to ensure that the mentoring relationship is effective.